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"The history of our entire nineteenth century is precisely the history of all the work which the Revolution did leave. The Revolution was a creating force even more than it was a destroying one; it was an inexhaustible source of fertile influences; it not only cleared the ground of the old society but it manifested all the elements of the new society. Truly we may call the Revolution the crisis of modern reconstruction."—*Frederic Harrison.*

"In the year 1814 Napoleon Bonaparte ceased to reign over Europe, and, after a short interval, Clement Metternich reigned in his stead."—*Maurice.*

"When the odor of decay permeates society then the fountains of abyss break forth upon it and floods roll over it. In the language of the children of men it is called a Revolution; in the language of the supernals it is a revulsion toward the standard of eternal order."—*Letter of Professor Görres, quoted by Sybel.*

"It seemed, in 1850, as if despotism were triumphant, but appearances were deceitful. Sisera could not conquer, for the stars in their courses were fighting against him. The movement toward constitutional freedom and the independence of oppressed nationalities was a movement which had been gathering strength for more than two generations. For its remote sources we must look back to the middle of the eighteenth century, when English ideas of constitutional liberty were at length taken up and incorporated into the speculations of French philosophers, whose writings were widely read upon the continent."—*John Fiske.*

I. GENERAL AUTHORITIES.

LODGE: *A History of Modern Europe.*

MÜLLER: *Political History of Recent Times.*

FYFFE: *A History of Modern Europe, 3 vols.*

ALISON: *History of Europe, 4 vols. 1815-1852.*

DYER: *Modern Europe, Vol. V.*

ROSE, J. H.: *A Century of Continental History. 1780-1880.*

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2. HISTORIES FOR EACH COUNTRY.

- MARTIN: *History of France, 1789-1881, 3 vols.*
 DURUY: *History of France.*
Student's History of France to 1852.
 ADAMS: *Democracy and Monarchy in France.*
 TAINE: *La Régime Moderne.*
 SYBEL: *Founding of the German Empire, 3 vols., out.*
 LEWIS: *History of Germany.*
 SIME: *History of Germany. (School Series.)*
 LEGER: *History of Austro-Hungary.*
 RAMBAUD: *History of Russia, Vol. II or III.*
 HUG: *Story of Switzerland, (Story of Nations' Ser.)*
 ZSCHOKKE: *History of Switzerland to 1848.*
 PROBYN: *Italy, 1815-1878.*
 WRIGHTSON: *History of Modern Italy to 1850.*
 HUNT: *History of Italy. (School Series.)*
 MARIOTTI: *Italy, Past and Present, 2 vols.*

3. LIMITED PERIODS.

- VAN LAUN: *French Revolutionary Epoch, 2 vols.*
 MAURICE: *Revolutionary Movement of 1848-49.*
 COSTA DE BEAUREGARD: *Epilogue d'un règne. Milan, Novare et Oporto.*
Les Dernières Années du Charles Albert.
 FARINI: *The Roman State, 1815-1850. 4 vols.*
 MARTIN: *Daniel Manin and Venice in 1848-49.*

4. BIOGRAPHIES.

- MALLESON: *Life of Prince Metternich.*
 MAZADE: *Un Chancelier d'Ancien régime. Le règne diplomatique de Metternich.*
 DE RÉMUSAT: *Thiers.*
 TAYLOR: *Mazzini, a Memoir.*
 SEELEY: *Arndt.*
 SEELEY: *Life and Times of Stein.*
 LEGGE: *Pius IX, His Life to the Restoration in 1830.*
 BULWER: *Talleyrand, Vol. I of his "Historical Characters."*

5. MEMOIRS AND WORKS.

- GUIZOT: *Memoirs for the History of My Time, 3 vols.*
Memoirs of Prince Metternich.
Life and Writings of Joseph Mazzini.
Correspondence of Prince Talleyrand and Louis XVIII, 1814-1815.
Memoirs of Prince Talleyrand. 5 vols.

LECTURE I.

FROM THE FALL OF NAPOLEON TO THE USHER- ING IN OF THE ERA OF REACTION.

REFERENCES.

LODGE: *Modern Europe*, 586-657.

FYFFE: *Modern Europe*, Vol. I, 429-541; Vol. II, Chap. 1.

SEELBY: *History of Napoleon I.*

ROPES: *The First Napoleon.*

MALLESON: *Life of Metternich*, Chaps. 1-8.

GUIZOT: *General History of Civilization*, Chap. 14.

ADAMS: *Democracy and Monarchy in France*, Chaps. 1-4.

METTERNICH'S *Memoirs*, §§ 488, 552.

ROSE: *Continental History*, 1-162.

I. TO THE IMPRISONMENT AT ELBA.

General character of the French Revolution, marking a new historical period for Europe. Its double character as touching the internal condition of France, and as overthrowing the existing European system. The death blow to lingering feudalism; equity substituted for privilege; the national idea as opposed to the monarchical, feudal, ecclesiastical; that is, the class idea.

The Spanish uprising the first check in the progress of Napoleon. Changes in the spirit of France after 1806. Napoleon's imperialism. Berlin decrees; marriage with Maria Louise; expedition to Moscow. The last named the turning point in the Cæsarian policy of the Emperor. Napoleon, with Austria and Prussia (forced alliance), against Russia, Sweden and England. Effect of the retreat. Rising of the oppressed nations. Fred-eric William's appeal (1813). Alliance of Kalish between Russia and Prussia, and first war of liberation without Austria. Aus- tria's mediation for a general peace; failure because of Napoleon's rejection of Austria's demands (*Metternich's Memoirs*, §§ 186-187). Austria joins the allies, and the second war of liberation, fought around Leipsic, culminates in the "Battle of the Na- tions" and fall of Napoleon.

II. BEGINNINGS OF RESTORATION AND THE CONGRESS OF VIENNA.

The Allies march on Paris, and Napoleon is sent to Elba. With the fall of the Emperor the Bourbons (Louis XVIII) return to France, and the first peace of Paris is signed; the policy of restoration is begun by the reinstating of hereditary rulers, not legally completed until after the Congress of Vienna. Pius VII returned to Rome; Victor Emmanuel I (King of Sardinia) to Turin; Louis XVIII to Paris; Bernadotte promised the kingship of Sweden (Norway, united 1814, elects him as its king also); exiled dynasties restored in German and Italian states. September, 1814, meeting of the grand congress for the determination of unsettled questions and the establishment of peace upon a fixed basis. The work of the Congress of Vienna was a general continental gerrymander, which disregarded the rights of the people, the differences of race and religion; whose only standards were dynastic right, legitimacy and self-aggrandizement; but so successfully was this policy carried out that peace was established for forty years. The Final Act of the Congress was signed June 10th, 1815. A brilliant array of talent gathered at Vienna; the work to be done was important, the responsibility great; two emperors, four kings, many smaller princes; but the negotiating body is made up of the Allies (Austria, Prussia, Russia, England), with France and, at times, Spain, Portugal, Sweden. Quarrels and delays; differences regarding the division of vacant territory; confirmation of despotic restorations; disputes regarding Saxony, Poland, Rhenish territory, Alsace and Lorraine, Holland and Belgium, Sardinia. The chief work the restoration of Germany and Prussia. "An auction of nations, an orgy of kings." The reconstructed map of Europe (*Freeman's Historical Geography*, pl. 30).

III. THE HUNDRED DAYS, MARCH 1ST, 1815-JUNE 18TH, 1815.

During the sittings of the Congress, return of Napoleon to France; the magic of his name; his triumphal march to Paris. The unpopularity of the Bourbons sent the nation at

large to the side of their old leader. On March 13th, Napoleon is declared an outlaw by the Congress of Vienna. The Allies renew the military treaty, and activity takes the place of the temporary repose. Allies in arms. France, with Napoleon at its head, again the object of attack. England and Prussia face the emperor at Quatre Bras, Ligny, Waterloo. The Congress of Vienna shakes off its former leisurely procedure and shares the new activity; its final act is signed the week before Waterloo is fought. Napoleon at St. Helena. A new era now begins for Europe. Importance of the Congress of Vienna in the diplomatic history of Europe.

IV. THE HOLY ALLIANCE AND THE POLICY OF METTERNICH.

With the sending of Napoleon to St. Helena and the completion of the work of the Congress, a surface peace pervades Europe. "The period (1789-1814) which, from the beginning, had been full of energy, had become at last so intense and overwrought that the spring, so to speak, broke. . . . With the fall of Napoleon passed away the vehemence and violence of the revolutionary age. 'Take the sword away' was now the word, and repose and languor succeeded to restless activity."—*J. R. Seeley*. Outwardly the old conditions were restored, but below were the new ideas and principles, which were the fruit of the Revolution and the awakened spirit, which was the offspring of the national uprisings.

Frau von Krüdener and the Emperor of Russia. Character of the Holy Alliance (September 26th, 1815) and its relation to the policy of Metternich. The signers of the Alliance and the relations of England to it. The growing power of Metternich, the diplomatic Napoleon of Europe, from 1815 to 1848. The great powers in council the regulators of the affairs of Europe. Era of congresses in which Metternich was supreme. Analysis of his character and purposes. Forced repression of all liberal movements. General review of the results of this policy as applied to Spain, Italy and Germany. Congress of Aix-la-Chapelle the turning point in the constitutional history of Europe.

LECTURE II.

FRANCE AND THE REVOLUTION OF 1830.

REFERENCES.

LODGE: *Modern Europe*, 657-668.

FYFFE: *Modern Europe*, Vol. II, Chap. 2.

MARTIN: *History of France to the Present*, Vol. I!, Chaps. 20-25.

MÜLLER: *Political History of Recent Times*, pp. 90-143.

METTERNICH'S *Memoirs*, §§ 731, 749, 948, 953, 959, 980.

ADAMS: *Democracy and Monarchy in France*, Chap. 5.

Students' History of France, 650-680.

ROSE: *Continental History*, 163-172 ; 195-201.

I. RESTORATION AND BOURBON UNPOPULARITY.

A Bourbon once more a king by the "grace of God" (April 6th, 1814). White flag replaces the tri-color. Liberal concessions through the influence of Talleyrand. *Charte Constitutionnelle*. Return of the Émigrés and the introduction of more stubborn blood and narrow class interests. The privileges awarded to the Bourbon hangers-on destroyed the good results of Louis' Government. The Hundred Days but an episode for Louis XVIII, but they cost France dear. Results of the second peace of Paris. "After twenty-five years of victories the national territory found itself less extensive in certain directions than it had been a century before at the end of the reign of Louis XIV, and during that century the other powers had vastly increased their strength." Position of the king between two opposing political elements, the Ultras and the Constitutionalists—not parties but classes. Character of Louis and his relation to the times. The restoration the most satisfactory for the national needs at that time. Prosperity and stability desired. All Louis' reign a struggle between the old ante-Revolution and the new constitutional ideas. Effect of the second reign of Napoleon on the ultra-Bourbons—an era of reaction, massacres, executions. Ultras gain in strength after 1821 (assassination of Duke of Berry), under Count of Artois. This reaction seen in ministry

of Villèle. Death of Louis XVIII (1824) and accession of Count of Artois as Charles X.

II. GOVERNMENT OF ULTRAS AND PRIESTS, 1821-1830.

One continued era of reaction and royal blunders. Louis well meaning, but Charles X a prince who had learned nothing and forgotten nothing. Same true of the masses. Louis' last words, "Preserve the Charter," pass unheeded. Measures of 1825 through influence of Jesuits (convents, indemnification of *émigrés*, punishment of sacrilege). Growth of the Liberal party; secret societies. Fall of the Villèle ministry, 1827. Success of the Moderates in the ministry of Martignac, which was an attempt to conciliate parties, but it was "too liberal for the Royalists, too reactionary for the Liberals." Fall of Martignac. In the new ministry Charles X declares war upon the country. Polignac and no more concessions. Intense popular feeling against this "Capuchin Government." An outlet found in a war against Dey of Algiers. Successful, but the diversion fails of its effect. New elections, secret influence of the societies; *aide toi*. The new members in majority against Government. Unconstitutional measures now taken by Polignac and the King. Ordinances of St. Cloud (elections illegal, restriction of suffrage, censorship of press).

III. REVOLUTION OF 1830 AND AN ELECTIVE MONARCHY.

Publication of ordinances looked upon as an infringement of the Charta and French liberties. Influence of the press, Thiers. Paris' answer to the ordinances in the Three Days of July (27-29). Victory for the people, who establish a provisional government. General absence of plunder and bloodshed. Question of future government. Charles X withdraws the ordinances and offers to change his ministry, but the concession is too late. Paris has already declared for the Duke d' Orleans. "No more Bourbons." "The Constitution shall henceforth be a reality." Charles X abdicates. Character of the change of government; an elective royalty as opposed to royalty based on divine right. The reign of Louis Philippe a transition period to a republic.

IV. INFLUENCE OF REVOLUTION.

Most notably seen in Belgium. Its past history, and its racial, religious and economic peculiarities. Given to Austria by Treaty of Utrecht, lost to Austria by Congress of Vienna, and joined to Holland under House of Orange. Uneasiness under the Union. The Revolution of 1830 brings the excitement to a head. Rising of the Belgians. Settlement in London Conference, and election of Leopold of Saxe-Coburg as constitutional king. Territorial question.

In England the French Revolution gives the impetus to the Reform law of 1832. A fugitive king from Brunswick; a new Constitution in Hesse, in Saxony, Hanover; the foundations of the present Swiss Constitution strengthened.

LECTURE III.

ITALY AND THE AGITATION FOR UNITY.

REFERENCES.

LODGE: *Modern Europe*, 670-671.

FYFFE: *Modern Europe*, Vol. II, Chap. 3.

PROBYN: *Italy*, 1-85.

MÜLLER: *Political History*, 23-42; 129-133.

METTERNICH'S *Memoirs*, §§ 245, 246, 344, 478, 479, 500-517, 547, 990, 1002.

ROSE: *Continental History*, Chap. 25, and pp. 201-204.

I. ITALY TO 1815.

Peace of Campo Formio (1797). Two districts: (1) above Naples, governed by Eugène Beauharnais; (2) below Naples, first by Joseph Bonaparte and afterward by Murat. The good results were uniform laws, improved administration, schools, roads and bridges, etc.; the bad results: press silenced, powerful police, heavy taxation; but in general, one most important result, conception of unity for Italy. Congress of Vienna was for Italy merely a change of masters; the substitution of Austria and Metternich for Bonaparte; the land became once more a patch-

work of despotisms ; Neapolitan Bourbons restored to Naples and Sicily ; Papal authorities to States of the Church ; House of Hapsburg Lorraine to Tuscany ; House of Savoy (Victor Emmanuel I) to kingdom of Sardinia (including Piedmont), while Austria receives Lombardo-Venetian.

II. FROM CONGRESS OF VIENNA TO THE RISE OF YOUNG ITALY.

This is the period of revolution, abortive uprisings, the result of the fantastic and ultra-revolutionary Carbonari ; the reaction and the policy of the Holy Alliance, that is of Metternich, causes great discontent in Italy ; League of the Carbonari and the demand for constitutions ; the Spanish Constitution of 1812 meets with favor in Naples and Piedmont, and in 1820 Ferdinand I promulgates this ; such act contrary to intention of Metternich, who summons congress of monarchs at Troppau and Laibach ; monarchs consent to Austrian suppression of Neapolitan uprisings ; similar movement in Piedmont ; demand for constitution ; Emmanuel I resigns and this complicates matters ; Charles Felix is king, Charles Albert regent ; the latter, the constitutionalist, promises a constitution ; but the former, the reactionist, repudiates it ; thus in Naples and Piedmont the first hopes for free government are shattered ; reaction supreme and traveling backward, 1821-1831 ; toward the end of the decade appear gleams of light from other countries ; Greek Revolution and the battle of Navarino, 1827 ; French Revolution, 1830 ; the latter creates a tidal wave of sympathy ; movement of 1831.

III. WORK OF MAZZINI AND YOUNG ITALY.

Condition of Italy—"Of all European lands Italy is the one which has the greatest tendency to revolution."—*Metternich*. Dissatisfaction with the work of the Carbonari ; made no effort to rouse the Italian people to win their own freedom, but founded the hope of achieving national independence upon the aid of France ; general influence of secret organizations for political purposes ; Mazzini, 1805-1872, imprisoned as a suspect by the government, in prison frames plan for Young Italy ; Young Italy displaces the Carbonari. "It was the triumph of principles ; the

bare fact that in so short a time a handful of young men, themselves sprung from the people, unknown, without means, found themselves thus rapidly at the head of an association sufficiently powerful to concentrate against it the alarmed persecution of seven governments is, in itself, enough to show that the banner they raised was the banner of truth."—*Mazzini*. The principles of the Carbonari anarchistic; those of Young Italy socialistic; Mazzini compared to Ferdinand Lassalle; first expedition (1834) of Young Italy a failure; the principles still too radical, the people did not co-operate.

IV. AGITATION UNTIL 1848-9.

Three currents of agitation are working in Italy: First, the continuation of the old efforts, radical and revolutionary; uprisings, sporadic and abortive; such are held in check by the clerical and absolutist parties, supported by Austria and Metternich, and are marked by executions, imprisonments and revolts; old policy of revolution and repression. Second, agitation by literary methods, books, novels and poems. Third, rise of a new party for reform; leaders intelligent, and high-minded Italians, conservative, yet desirous of thorough reform; chief among these Massimo D'Azeglio; it is to this last movement that can be traced the beginnings of real hope for Italy; such hopes seem at this time far from realization; views of Metternich expressed in a few famous sentences: "Italian unity a dream;" "Italy itself is but a geographical expression;" "It is a waste of time to examine into the condition of Italian unity;" "Le Pape libéral n'est pas un être possible."

LECTURE IV.

GERMANY AND A HALF CENTURY OF POLITICAL
CONFUSION.

REFERENCES.

LODGE: *Modern Europe*, 668, 669.

FYFFE: *Modern Europe*, Vol. II, Chaps. 2, 5, 7.

BRYCE: *Holy Roman Empire*, Chaps. 20, 21, and Supplemental Chap.

SYBEL: *Founding of the German Empire*, Vol. I, Book I.

MAURICE: *Revolutionary Movement of 1848-49*, Chaps. 1, 4, to p. 96;
Chap. 5, p. 163 to end.

METTERNICH's *Memoirs*, §§ 304, 335, 353, 721.

MÜLLER: *Political History*, pp. 1-23, 122-127, 159-169.

ROSE: *Continental History*, Chaps. 24, 29.

I. BEFORE THE CONGRESS OF VIENNA.

A study of the past of Germany necessary to an understanding of her present condition. Influence of three factors: 1, race; 2, feudalism; 3, theory of the Holy Roman Empire. The vitality of this empire died with the fall of the Hohenstaufens (1250); the political importance ended with the Treaty of Westphalia (1648); the last remnant swept away in Napoleonic wars (1806). "The imperial throne found no man of the first order to fill it, and continued to stand rather because nobody appeared to overthrow it than because any good reason remained for it in the new order of things."—*Bryce*. Germany, at the opening of the century, a geographical expression; made up of nearly 300 independent States, without national spirit. In theory, a united body; in fact, two monarchies (Austria and Prussia) in habitual rivalry, with a few States of the second order (Saxony, Bavaria, etc.), and a host of third and fourth-rate independent principalities of no value to anyone but themselves. A Diet, of no political or administrative importance, discussing petty and frivolous matters; in theory, strength; in fact, the most deplorable weakness. Seen in relation to Napoleon. Confederation of the Rhine.

II. CONGRESS OF VIENNA TO CARLSBAD DECREES.

Work of the Congress in relation to the reconstitution of Germany. A federal league decided on. Instead of 300 States the number reduced to 39. Mediatization, that is, absorption of the rest. Attempt to construct a Fatherland on a basis of 39 independent, sovereign States, with no ties, national or economic, and each full of a sense of its own importance. Each was to have a constitution, with representation. This system, "a curious device for hindering national development, called the German Bund."—*Maurice*. The Diet not a parliament. Lack of centralization makes possible complete success of Metternich's policy. Steady increase in the under-currents of Liberalism. Many States grant constitutions, especially in South Germany; always a thorn in Metternich's side, but the act of the Congress never fully carried out. Prussia and Frederic William III join the reactionary party, though promising a constitution. Metternich's advice. Agitation issues from the Universities and Press, *i.e.*, professors, students and journalists. *Burschenschaft*. The Kotzebue murder and its effect. It destroyed the hope of a constitution and brought on the Carlsbad decrees.

III. RESULT OF THE CARLSBAD DECREES.

A crusade against liberty; a system of coercion. The measures adopted by the Diet at Frankfort led to modification of the Constitution of the Confederation. "The Carlsbad Conference struck the key-note of the policy of the Federal Diet during the three and thirty dreary years that lie between 1815 and the brief though bright awakening of 1848."—*Bryce*.

Under Frederic William III there was a growth in wealth extension of trade and commercial development. Foundation of the Custom's Union (Zollverein) a distinct step toward unity. Effect of the Revolution of 1830 and the struggle in Poland. These led to a break-away from the quietude of the reactionary policy, to an active desire for political freedom, but without developing real national spirit. Movement in Brunswick, Hesse, Saxony, Hanover (influence of England). But radical movements (Hambacher festival, Frankfort conspiracy) work for evil.

Reaction follows. The Diet classically repressive at this juncture ; nature of the repressions. Quotations from Metternich. A famous episode. Hanover ; the Salic law ; Ernest Augustus, Duke of Cumberland and the "Göttingen seven."

IV. FREDERIC WILLIAM IV (1840-1861) TO REVOLUTION OF 1848.

Liberalism on the increase ; Metternichism on the decline. Steady pressure of the constitutional spirit. Character of the new Prussian King. Conciliatory but not progressive. Influence of philosophical thinkers (Bauer, Strauss) ; union of the religious with the political. Attitude of the King toward a constitution. Speech of King. "No power on earth shall ever succeed in persuading me to exchange the natural relation between king and people for a conventional, constitutional one ; and neither now nor ever will I permit a written sheet like a second providence to press itself between our Lord God in Heaven and this land. He warned, even threatened, the assembly not to allow itself to be deluded by the desire for a so-called representation of the people. 'I and my house,' he said, in closing, 'will serve the Lord.'"—*Flathe*.

LECTURE V.

LOUIS PHILIPPE AND THE REVOLUTION OF 1848.

REFERENCES.

LODGE : *Modern Europe*, pp. 682-686.

FYFFE : *Modern Europe*, Vol. III, Chap. 1.

MARTIN : *History of France to the Present*, Vol. II, Chaps. 26, 27 ; Vol. III, Chaps. 1-11.

ADAMS : *Democracy and Monarchy in France*, Chaps. 6, 7.

MÜLLER : *Political History*, pp. 172-202.

Student's History of France, pp. 680-705.

ROSE : *Continental History*, Chap. 28.

I. THE JULY MONARCHY TO 1840.

Era of Louis Philippe a transition. Louis a *roi bourgeoise* an elective monarch. Sovereignty lay in the people, who placed

him on the throne, and who might also thrust him from it. Reign opens honorably. The charter of 1815 honestly adhered to. Freedom of the press. The parties: Orleanists (Bourgeoisie), Legitimists (Absolutists), Bonapartists (Popular), Republicans (Revolutionary Theorists), Doctrinaires (Guizot, Broglie). The discontent deeply seated; seen in the results of trial of ministers of Charles X; revolt at Lyons; Berry insurrections. The king saw only his own party divided into conservatives (Casimir Périer) and progressionists (Thiers, "The king reigns but does not govern"). The frequent change of ministry is significant. Ten changes, 1830-1840. Republican uprising and Fieschi plot lead to laws of September (repressive). Effect of these laws. Cabinet questions and differences. 1840, Ministry of Thiers, political affairs perilous. Return of Napoleon's body from St. Helena, intended to allay these fears, a national error. Popular feeling and Louis Napoleon. Fall of Thiers over the Eastern question. Character of Thiers.

II. MINISTRY OF GUIZOT TO REVOLUTION OF 1848.

Peace policy, olive branch held out to England. Peace broken by Spanish marriages. Guizot ministry was strong, the strongest possible, but it fell. Why? Parliamentary reform was demanded in France, similar to that in England in 1832. The people not content to stand aside and wait for majority in chambers. The revolutionary spirit was too alive. The people as a whole wanted a stable government—prosperity. This threw the question of the nature of the government into the hands of the Parisians. Paris was full of revolutionary spirits: Socialists, Communists, scoffers at marriage, religion and virtue. Thus the possibility of revolution of 1848 lay in two facts: (1) the people at large had not sufficient loyalty toward July monarchy to resist revolution; (2) Paris pervaded by a revolutionary mania, which swept all before it. Guizot's mistake was of overestimating the strength of the elements of order and stability, and underestimating the elements of discord, turbulence and anarchy. Over against this is to be placed Guizot's unbending conservatism, inflexibility, doctrinairism, notably seen in the

matter of the extension of the suffrage. Add to this the complaints of bribery, the press agitators and the universal dissatisfaction with the government. The struggle was between Paris and the government. Banquets had been held in the prominent cities of France for the purpose of stirring up rebellion. Monster banquet planned in Paris, February 22d, 1848. Prohibited by Guizot. Rising of the people. February revolution the victory in part of the Fourth Estate. Government shows itself lamentably weak.

III. THE REVOLUTION AND THE REPUBLIC.

Barricade fights ; to the poor, the ignorant, the illegitimate, the gamins of Paris, revolution was the pastime of the hour. Defection of the National Guard. Guizot resigns (Feb. 23d), and Louis Philippe abdicates in favor of his grandson, Count of Paris. Character of Louis Philippe. Paris in the hands of the mob, who, with the newspapers, named a provisional government. Discussion of the influence of the newspapers since 1818, libelous, incendiary, lawless. Chief members of the provisional government : Dupont de l'Eure, Lamartine, Ledru Rollin, Arago. To the surprise of the bourgeoisie, to the pain of the rest of France, a Republic—the second—was proclaimed and, what was more dangerous, universal suffrage. France not prepared for this ; character of her constitutional development. Louis Blanc at the head of the commission of laborers (*ministère du progrès*), *droit au travail*, the national workshops (*ateliers nationaux*). Failure of the workshops ; now claimed that they were not honestly managed by the government. Beginning of the reaction. France unwilling that a 20,000 Parisian mob should dictate to a 17,000,000 nation. The republic could not stand the four revolutions under the provisional government—February–May, 1848. Difficulties of this government. "No government ever struggled against greater difficulties with more courage and honesty."—*Martin*. New constitution proclaimed November 12th. Presidential election. Workingmen supported Cavaignac ; bourgeoisie, Louis Napoleon ; sketch of the latter's career. Chosen president by a large majority (5,327,345 to 1,879,238 votes).

LECTURE VI.

REVOLUTION OF 1848-9 THROUGHOUT EUROPE.

REFERENCES.

- FYFFE: *Modern Europe*, Vol. III, Chaps. 1, 2.
 LODGE: *Modern Europe*, 668-701.
 MALLESON: *Life of Metternich*, 9, 10.
 MAURICE: *Revolutionary Movement*, Chaps. 7-11.
 MÜLLER: *Political History*, 202-299.
 SYBEL: *Founding of the German Empire*, Vol. I, Books II, III.
 PROBYN: *Italy*, 85-192.
 ROSE: *Continental History*, Chap. 31.

I. WONDERFUL MARCH DAYS OF '48.

The distinguishing phases of the first half of the nineteenth century are: Growth of race and national interests as over against dynastic (Greece, Italy, Hungary and its dependencies, Schleswig-Holstein). Spread of the desire for liberal institutions and national unity, while the peace of Europe is maintained by policy of repression. Comparison of Revolutions of 1789, 1830, 1848. The February movement in France is followed by a shattering of thrones throughout Europe. Revolutions in the smaller States of Germany; the March Revolution in Vienna and the fall of Metternich (retires to England, returns 1852, dies 1859); Hungary now wins her independence; autonomy promised to Bohemia. The combined result of the French Revolution and this weakening of the Austrian power. (Keep in mind the fact that Austria is the mainstay of a vast system. She is the leading State in the German Confederation, by virtue of which her hand has lain heavily upon Germany; her control over the Lombardo-Venetian territories has led her to claim a right to interfere in the affairs of Italy; her hereditary right as House of Austria gave her power over Bohemia, Hungary with its dependencies, Croatia, Transylvania and Slavonia.) Therefore, each of these repressed territories was ready under the stimulus of the news from France to take advantage of the difficulties in which Austria was now placed.

The German movement at once springs into life. The March days in Berlin lead to concessions by Frederic William IV (1840-1861). Army sent away; the king assumes the character of German leader, and agrees to a national representative assembly (compare with old Federal Diet) and a constitution for Prussia. Hopes are bright in Germany. In Italy everything similarly bright. Lombardy rises and the Austrian army retires. Venice revolts, the republic of St. Mark's established under Daniel Manin. The spirit spreads. All lost to Austria beyond the Mincio. Italy waits for a leader. A double possibility; shall it be the new Pope, Pius IX, in the old imperial city, or the king of Sardinia in Turin? Results of the March days. Hungary free. Bohemia promised autonomy. Germany to have a representative parliament. Prussia a constitution. Italy on the verge of unity.

II. TURNING OF THE TIDE.

Two centers remain of the old despotism, the camp of Austria's army and the court of Russia. The chief causes of the reaction; race divisions in Hungary; political complications in Germany; lack of efficient leadership in Italy.

Italy. Failure of the struggle. Temporary success of the constitutional party, but there is no head. Entrance of Austrian army under Windischgrätz and Radetzky. Milan capitulates (Aug. 1848). Pius IX disappoints hopes of his leadership by refusing to declare war on Austria. Rossi and a liberal policy not satisfactory to radicals. Murder of Rossi, and flight of Pope to Gaeta. Rome in the hands of Revolutionists (Nov. 1848). Hopes turn to Piedmont (Turin). Victory at Goito, but final defeat at Novara, March 23d, 1849. Charles Albert abdicates. Accession of Victor Emmanuel II on battlefield. "Seldom has any sovereign ascended the throne in a darker hour than that in which Victor Emmanuel II ascended the throne of Piedmont."—*Probyn*. Fall of Bologna (May 20). Restoration of the Pope, through the aid of the French, who are thus supporting reaction abroad while overthrowing it at home—a curious anomaly. Last of all, Venice, after a glorious struggle,

surrendered, and Manin and six hundred associates went **into** exile (Aug. 28th, 1849).

Germany. The new representative parliament meets. Difficult questions which concern it; division of parties. **Lib**erals, Conservatives, Junkers. The Schleswig-Holstein question, first phase, with war between Prussia and Denmark. A truce and its consequences. The Frankfort parliament had delayed too long; the draft of the constitution by which Germany was to be a Federal State, under an hereditary emperor, is not drawn up till 1849, and then the King of Prussia refuses the imperial title. The end of the Frankfort parliament. The tide of reaction is rising again over Germany.

III. HUNGARY'S DEATH STRUGGLE.

The relation of the races in Hungary. Influence of the language and literature. Hungary's attitude toward her dependencies. Rising of the Serfs; dissatisfaction of the Croats. Appointment of Jellacic as *ban* of Croatia. This results in war between Croatia and Hungary, the former supported by the court at Vienna. Breach between Austria and Hungary. Kossuth, Hungarian Minister of Finance. The murder of Lamberg is the pretext for overthrowing Hungarian independence. Mob in Vienna, the city in the hands of the revolutionists, is reduced by army under Windischgrätz. A reform of the imperial government. Schwarzenberg, Minister, demands abdication of Ferdinand, the imbecile emperor. Francis Joseph, the present Emperor, ascends the throne. Hungary refuses to acknowledge him. War now inevitable. April, 1849, temporary success. Countermanifestoes. Schwarzenberg declares Hungary reduced to level of other provinces; Kossuth proclaims that "the House of Hapsburg is deprived of its dominions and banished from Hungary forever." The struggle is long and brave, but the intervention of Russia decides it. By the capitulation of Vilagos (August 13th, 1849), Hungary submits to Russian General Rüdeger. Independence and freedom lost; the reprisals frightful and bloody.

IV. GENERAL RESULTS.

"In Italy the friends of despotism could now look in every direction without seeing a vestige of freedom in all the land, save, indeed, in that little kingdom of Piedmont, where a young king—Victor Emmanuel II—was just mounting the throne."—*Probyn*. It was the tiny cloud in the West, but its growth was to be the growth and unity of Italy. Victor Emmanuel's watchword is "Hold fast to that which is gained; Italy must be free."

In Germany the supremacy of Austria and Prussia was assured. "By the middle of 1851 the Confederation was re-established on its old footing, with its old powerlessness for good, its old capacity for mischief, and, it may be added, its old willingness to use those capacities for the suppression of free institutions in the more progressive States."—*Bryce*.

"Crushed under an iron rule, exhausted by war, Hungary passed for some years into silence and almost despair. Every vestige of its old constitutional right was extinguished. Its territory was curtailed by the separation of Transylvania and Croatia; its administration handed over to Germans from Vienna. A conscription, enforced, not for the ends of military service, but as the surest means of breaking the national spirit, enrolled its youth in Austrian regiments, and banished them to the extremities of the empire. No darker period was known in the history of Hungary since the wars of the seventeenth century than that which followed the catastrophe of 1849."—*Fyffe*.

But the effects were not lost. Things which had been visions became realities. Political interest, new life was roused. The Revolution gave a vivid sense of unity to both Italy and Germany. It frightened governments, liberalized their policy, by showing how insecure were their foundations. It showed the people their weaknesses, the danger of race prejudice and the futility of the revolutionary and radical methods. It brought to the front as leaders of unity and liberalism men of greater diplomatic and administrative ability. Already are Bismarck, Cavour and Deák prominent in their respective places.

EXERCISES.

I.

1. Explain the character of the work which the Congress of Vienna performed.
2. What was the Triple Alliance? Explain its origin and the importance of the term "Holy" as applied to it.
3. What were the distinguishing features of Metternich's policy? Do you see any good results from it?

II.

1. What part did Talleyrand take in the Restoration? What can you say of his previous career?
2. What causes can you mention which led to so strong a growth of ultra-conservative feeling and increase of ultra-conservative power in France after 1815?
3. Discuss the influence of the Revolution of 1830 in Belgium, and explain why it had such important consequences in that country.

III.

1. Sketch the origin and work of the Carbonari and show wherein Young Italy was superior.
2. Discuss the character of Charles Albert.
3. Who was Massimo D'Azeglio, and what party in Italy did he represent?

IV.

1. Bryce says, "One thousand and six years after Leo the Pope had crowned the Frankish king, eighteen hundred and fifty-eight years after Cæsar had conquered at Pharsalia, the Holy Roman Empire came to its end." Explain.
2. What was the *Burschenschaft* and its influence?
3. Why was not the old Federal Diet satisfactory? Explain its organization.

V.

1. What was the character of the government of Louis Phillippe? Note the difficulties which surrounded it at home and abroad.
2. What was the phase of the Eastern Question which brought about the fall of Thiers in 1840?
3. Give what causes you can for the Revolution of 1848 in France. To whom did the victory belong?

VI.

1. Trace briefly the career of the Frankfort Parliament to show why it failed to perform the work expected of it.
2. What did Hungary demand of Austria? Explain the race jealousies which strengthened Austria's hand.
3. Trace briefly the reforming career of Pius IX. Why was it so short-lived?

SUBJECTS FOR ESSAYS.

1. The imperial pretensions of Napoleon.
The foreign policy of England, 1815-1830, as illustrated by the career of Canning.
3. The growth of the liberal movement in Germany.
4. An examination into the theory of the balance of power as applied in Europe during the eighteenth and nineteenth centuries.

[Series A]

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"The history of our entire nineteenth century is precisely the history of all the work which the Revolution did leave. The Revolution was a creating force even more than it was a destroying one; it was an inexhaustible source of fertile influences; it not only cleared the ground of the old society but it manifested all the elements of the new society. Truly we may call the Revolution the crisis of modern reconstruction."—*Frederic Harrison*.

"It seemed in 1850 as if despotism were triumphant, but appearances were deceitful. Siserà could not conquer, for the stars in their courses were fighting against him. The movement toward constitutional freedom and the independence of oppressed nationalities was a movement which had been gathering strength for more than two generations. For its remote sources we must look back to the middle of the eighteenth century, when English ideas of constitutional liberty were at length taken up and incorporated into the speculations of French philosophers, whose writings were widely read upon the continent."—*John Fiske*.

I. GENERAL AUTHORITIES.

- LODGE: *A History of Modern Europe*.
 MÜLLER: *A Political History of Recent Times*.
 FYFFE: *A History of Modern Europe*, 3 vols.
 DYER: *Modern Europe*, Vol. V.
 ROSE, J. H.: *A Century of Continental History*.

HISTORIES FOR EACH COUNTRY.

- MARTIN: *History of France*, 1789-1881. 3 vols.
 DURUY: *History of France*.
 ADAMS: *Democracy and Monarchy in France*.
 SYBEL: *Founding of the German Empire*. 3 vols. out.
 LEWIS: *History of Germany*.
 SIME: *History of Germany*.
 LEGER: *History of Austro-Hungary*.
 HUG: *Story of Switzerland*.
 PROBYN: *Italy*, 1815-1878.
 HUNT: *History of Italy* (School Series).
 RAMBAND: *History of Russia*, Vol. II or III.

EXERCISES

for each week will be found at the end of the Syllabus. Any persons attending the lectures are invited to send written answers; they should be addressed to Prof. C. M. Andrews, Bryn Mawr College, Bryn Mawr, Pa., and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. They will be returned, with comments, at the "Class," when further explanations on the general subject will be made. All are invited to the class whether they have sent exercises to the lecturer or not.

PART II.

LECTURE VII.

THE CRIMEAN WAR AND EUROPEAN POLITICAL THEORIES.

REFERENCES.

MÜLLER: *Political History*, 253-266.

FYFFE: *Modern Europe*, Vol. III, Chap. 3.

RAMBAUD: *History of Russia*, Vol. II, Chap. 14. 2-vol. edition.

" " " " Vol. III, Chaps. 4-8. 3-vol. edition.

MURDOCK: *Reconstruction of Europe*, Chaps. 3-8.

ROSE: *Continental History*, 347-354.

HAMLEY: *History of the War in the Crimea* (Events of our Time Series).

KINGLAKE: *Invasion of the Crimea*, note spec. Vol. I, Chaps. 2, 8, 13, 28.

I. CONDITION OF EUROPE AFTER 1848-49.

Results accomplished by previous struggle, as seen in the modification of the plan of 1815. Greece, Belgium, independent; Prussia, Bavaria, Switzerland and Piedmont better governed; elsewhere failure and disappointment. An Era of Peace throughout Europe, 1849-1853. England and the great Exhibition. Napoleon in France conforms to whatever will support his throne. Prussia and Germany quiet under the old system. Italy waiting and Piedmont taking a constitutional form. Thirty-five years since there had been war between the nations. It was the lull before an epoch of twenty years of almost continuous warfare. France lighted the torch; England, though anxious to prevent a conflagration, was obliged to maintain her political theories; Piedmont wished recognition as a power. Austria and Prussia feared the growth of Russia, while the latter power, intriguing and dissatisfied, with intense pride and boundless ambition, was outraged by the progress of events which led ultimately to war. The cause of the first international struggle since 1815 was the Eastern Question, the distrust of the powers for Russia and the determination to uphold the threatened integrity of Turkey.

II. PROGRESS OF THE ETERNAL EASTERN QUESTION TO 1850.

The immediate cause was one of the many phases in which the Eastern Question appears. Progress of that question. Turks in Europe since 1300. Height of their power, 1682. Since then this dark spot in Eastern Europe has been gradually growing smaller. Early relations with Russia since the time of Catherine II. Treaty of Kainardji, 1774, contains famous clause upon which Russia based her claim of a Protectorate over the Christians at the time of the Crimean War. "The Sublime Porte promises to protect constantly the Christian religion and its churches, and it also allows the ministers of the imperial court of Russia to make upon all occasions representations as well in favor of the new church at Constantinople (referring to another section) as on behalf of its officiating ministers, promising to take such representations into due consideration as being made by a confidential functionary of a neighboring and sincerely friendly power."—(*Creasy*, Hist. of Ottoman Turks, p. 412). From this time to 1850 the development of the relations between the countries has been in favor of Russia. Napoleon, Turkey and Russia in 1811, a lost opportunity. Treaty of Bucharest, 1812, and the retreat from Moscow, raised Russia's prestige in Europe. Navarino and the Greeks raised it still more to Turkey's loss. Treaty of Adrianople, 1829, placed Turkey almost in a state of dependence on Russia. Mehemet Ali took advantage of this weakness. Turko-Egyptian War, 1832-1840. Turkey, in a state of collapse, received the attention of the Powers (remember the Quadruple Alliance and the fall of Thiers). Treaty of the Straits, 1840, the first doctoring of the sick man, which gave Turkey thirteen years' peace.

III. PRETEXTS FOR WAR AND THE THEORY OF THE BALANCE OF POWER.

Cause for the revival of the Eastern Question. Louis Napoleon, anxious to be in touch with the growing religious fervor in France, made demands regarding the Sacred Places in the East, which affronted the Greek Church. Favoritism of the Sultan toward the Latin Church aggravated the matter, and

the Czar used it as a pretext. Pride in his position as autocrat, faith in the support of Austria (on account of Villagos) and Prussia (because of his intimate relations with Frederic William), injured feeling and strong religious sense led to the determination to cripple Turkey. The "sick man" interviews; relations with England and final claim of protectorate. England supported the theory of the "balance of power," as fearing Russian aggression, which endangered her Eastern Possessions. Balance-of-power theory considers Europe a brotherhood of Powers, who are bound to maintain the continental equilibrium and to prevent the aggrandizement of any strong power at the expense of a weaker. Notice Kinglake's three circumstances. When a wrong is being done against any state, great or small; when such wrong happens to be injurious to one of the five great Powers; when that Power is competent to wage war with fair hopes of success, then it is expected that such war will be undertaken.

Therefore, England demanded that the integrity of the Ottoman Empire should be maintained. France based her interference on other causes; offended pride and diplomatic policy and desire to play a great part before Europe.

IV. THE WAR IN THE CRIMEA AND ITS RESULTS.

The Czar's troops enter Wallachia and Moldavia (July 3, 1853). Attempts at diplomatic settlement, the Vienna note (Kinglake I, p. 501), the last peaceful action of the Powers. Accepted by Russia, amended by Turkey, rejected by Russia. After October 4, 1853, a state of war existed with the Porte. Sinope and the Danubian campaign increase the Western war fever. In March, 1854, Czar refusing to evacuate Danubian principalities, England and France ally with the Porte and declare war (March 28); Austria and Prussia side with the two Powers. Isolation of Russia. Czar practically at war with all Europe. Movement of troops from England and France to Malta, to Varna on the Black Sea. Retirement of Russia. A greater humiliation demanded. The Four Points, practically rejected by Russia, were followed by advance on Sebastopol,

her strongest fortress, most dangerous to Turkey. September 14, 1854, landing on the Crimea. September 20, battle of the Alma. Advance to southern portion of the peninsula. Balaklava, October 25; Inkerman, November 5. The dreadful winter of 1854-5; its effect upon Europe. Florence Nightingale. Death of Czar, March, 1855. Accession of Alexander II (1855-1881); the siege continues, and Sebastopol falls September 9, 1855. The fruitless war is brought to an end. Peace negotiations and the Treaty of Paris, 1856. Results of the war. For Russia "the imprudent policy of Nicholas had cancelled the work which two centuries of successful progress had accomplished."—*Rimbaud*. Turkey in a propped-up state of health. France and Napoleon III glorified. Piedmont a State. England, Austria and Prussia practically gain nothing, with the balance-of-power theory in bad repute and practically at an end in Europe.

LECTURE VIII.

CAVOUR AND VICTOR EMMANUEL. A UNITED ITALY.

REFERENCES.

- MÜLLER: *Political History*, 270-292, 357-360, 476-478, 593-599.
 FYFFE: *Modern Europe*, Vol. III, Chap. 4, 472-3.
 ROSE: *Continental History*, 327-346.
 MURDOCK: *Reconstruction of Europe*, Chaps. 9-13, 20; 274-5.
 PROBYN: *Italy*, 192-364.

I. GROWTH OF PIEDMONT.

From 1849 the history of Italy is the history of the house of Savoy. Return of Victor Emmanuel from the battlefield of Novara. "Through God's help Italy shall be freed." "I must preserve intact the institutions which my father has given. I must maintain firmly aloft the tri-colored flag, symbol of Italian

nationality, which has to-day been vanquished, but which will triumph some day. That triumph shall henceforth be the object of my efforts." Dangers of the situation, to preserve the constitution from Austria on the one side, and the radicals on the other. A new parliament, Massimo D'Azeglio at the head. Steady increase of the constitutional strength. Ecclesiastical difficulties, Siccardine laws. In 1852 D'Azeglio retired, and Cavour was called as prime minister. First great landmark in the latter's diplomatic career was Sardinia's share in the Crimean war. Cavour promised 15,000 men, not under certain eventualities as had Austria, but to co-operate at once with France and England. Causes and results of this movement. At treaty of Paris Sardinia was recognized as a free European State, with the moral support of the Powers. In the peninsula she was looked upon as the saviour of Italy.

II. AUSTRO-SARDINIAN WAR.

Now in a position to close accounts with Austria. Close relation with France; examination of Napoleon's attitude; not wholly disinterested. Meeting at Plombieres, July, 1858. The alliance and the sacrifices; (1) marriage of Clotilde to Prince Napoleon; (2) cession of Savoy and Nice to France (Plebiscite, see Adams' Democracy and Monarchy, Chap. 9). War was rapidly approaching; excitement and enthusiasm in Italy; overturning of absolutist thrones. Diplomatic controversies for four months between the Powers, England, Prussia, Russia. Finally Austria sent in her ultimatum; disarmament in three days, or war, a diplomatic blunder, pleasing to Cavour. April 19, 1859, Austria's military blunder. Union of the allies should have been prevented. Campaign in Northern Italy. Montebello, Palestro, Solferino, all in favor of the allies. Austria driven out of Lombardy. Italy about to be freed, from the Alps to the Adriatic. At this juncture Napoleon concluded an armistice at Villafranca, with Francis Joseph, July 8, 1859, followed by Zurich, November 10. Hopes of Venetians dashed to the ground. Causes of Napoleon's defection; the quadrilateral, fear of Prussia and the Pope; but much had been gained; Lombardy was free; attitude of Cavour and Victor Emmanuel.

III. AN INCOMPLETE UNITY.

Rome and Venice. Garibaldi and the expedition of the one thousand to Sicily. Planned by Mazzini. Sicily freed (May, 1860). Garibaldi crosses to the continent. Francis II flees from Naples. Free Italy fast closing around the Pope. He refuses any concessions and answers with excommunications. Entrance of the Italian army into the Papal States. Attitude of France, whose troops were supporting the Pope, latter limited to Rome and *Patrimonium Petri*. The Roman Question and the relation of France to it (importance for Franco-Prussian war). Italian unity making immense strides. Parliament at Turin, February 18, 1861, representing 22,000,000 Italian people. Serious problems to be faced. "There was the complete union and pacification of Sicily and Naples; the legislative and administrative assimilation of these and all the other newly-annexed provinces; the fusion into one of six or seven budgets; the formation of a single coinage; the suppression of custom houses and the rectification of tariffs; the regulation of the military status of the volunteers, and a deficit of 500,000,000 francs to be faced."—*Probyn*. Cavour died under the strain, May 31, 1861. In the period 1860–1870, besides these problems, two others, the freedom of Venice and Rome. Prominence of the Roman Question. Garibaldi's two attempts (1861 and 1866) "Rome or Death." Embarrassment of Victor Emmanuel. The first question settled by the Seven Weeks' War. Italy ignominiously defeated (as the ally of Prussia), but gains Venetia and the acknowledgment by all the governments of Europe of Victor Emmanuel as her king. Continuation of the dead-lock with the Pope. The Franco-Prussian War cuts the Gordian knot, and the Italian army enters Rome. Italy was free from Piedmont to the Adriatic, and from the Alps to the Straits of Messina.

IV. THE ITALIAN KINGDOM.

Italy as a kingdom, and the Italians as a nation. Settlement of the position of the Pope by the Law of Guarantees (1871). The Pope not a subject of the King of Italy; in eccle-

siastical functions absolutely free. Cementing of friendly relations abroad ; settlement of financial problems within. Death of Victor Emmanuel (1878), and accession of Humbert I. His character and policy and close relations with his people. Politics and parties ; the Irredentists and their radical schemes of annexation. The colonial policy on the Red Sea (Assab, Massowa, Abyssinia). The Triple Alliance and the influence of both upon the internal condition. Tendency away from France to the Central Powers. The financial problem ; fall of Crispi ; this problem the chief concern of the Rudini ministry. Renewal of the Triple Alliance.

LECTURE IX.

THE RISE AND FALL OF IMPERIALISM IN FRANCE.

REFERENCES.

- MÜLLER : *Political History*, 186-202, 329-332, 369-372, 388-394, 409-460, 468-476, 611-630.
 FYFFE : *Modern History*, Vol. III, Chap. 6.
 MARTIN : *History of France*, Vol. III, Chap. 11 to the end.
 MURDOCK : *Reconstruction of Europe*, Chaps. 22-30.
 DURUY : *History of France*, 649-677.
 ADAMS : *Democracy and Monarchy*, Chaps. 8-10.
 ROSE : *Continental History*, 250-285.

I. LOUIS NAPOLEON AND THE REPUBLIC—THE COUP D'ÉTAT.

A Bonaparte pretender at the head of a republic. He swore to remain faithful to the democratic republic. "My duty is clear. I will fulfill it as a man of honor. I shall regard as enemies of the country all those who endeavor to change by illegal means that which all France has established." Character of the legislative assembly. Louis Napoleon laid the foundations of empire, (1) by conciliating the Church (restoration of the Pope) ; (2) by conciliating the people, whom the assembly had alienated by repealing the law regarding universal suffrage ; (3) by con-

ciliating the army through largesses. President and assembly soon at war. Failure to obtain three-fourths majority to **change** the constitutional provision forbidding re-election after **four** years. Nothing left but an unlawful *coup de main*. This **great** political crime took place on the morning of Dec. 2, 1851. **The** assembly was charged with refusing universal suffrage, with **for-**bidding the people to elect their own head, with sedition **against** the government ; five generals, eleven deputies and sixty **prom-**inent men arrested, and the city in the hands of the army. **Dis-**graceful massacre. Louis Napoleon dictator. Constitution of 1852. A year's rule made up of decrees concerning the **army**, clergy and ostentatiously flattering the workman and laborer. Trips through the province. A famous saying, Oct. 7, 1852, "Some say that the Empire is War ; I say that the Empire is Peace ; for France desires peace, and when France is satisfied, the world is tranquil." Plebiscite based on insolence, fraud, terror, results 7,500,000 to 640,000 in favor of an empire.

II. EMPEROR NAPOLEON III.

Beginning of a reign which was to end in Sedan. Antagonistic views regarding the character of this reign. A dictatorial imperialism out of place in a western power in the nineteenth century. The Emperor's view of it. "The new reign inaugurated by you to-day, unlike many recorded in history, is not founded upon violence, conquest and stratagem. Will you not assist me to establish in this land, troubled by many revolutions, a stable form of government, founded upon religion, justice, probity and love of the suffering classes?" Napoleon III did give to France nineteen years of peace and prosperity. Three phases of his reign to be studied : (1) Foreign relations ; (2) internal policy : (3) injurious influences of both leading to a rapid collapse. A vigorous foreign policy necessary to sustain his government : (1) as a Napoleonic policy ; (2) to satisfy the popular love of glory ; (3) to overshadow the illegality of the *coup d' état* at home and abroad. Six campaigns in eighteen years. Crimea, Italy, China, Syria, Mexico, War of 1870-71. None, except the last, touched directly the internal interests of

France; all concerned the history of other countries. Foreign alliances shifting. Internal policy glittering, but not sound. Marriage, January, 1853; its consequences injurious as leading to extravagances and luxury and ecclesiastical influence. Reforms provided, public improvements most lavishly carried out. Beautifying and rebuilding of Paris. A new city, externally dazzling, but a heavy burden from a social and economic point of view. Orsini plot, 1858, complicated the relations with Italy, but probably beneficial to that cause in the end. The Italian war the culminating point in the reign. "The peace of Villafranca marks the brief pause soon to be followed by decadence and decay."—*Martin*. This peace was made June 8, 1859.

III. DOWNFALL OF NAPOLEONISM.

A steady growth of internal disintegration; much hypocrisy, much outward show. Extravagance and corruption deep-seated. Napoleon's administrative system managed by an inferior body of statesmen, his plebiscites largely under his own control, as seen in the case of Savoy and Nice. Ten years—1860–1870—put the army in a wretched state, with no generals of first rank. During this period necessary to divert public opinion with distant wars; China (added Cochin China); Syria, and finally the Mexican scheme. Co-operation of France, England and Spain to protect European interests in Mexico. Article 2 of treaty, "The high contracting parties engage not to exercise any influence in the affairs of Mexico of a nature to restrain the right of the Mexican nation to choose and to organize freely the form of their government." Breach of the alliance by Napoleon, who desired a Mexican monarchy, a Catholic empire to check the increase of the United States at the time of her internal struggle (1862). Withdrawal of England, war was undertaken by France. Maximilian (brother of Francis Joseph of Austria) as emperor (1863–4). The sad ending of a mad expedition. Withdrawal of the French troops and execution of Maximilian, June 19, 1867. Stability of the empire undermined in every direction at a time when war with Prussia was becoming inevitable.

IV. FRANCO-PRUSSIAN WAR. THE COMMUNE AND A REPUBLIC.

Causes leading to the Franco-Prussian war. Influence of Sadowa and Königgrätz. French pride and confidence incommensurate with her resources. The Spanish question. Leopold of Hohenzollern tendered the Spanish throne. He refuses. France pushed the matter dangerously further. "The King of Prussia to pledge that at no time in the future will he allow the name of any member of the Hohenzollern family to be used in connection with the Spanish throne." Prussia's curt answer meant war, July 19, 1870. Position of France, in almost complete isolation. Italy and the Roman question. Austria practically neutral. Russia in alliance with Prussia, and Bismarck could depend on the South German States. Disorganized military condition of France. Lack of efficient headship, order, discipline and supplies. Prussia's system almost perfect. Rapid mobilization of the German troops. Saarbrück, Weissenberg (Aug. 4), Wörth (Aug. 4-5), Forbach (Aug. 5). Command given to Marshal Bazaine. Battles before Metz, Aug. 14, 15, Borny, Vionville, Gravelotte. Capture of the Emperor and MacMahon's corps at Sedan (Sept. 1). End of the empire, birth of the republic (Sept. 4). Paris and the army of the Loire. The war in the provinces. Bazaine, Metz and the army of the Rhine (Oct. 29, 1870). Capitulation of Paris and establishment of republican government. Thiers President (Feb. 12, 1871). The new government at once attacked by the Parisian democracy. "The National Guard became the armed commune. It devolved upon the veterans of MacMahon and Bazaine to re-conquer Paris for the republic." It was the Commune of Paris vs. the Government at Versailles; much sincerity, much fanaticism and atrocious cruelty. May 28, 1871, closed their civil war. The republic born in the midst of warfare, fighting against itself for its existence, has now been a reality for twenty years. Chief questions which have arisen. Five years of uncertainty established the republic on a sound footing, 1876. MacMahon and Gambetta. Colonial policy and internal organization. Boulangerism and its overthrow. The present isolation of France.

LECTURE X.

AUSTRIA AND PRUSSIA. I.—THE STRUGGLE FOR THE HEGEMONY.

REFERENCES.

MÜLLER: *Political History*, 247-253, 272-3, 300-363.

FYFFE: *Modern Europe*, Vol. III, 114-156, 305-323, 341-387.

MURDOCK: *Reconstruction of Europe*, Chaps. 14-20.

BRUCE: *Holy Roman Empire*, Supplemental Chapter.

ROSE: *Continental History*, Chap. 36.

BEUST: *Memoirs*, Vol. I. Chaps. 8, 9, 22-31.

SYBEL: *Founding of the German Empire*, Vol. II, Book VII, Chap. 2 ; Vol. III, Book IX (all of both volumes valuable).

I. PRUSSIA'S LAST SUBMISSION.

Supremacy of Austria after 1849. Schwarzenberg and his policy of German interference. Represented old Germany and Metternich. "Prince Schwarzenberg had the greatest contempt for the human race, but he had not a profound knowledge of human nature, and that deficiency explains and excuses much that he did and much that he left undone."—*Beust*. The first era to 1852 marks the attempt to settle the question of an old and new Germany by political logic. After the failure of the Frankfort Parliament and the refusal by Frederic William of the imperial crown, the latter attempted to form a new Federal Union. Conference at Berlin and league of the three kingdoms, which represented in a measure the liberal tendency of the Frankfort Parliament; but the power of Austria was still great; the league of the four kingdoms represented her supremacy. The Hesse-Cassel difficulty nearly precipitated war, for the strain was great between Prussia and Austria; but the Prussia under Frederic William and Manteuffel was not the Prussia as she was fourteen years later under William and Bismarck. She yielded for the time the claim of leadership and endured the humiliation of Olmütz (November 29, 1850). This meant restoration of the Diet, war against Schleswig-Holstein and recognition of Austrian supremacy. For Prussia it was a blessing and a gain in the end.

II. A NEW REGIME AND A NEW ATTITUDE.

Austria's days of supremacy numbered, though her position from 1850-1859 never seemed stronger. Contrast between the internal development in Austria and Prussia during these years ; the one under theocratic influence, holding subjected to her Hungary and Lombardo-Venetia; the other, more liberally protestant, was growing in wealth and military strength. Definite change of attitude taken in 1857, when William, brother of the king, became regent. There was to be no second Olmütz. The Austro-Sardinian war gave Prussia her opportunity; she wins from it great moral prestige, for she practically held the balance of power (Sybel, Vol. II, 361-382). Her position very different after the Italian war than before. Note important steps in Prussia's progress. January 2, 1861, the regent succeeded to the throne as King William I. September 23, 1862, Bismarck was recalled from Russia to the Presidency of the Ministry. "No one suspected then that with that day a new era did in truth begin for Prussia and Germany, and so for Europe. For how many men knew anything of Bismarck's inward development? . . . [They saw in him only a] haughty young noble, who had formerly opposed the first steps toward a constitution, who had raised his voice at Erfurt against German Unity, who had defended the shameful policy of Olmütz, [who] had found in the Confederate Diet a retreat wholly suited to encourage his natural tendencies."—*Sybel*.

III. THE POLICY OF BLOOD AND IRON.

Gradually under the hands of Bismarck and Moltke the military system took on form. The test was to be of arms and diplomacy, not of sentiment and prestige. Diplomacy won the friendship of Russia. Austria jealous of Prussia's growing importance and independence of attitude. Their respective positions changing. Austria now proposed constitutional changes, and Prussia confidently rejected them (August, 1863). The crisis was precipitated by the opening of the Schleswig-Holstein question. The March Patent issued by Frederic VII

of Denmark was contrary to the London Protocol of 1852. It claimed Schleswig as integral part of Denmark and Holstein as tributary. Death of Frederic VII and accession of Christian IX. The latter ratified the March Patent, and all Germany was roused to the defense of the Schleswig-Holsteiners. This was Bismarck's opportunity. "From this time the history of Germany is the history of the profound and audacious statecraft and of the overmastering will of Bismarck; the nation, except through its valor on the battlefield, ceases to influence the shaping of its own fortunes. What the German people desired in 1864 was that Schleswig-Holstein should be attached, under a ruler of its own, to the German Federation as it then existed; what Bismarck intended was that Schleswig-Holstein itself, incorporated more or less directly with Prussia, should be made the means of the destruction of the existing Federal system and of the expulsion of Austria from Germany."—*Fyffe*.

IV. EXPULSION OF AUSTRIA.

Bismarck entangled Austria in the Danish war. Denmark misled by England's promise of support accepted the war; but England cannot go to war without allies, and the other signers of the London Protocol refused to co-operate (Prussia's diplomacy). Danes driven out of the provinces in a war which lasted January to August, 1864. A settlement is reached in the Treaty of Vienna, when Schleswig and Holstein were ceded to Prussia and Austria. At this juncture Bismarck showed his hand and proposed conditions which Austria could not accept. This rejection was followed by diplomatic attempts at settlement, but the crisis was at hand, with Bismarck bent on war. The disagreement became more serious. Bismarck secured Russia's friendship, Italy's co-operation (on account of Venice) and France's neutrality, a fatal decision for the Emperor. A plan now proposed in Diet for a constitution under Prussian leadership. Diet divided. Retaliation carried; mobilization of federal army against Prussia. This meant war. Prussia's secession and ultimatum to Hanover, Saxony and Hesse. "The

war which had been undertaken for the liberation of the duchies developed into a struggle for the leadership." The war in South Germany, Bohemia, Königgrätz, in the west. The struggle soon over. Peace of Prague, August 23, 1866. Its conditions. Austria withdrew from the German Confederation.

LECTURE XI.

AUSTRIA AND PRUSSIA. II.—RECONSTRUCTION.

REFERENCES :

- MÜLLER: *Political History*, 326-394; 460-468; 493-505; 587-593; 630-652.
 FYFFE: *Modern History*, Vol. III, Chap. 5.
 MURDOCK: *Reconstruction of Europe*, Chaps. 21, 22.
 ROSE: *Continental History*, Chaps. 37, 38.
 LEGER: *Austro-Hungary*, Chaps. 34-38.
 BEUST: *Memoirs*, Vol. I, Chaps. 32-38; Vol. II, Chaps. 1-36, and Introd., 43-70.

I. THE RESULTS OF THE SEVEN WEEKS' WAR.

The Seven Weeks' War marked a turning-point in the history of the reconstruction of Europe. By it each of the four central powers was affected, and the way prepared for the next important moves. Chief among the results were (1) the expulsion of Austria as a member of the German Confederation; (2) the raising of Prussia to the leadership and the formation of the North German Confederation; (3) the shattering of the schemes of Napoleon III, which marked the beginning of the end for French Empire, and (4) the cession of Venetia, which completed the unity of Northern Italy, from the Alps to the Adriatic. Thus we see that the process of reconstruction was well advanced in Italy, that it was incomplete in Germany, that it was to be just begun in Austria, and that in France, in 1866-67, it was not thought of (Murdock, pp. 286-7). Conditions of the peace of Prague regarding the lesser German States; Prussian annexations and the formation of a Federal Union, to embrace all States north of the Main.

II. FROM CONFEDERATION TO EMPIRE.

That which Frederic the Great had hoped for, and which Stein had tried to bring about, which Frederic William had attempted just before Olmütz, was now an accomplished fact. All the States between the North Sea and the Main united with Prussia as leader, forming the North German Confederation. Prussia herself one compact, undivided State, and the attainment of unity seemed very near. On the 24th of August, 1866, the old Confederate Diet, a mere rump, declared the old Confederation (established in 1815) dissolved. And the new Confederation, without Austria and the four South German States, took its place—the first fruit of the policy of blood and iron. Position of the South German States, not members of the Confederation, nor yet safely independent. They had completed separate alliances with Prussia of an offensive and defensive character, and yet refused to join the Confederation. What could they do; form a confederation among themselves or remain independent? either position had serious dangers. Neither logic nor political scheming was to settle the question; it was to be tested by war; and, when it came to that, German loyalty was not found wanting. Review of the causes which led to the war, and the attitude of Southern Germany. The States loyally stood by their treaty obligation. Napoleon III hoped to find a divided State; he fought against an already united Germany. Progress of the war. January 18, 1871, William I was saluted at Versailles as Emperor of Germany, Bavaria taking the initiative. The Southern States now came in, Würtemberg, Baden, Hesse and Bavaria. The first and last with important reservations. The new Constitution, based on that of the North German Confederation, adopted April 16, 1871; it is the Constitution of the German Empire.

III. THE DUAL MONARCHY.

While Germany was thus advancing, Austria had serious problems to settle. During the period of 1850–1860 her policy had been as of old. A beginning of reform had been made in 1860, of some importance, but largely neutralized by the char-

acter of the centralized government. Steady opposition of the various nationalities; 1863, Poland revolts. Further attempts at reform in 1865. Francis Deák, the statesman of Hungary. Result of the war of 1866. After Sadowa, Austria's position was pitiable; forced at last to an agreement with the East (for she had lost most of her Western political interests), she called a new minister from Germany—Beust, a foreigner and a Protestant. Question of the form of government. Centralization, duality or confederation? The second decided upon. No longer German supremacy, but German and Magyar supremacy. The charter of the Austro-Hungarian Empire promulgated. The wisdom of Deák in enforcing its acceptance by Hungary. Character of the constitution. Cisleithania and Transleithania. Relation of Hungary to her subject races. Beust's liberal measures; chief among them freedom from the Concordat, which allowed too great clerical and ultramontane influence. Discontent of the other nationalities, especially against the Hungarians. Tendency toward a recognition of these, and toward federation till 1878. Fundamental articles of Bohemia. Since 1878 tendency checked, and the dual monarchy again in control, with German and Magyar supremacy. This is the chief present question.

IV. THE GERMAN EMPIRE.

Geography of the Empire as compared with the old Confederation. Alsace and Lorraine. Growth of friendly relations with other powers, notably Austria. Internal organization and growth of political and social parties. Antagonism to the Papacy, followed by the May Laws (May, 1873), *Kulturkampf*, a general term for antagonism between the Roman Church and the civil authorities, lasting in Germany until 1880 (Baring-Gould, Germany, Present and Past, Vol. II, Chap. 13). Since then the Socialist questions have become prominent, as well as the relations with other countries. The alliance with Austria and the Triple Alliance. War clouds of 1887-8. Death of Emperor William, the reign of Frederic III, and accession of William II. Tendencies of present legislation and diplomacy.

LECTURE XII.

RUSSIA AND THE EASTERN QUESTION.

REFERENCES.

MÜLLER: *Political History*, 265-270, 396-400, 505-576.

FYFFE: *Modern Europe*, Vol. III, pp. 230-240 and Chap. 7.

RAMBAUD: *History of Russia*, Vol. II, Chap. 15, 2-vol. edition.

" " " " Vol. III, Chap. 9 to end, 3-vol. edition.

ROSE: *Continental History*, 355-372.

SAMUELSON: *Bulgaria Past and Present*, 65-107, 202-222.

I. FROM THE CRIMEAN WAR TO 1875.

Absurdities of the Treaty of Paris; attempt to heal a sick man, to Europeanize a Sultan and his dominions. By this treaty Russia lost the domination over the Black Sea, her protectorate over the Christians, her power of intermeddling and her great prestige. Turkey, on the other hand, was admitted as a European power, her integrity guaranteed, and she was given a chance to reform. The latter came in the form of three pages of promises, with the expected outcome, return to all the old abuses, extravagances, acts of maladministration and oppression. "Mr. Gladstone one day said to me (Beust), 'The Crimean War was a great mistake.' 'Not in the least,' I replied, 'but the Treaty of Paris was a great blunder.'" (Compare also Beust's *Memoirs* I, 143-145, 154, 155.) French in Syria (1860) to protect the Christians. The history of Turkey for fifteen years, the history of internal corruption, broken promises and revolts. Most serious of all that of Crete (1866). While thus it was evident that self-regenerated Turkey was a farce, Russia was seeking to win that which she had lost. She gradually extended her power to the southeast and east, toward Armenia and Herat, and finally, by revision of treaty of 1856, fortified Sebastopol and was once more dominant in the Black Sea. Her chief internal change, the emancipation of the serfs (1861).

II. TURKISH EXCESSES LEADING TO WAR OF 1877-8.

Continued distress among the Turkish dependencies; bad harvests and heavy taxes. General ill-feeling, notably among

the Danubian principalities. Showed itself first in Herzegovina (1875); spread rapidly fostered by Montenegro and Servia. Intervention of the three powers; the Andrassy note; the latter demanded reforms; unlimited religious freedom; abolition of tax-farming; improvement of industrial condition. All promised readily by the Sultan, but Mohammedan zeal was offended, resulting in the murder of the consuls at Salonika, May 6, 1876. This caused great indignation, diplomatic negotiation (the Berlin Memorandum) and a gathering of the fleets in Besika Bay. Collapse of Turkey, the Sultan deposed and a new ministry formed.

The Bulgarian atrocities agitated the whole Western world (1877). Mr. Gladstone's pamphlet; public opinion excited. Servia and Montenegro declare war. Attempts at peace fail. Turkey rejects the proposals of the Conference of Powers and the London Protocol, and Russia declares war in defense of the Christian population, as she expressly stated that she had no conquests in view.

III. WAR OF 1877-8 AND THE GROWTH OF NATIONALITIES.

The war lasted ten months, April 24-January 31. Steady advance of the Russians to the Turkish frontiers. A succession of early victories; heroic defense of Plevna; Osman Pasha for five months against the whole Russian army of occupation; fighting in Shipka Pass, in the Balkans; occupation of Sofia and Philippopolis, in neither of which had there been a Christian army for 400 years. Armistice of January 31, 1878; narrow escape from war with England, the time-honored doctor of Turkey. Treaty of San Stefano (Turkey and Russia) followed by Congress of Berlin, June 13, 1878. Most important since Vienna. Treaty signed July 13. The most important sections of the treaty related to the development of national independence. Mr. Gladstone had already said, "You want to place a barrier between the Russian and the Turk? There is no barrier like the breasts of free men." Roumania, Servia and Montenegro declared independent States. (The first became a kingdom in 1881, King Charles I; the second in 1882, King Milan I, who

has since abdicated.) Bosnia and Herzegovina placed under Austrian military administration. Disraeli and his arrangement for Bulgaria; latter divided into Eastern Roumelia under Ottoman supremacy and northern Bulgaria "an autonomous and tributary principality under the suzerainty of his Imperial Majesty the Sultan." A prince to be "freely elected by the population and confirmed by the Sublime Porte with the assent of the Powers." Turkey lost in all 7,000,000 of people and 600,000 square miles of territory.

IV. RECENT DIFFICULTIES. THE BULGARIAN QUESTION.

Not till 1881 were matters finally adjusted. In 1879 Bulgaria elected Prince Alexander of Battenberg as Prince of Bulgaria. Parties and politics. *Coup d'état* of 1881 and a new constitution. Death of Alexander II, Czar, injurious to Bulgarian independence. Growth of Russian interference. Economic and financial intrigues. Panslavism sought for the overthrow of the prince; troubles of the principality. Servia taking unfair advantage (urged from without), enters into war for territorial increase and is rather ignominiously beaten by Alexander and the Bulgarian army. Peace arranged by the Powers and Eastern Roumelia was attached to Bulgaria, destroying Disraeli's scheme (1885). Further intrigues and Russian interference. Abduction of Prince Alexander; his return and final abdication in September, 1886. In July, 1887, Prince Ferdinand of Saxe-Coburg, grandson of Louis Phillippe, was elected Prince. He has not yet received the needed sanction of the Powers. Illegality of his position makes his tenure doubtful, yet he is strong and persistent. Bulgaria has taken on decided national strength since 1881. Condition of the other States.

(*Note.*—In the nineteenth century dwindling Turkey has lost as follows: 1829, Greece; 1856, Wallachia and Moldavia; 1829–1878, Servia; 1878, Bulgaria, Montenegro, Bosnia, Herzegovina, Cyprus, the Dobrudscha and territory in Asia Minor; 1881, a great part of Thessaly and Epirus; 1878–1885, Eastern Roumelia; 1840–1885, practically Egypt and its dependencies,

EXERCISES.

VII.

1. Discuss the dispute about the Holy Places in the East and the causes of the Czar's anger thereat.
2. Define the theory of the Balance of Power, with a brief sketch of its history. (Encyc. Brit., "Balance of Power.")
3. What did Turkey gain by the Crimean war?

VIII.

1. Examine Cavour's policy, 1852-1859.
2. What was the Roman Question, and what was Garibaldi's connection with it?
3. Discuss briefly the position of the Pope as established by the Law of Guarantees.

IX.

1. What motives led Napoleon III to take part in the Crimean war; in the Austro-Sardinian War?
2. What opinion have you formed of the character of Napoleon III and his government?
3. The Commune of 1871: what were its objects and the results of its revolt?

X.

1. Explain the meaning of the humiliation at Olmütz.
2. Epitomize briefly the exact manner in which the Schleswig-Holstein question led to war between Prussia and Austria.
3. Discuss the conditions of the Treaty of Prague, and show that, historically, it marked a most vital change in the history of Austria.

XI.

1. What was the position of the South German States after 1866? Explain in this connection the North German Confederation.
2. What do you understand by the Dual Monarchy, and what is the nature of the present discontent?
3. Discuss the *Kulturkampf*.

XII.

1. The Treaty of Paris, 1856, was a blunder; why?
2. Analyze, as briefly and clearly as possible, the complications which preceded the war of 1877-8. The Turkish excesses; the diplomatic interference; the attitude of England and Russia.
3. What is the present state of the Eastern Question?

SUBJECTS FOR ESSAYS.

1. The internal causes for the downfall of the Second Empire.
2. Deák and Beust, Hungary since 1866.
3. Russia in the East.
4. The Diplomacy of Disraeli.

ADDITIONAL AUTHORITIES FOR PART II.

LIMITED PERIODS.

- MURDOCK: *Reconstruction of Europe*.
 MCCARTHY: *History of Our Own Times*.
 HAMLEY: *The War in the Crimea*. (Events of Our Time Series.)
 KINGLAKE: *The Invasion of the Crimea*, 6 vols.
 HOZIER: *Seven Weeks' War*.
 GALLENGA: *Invasion of Denmark*, 2 vols.
 HOOPER: *Sedan, The Downfall of the Second Empire*.
 ZELLER: *Pie IX et Victor Emmanuel, Histoire Contemporaine de l'Italie*, 1846-1876.
 ARRIVABENE: *Italy under Victor Emmanuel*, 2 vols.
 SAMUELSON: *Roumania, Past and Present*.
 SAMUELSON: *Bulgaria, Past and Present*.
 HUHN: *The Bulgarian Struggle for Independence*.
 HUHN: *The Kidnapping of Prince Alexander of Battenburg*.

BIOGRAPHIES.

- LOWE: *Bismarck*, 2 vols.
 HESEKIEL: *Life of Bismarck*.
 BUSCH: *Our Chancellor*, 2 vols.
 SMITH, G. BARNETT: *William I and the German Empire*.
 JERROLD: *Life of Napoleon the Third*, 4 vols.
 GODKIN: *Victor Emmanuel*.
 DICEY: *Victor Emmanuel*.

MAZADE: *Life of Cavour.*

TREITSCHKE: *Cavour.*

DICEY: *Cavour, a Memoir.*

BENT: *Life of Giuseppe Garibaldi.*

FORSTER: *Francis Deák, A Hungarian Statesman; preface by M. E. Grant Duff.*

NEUCASTLE: *Gambetta.*

NARJOUX: *Francesco Crispi, L'homme Public, l'homme privé.*

KING, EDWARD: *French Political Leaders.* (Containing, among others, notices of Victor Hugo, Thiers, Gambetta, Simon, MacMahon, Grévy, Favre, Ferry.)

TUTTLE, HERBERT: *German Political Leaders.* (Among others Bismarck, von Arnim, Windthorst, Delbrück, Bennigsen, Gneist, Treitschke, Sybel.)

MARRIOTT, J. A. R.: *The Makers of Modern Italy*, Victor Emmanuel, Cavour, Garibaldi.

LANE-POOLE: *Stratford de Radcliffe, 2 vols.*

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READINGS :

Poore, *Charters and Constitutions*, for early colonial charters.

Preston's *Documents*.

Hildreth, Vol. II, Chaps. 28, 29; Vol. III, Chap. 30.

McMaster, Vol. I, Chaps. 1, 2.

Bancroft, Vol. IV, Chaps. 30, 34, 36, 38, 42, 44, 48, 50, 52, in
"Epoch Third."

Curtis, Vol. I.

The Mecklenburg Resolutions.

The Declaration of Independence, in Preston.

Lalor, Article on *Taxation*.

Weeden, Vol. I, Chaps. 5, 7.

Fiske, *American Revolution*, Vol. I.

LECTURE II.

THE STATES FORM A CONFEDERATION WHICH FALLS TO PIECES
BECAUSE IT HAS NO TAXING POWER.—1776-1789. (I.)

The Uprising of the People—The Delegates Spread the News—Traitors or Patriots—War, Peace, Compromise—Men of Fame—The Democratic Revolution—A Few Men Rule—The Giants and the Pygmies—Theory *vs.* Practice—France, England, America—The National Idea—Franklin—The Leaders Young Men—The People not Enthusiastic—The Declaration and Slavery—The Declaration and the Articles—History and Precedent Ignored—Evil Consequences—Examination of the Articles—The Confederation and the States—Inherent Weakness—Enthusiasm Dies Away.

READINGS :

McMaster, Vol. I, Chaps. 2, 3, 4.

Bancroft, *History of the Constitution*, Vol. I, Book I, Chaps. 1, 2, 5, and Book II.

Curtis, *History of the Constitution*, Vol. I.

- The Federalist*, Nos. 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 31, 32, 33, 34, 35, 36.
 De Tocqueville, Vol. I, Chap. 8.
 Bryce, Vol. I, Chap. 3.
 Burgess, Vol. I, pp. 101-108.
 Von Holst, Vol. I, Chap. 1.
 Fiske, *American Revolution*, Vol. I.
 Fiske, *Civil Government*, Chap. 1, 6, 8.
 Thorpe, Part I, Chap. 5.
 Lalor, Article, *The Confederation*.
The Articles of Confederation, in Preston.

LECTURE III.

THE STATES FORM A CONFEDERATION WHICH FALLS TO PIECES
 BECAUSE IT HAS NO TAXING POWER.—1776-1789. (II.)

The Confederation Abroad—Jealousy of the States—Double Taxation Unpopular—The Hartford Convention—State of the Finances in 1776—The Congressional Lottery—Paper Money and Prices—Congress Migrates—Running Expenses not Met—An Appeal for Life—Financial Constitutions—The Boston Merchants Complain—The Planters Complain—England and France Learn the News—The Craze for Paper Money—Shay's Rebellion—New Jersey Refuses to Pay—Madison Advocates Reform—The Commission at Mount Vernon—Washington Declares for a More Perfect Union—The Pamphleteers—The Annapolis Convention—Hamilton and Madison—The Ordinance of 1787—Congress Sets the Day—Why the Confederation Failed.

READINGS:

Authorities as in previous lecture.

Bancroft, *History of the Constitution*, Vol. I, Book II.

LECTURE IV.

THE MAKING OF THE NATIONAL CONSTITUTION, MAY 10-SEPT.
17, 1787. (I.)

Virginia calls a Convention—The Men Chosen—Washington Presides—The Virginia Plan—The Plan Discussed—The New Jersey Plan—James Wilson—Hamilton's Ideas—Two Opposing Systems—The Connecticut Compromise—The Basis of Representation—New York Leaves the Convention.

READINGS :

Elliot's *Debates*, Vols. I, V.

Yates and Lansing's *Notes*.

Martin's *Genuine Information*, in Elliot.

Carson's *100th Anniversary of the Framing of the Constitution*.

McMaster and Stone's *Pennsylvania and the Federal Constitution*.

Jameson's *Constitutional Convention*, Chap. I.

Bancroft's *History of the Constitution*, Vol. II, Bk. III.

Curtis' *History of the Constitution*.

McMaster's *History of the People of the United States*, Vol. I, Chap. 4.

F. D. Stone's *Ordinance of 1787*.

Bowen's *Inauguration of Washington*, *The Century Magazine*, April, 1889.

Lalor, Articles on *Convention of 1787*, and on the *Constitution of the U. S. A.*

The Text of the Constitution, in Preston.

Burgess, Vol. I, Chap. II, pp. 98-108.

LECTURE V.

THE MAKING OF THE NATIONAL CONSTITUTION, MAY 10-
SEPT. 17, 1787. (II.)

Slavery—Taxation and Slavery—The Ordinance of 1787—
The Committee of Five—Revision of their Report—The Old

Economy vs. the New—The Division on Slavery—Debates on Slavery—A Compromise Possible—Franklin as Peacemaker—He tells a Story—His Speech—The Members Sign—The Constitution Completed and Sent to Congress—Whence came the Constitution?—How Much of it was New?—The National Constitution not struck off at a single Stroke—The Fruit of American Experience.

READINGS :

Authorities as in previous lecture.

For interpretation of the Constitution, see :

Burgess, Vol. I, Part II, Chap. 2, pp. 142-173, 184-252.

Vol. II, Part II, Chap. I, pp. 41-58.

Chap. VII, pp. 133-167.

Chap. III, pp. 216-247.

Chap. IV, pp. 248-263.

Chap. I, pp. 320-337.

Chap. V, pp. 356-366.

De Tocqueville, *Democracy in America*, Vol. I, Chap. 8.

Bryce, *American Commonwealth*, Vol. I, Part I.—*The National Government*.

LECTURE VI.

THE ADOPTION OF THE CONSTITUTION.

Opposition to the Constitution in Congress—Federalists and Anti-Federalists—The Constitution in Pennsylvania—The Sergeant-at-arms Defied—The Campaign in Pennsylvania—Delaware, Pennsylvania and New Jersey Ratify—The Constitution in Massachusetts—Character of the Convention—Parties in the Convention—Paul Revere Wins John Adams—Massachusetts Ratifies—The Constitution in New Hampshire—Maryland and South Carolina Ratify—Virginia and New York in Convention—Washington's Influence—*The Federalist*—Clinton Keeps Back the Vote—Hamilton Carries New York—The Constitution in North Carolina—The Constitution Becomes the Law of the

Land—Washington and Adams Elected—The Men Who Did It
 —Exit : the Confederation—Washington's Journey to New York
 —The Inauguration—The Ten Amendments—Nature of the
 Amendments—Principles and Practice—The Constitution the
 Work of Centuries.

READINGS:

Bancroft's *History of the Constitution*, Vol. II, Book IV.

Elliot's *Debates*, in loco, Vols. II, III, IV.

Curtis, *History of the Constitution*.

Hildreth, Vol. IV, Chap. I.

Schouler, Vol. I, Chap. I.

The Federalist, Nos. 45, 46, 47.

Ford's *Pamphlets*.

McMaster, Vol. I, Chap. V, VI.

Lalor, *Articles on Special Topics*.

Also as for Lecture IV.

EXERCISES.

LECTURE I.—Write a summary of the causes which led to the formation of constitutions of government in North America from 1606 to 1776.

LECTURE II.—Write a comparison between the Articles of Confederation and the Constitution of Massachusetts of 1780.

LECTURE III.—Show how the theory of the Confederation was not adapted to the institutions of America in 1781-87.

LECTURE IV.—Explain in detail, if you can, the meaning of the statement that the Constitution is based upon political experience, and is the outgrowth of it.

LECTURE V.—Write a summary of the three plans before the Convention and of the three compromises made in it.

LECTURE VI.—Explain how the Constitution became the "Supreme Law of the Land."

GENERAL BIBLIOGRAPHY.

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(The only publication containing a collection of its kind down to 1878.)
- PRESTON, H. W.—Documents Illustrating American History, 1606-1863. G. P. Putnam's Sons, New York, 1886. 1 vol. (Contains the most important documents and convenient notes.)
- HILDRETH, RICHARD.—History of the United States. 6 vols. (Federalist in tone; a classic work; covers the period 1492-1820.) Harper Bros., New York.
- BANCROFT, GEO.—History of the United States. 6 vols. Centenary Edition. Little, Brown & Co., Boston. (Democratic in tone; covers the period 1492-1783.)
- BANCROFT, GEO.—History of the Formation of the Constitution of the United States of America. 2 vols. D. Appleton & Co., New York.
- LALOR.—Cyclopædia of Political Science, Political Economy and United States History. 3 vols. Melbert B. Cary & Co., Chicago. (Essential for any student.)
- WEEDEN, WM. B.—Economic and Social History of New England, 1620-1789. 2 vols. Houghton, Mifflin & Co., New York.
- FISKE, JOHN.—American Revolution. 2 vols. Houghton, Mifflin & Co.
- MCMASTER, JOHN BACH.—The History of the People of the United States. 2 vols. D. Appleton & Co., New York, 1885.
- LODGE, HENRY CABOT.—Edition of *The Federalist*. G. P. Putnam's Sons, New York, 1889.
- DETOCQUEVILLE, ALEXIS.—Democracy in America. 2 vols. John Allyn, Boston, 1882.
- BRYCE, JAMES.—The American Commonwealth. 2 vols. Macmillan & Co., New York, 1888.
- VANHOLST, H.—Constitutional History of the United States. 5 vols. Callaghan & Co., Chicago, 1881. (Covers period 1787-1860.)
- JAMESON, JOHN A.—Constitutional Conventions. 1 vol. Fourth Edition. Callaghan & Co., Chicago, 1887.
- BURGESS, JOHN W.—Political Science and Constitutional Law. 2 vols. Ginn & Co., Boston, 1891.
- ELLIOT.—"Debates on the Federal Constitution," etc. 5 vols. J. B. Lippincott Co., Philadelphia, 1881. (The authority on the subject.)
- STONE, F. D.—The Ordinance of 1787; Pennsylvania Historical Society of Philadelphia. Published 1890.

- SCHOULER, JAMES.—History of the United States. 4 vols. W. H. Morrison, Washington, D.C. (Covers period 1787–1848.)
- FORD, P. L.—*Pamphlets* illustrating the period of the formation of the Constitution of the U. S. A.
- FISKE, JOHN.—Civil Government in the United States. 1 vol. Houghton, Mifflin & Co., New York, 1890.
- THORPE, FRANCIS N.—The Government of the People of the United States. 1 vol. Fifth Edition. Eldredge & Bro., Philadelphia, 1891.
- CURTIS.—The History of the Constitution of the United States. 2 vols.

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WHAT LITERATURE IS.

"Lectures on Poetry," by Sir Henry Doyle (Macmillans, 1869). "Prefatory Study on English Metrical Law," by Coventry Patmore (prefixed to his "Amelia," London, 1878). "On Poetic Interpretation of Nature," by J. C. Sharp (Hurd & Houghton, 1878). "Aspects of Poetry," by the same author (same publishers, 1882). "A Handbook of Poetics for Students of English Verse," by Francis B. Gummere (Ginn & Co., 1885).

Books which are and books which are not Literature. Prose and Poetry. The Forms of Poetry and their Reason. The Uses of Poetry.

Chaucer's "Canterbury Tales." His personal character. His modernism in contrast to the "universalism" of the Middle Ages. His relation to Italy and the Renaissance. His Scotch school. Scotch Poetry generally and its Celtic characteristics.

"Characteristics of English Poets from Chaucer to Shirley," by William Minto (Blackwoods, 1874). "Life of Chaucer," by A. W. Ward (Harpers' "English Men of Letters" series). "Chaucer's Prologue to the Canterbury Tales; The Knight's Tale; The Nonne Prestre's Tale," edited by R. Morris. "Chaucer's Prioress's Tale, etc.," edited by W. W. Skeat. "Chaucer's Tale of the Man of Lawe, etc.," edited by W. W. Skeat (all three published by Macmillans for the Clarendon Press).

LECTURE II.

RENAISSANCE AND REFORMATION IN ENGLISH LITERATURE.

End of abstraction, and of the fantastic of Chivalry. **Wife and Mistress.** Interest in the world and in human beings.

Spenser's Poetry. "The Poet of Poets." His vocabulary. (Euphemism.) His Puritanism. His verse. Elizabethan cadences and love of music. "The Fairy Queen." How far an allegory, a picture of the Elizabethan Age. Sidney's "Astrophel and Stella." Raleigh's prose. Apostrophe to Death.

Minto (*as above*) "A History of Elizabethan Literature," by George Saintsbury (Macmillans, 1887). "The Literature of the Age of Elizabeth," by E. P. Whipple (Boston, 1869). "Complete Works of Edmund Spenser," edited by R. Morris, with Memoir by J. W. Hales. (Macmillans' "Globe Edition," 1869). "The Select Works of Sir Philip Sidney" (Boston, Burnham, 186-).

LECTURE III.

GREEK ORIGIN OF THE DRAMA.

Its spread East and West. Its Essential Character; the "Unities." Why after 1589?

Shakespeare's literary methods (alleged plagiarisms). His four periods: Apprenticeship, Mastery, Distress, Calm. His range of knowledge of human nature and its limits. His merits and defects as a playwright. How far he shows himself. His two types of men. His later days. Johnson and lesser dramatists. Their quarrel with the Puritans. Earlier Alliance.

Minto and Saintsbury (*as above*). "Shakespeare, his Mind and Art," by Edward Dowden (Kegan Paul, Trench & Co., 1875). "A Shakespeare Primer," by the same author (Appletons, 187-). Separate plays, edited by W. J. Rolfe (Harpers).

LECTURE IV.

ANGLICANISM AND PURITANISM.

The Puritans the High Churchmen. Hooker's "Ecclesiastical Polity." Puritanism and Art. Poetic and Musical Sympathies.

Milton. Why beside Shakespeare? "An epic life." Love of the good and the beautiful equally, as in Plato, Schiller and Ruskin. His early poems. His controversial bitterness. His relation to public life. His prose, brocade. His two "Paradises." His Satan Falling. His blank verse and its variety. His "Samson Agonistes." His defect of reverence and spontaneity.

Bunyan's "Pilgrim." Suggested by his life. His Saxon vocabulary. A popular allegory.

"Milton," by Stopford A. Brooke (Appletons, 1879). "Milton," by Mark Pattison (Harpers' "English Men of Letters," 1880). "Poetical Works of John Milton," edited by David Masson (Macmillan's Library, Cabinet and Globe editions). "Milton's Poems," edited by R. C. Browne (Macmillans, for the Clarendon Press). "Life of Bunyan," by Venables, in "Great Writers" series (London, 1888).

LECTURE V.

ENGLISH LITERATURE BEFORE THE RESTORATION, OURS ALSO.

A new departure in the XVIIIth Century. Modern Prose. Steele, Addison and Swift. The "British Essayists" begin periodical literature. Their influence on social morals. "Sir Roger de Coverly." Rise of a public reading.

Pope and the "correct" school of poetry. Its gnomic worth. Decay of musical sense seen in verse. Neglect of Nature. "Poetical diction." Exceptions in Thomson, Collins, Dyer. Revolt in Cowper as a naturalist. His relation to Rousseau and his influence on English Art.

Burns and his unique popularity. His lyric gift.

"Manual of English Prose Literature," by William Minto. Revised Edition (Blackwoods, 1874). "English Literature in the Eighteenth Century," by T. S. Perry (Harpers, 1883). "A History of Eighteenth Century Literature" (1660-1780), by Edmund Gosse (Macmillans, 1889). "Johnson's Chief Lives of the Poets," with a Preface, by Matthew Arnold (Henry Holt & Co., 1878). Lives of Pope, by Leslie Stephen; Cowper, by Goldwin Smith; Gray, by John Morley; and of Burns, by Shairp, in "English Men of Letters" series (Harpers).

LECTURE VI.

THE FRENCH REVOLUTION IN LITERATURE.

Rousseau's influence. "Be natural."

Wordsworth and Coleridge. Theory of poetical language. Wordsworth's influence. Moral dignity. Life in nature. His defects. A bad critic of his own work. Byron, Shelley and Keats.

The new departure of 1830. Tennyson and Browning. Relation of Shelley to Browning. Purification by passion.

Lives of Wordsworth, by Myers; Byron, by Nichol; in "English Men of Letters" series (Harpers). Lives of Coleridge, by Hall Caine; Keats, by W. M. Rosetti; Shelley, by Sharp; and Browning, by Sharp, in the "Great Writers" series (London, Walter Scott, 1887). "Select Poems of Wordsworth," chosen and edited with Preface, by Matthew Arnold (Macmillans and Harpers, 1884). "Poetry of Byron," selected and arranged by Matthew Arnold (same publishers and date). "Wordsworth and Byron," in A. C. Swinburne's "Miscellanies" (Chatto & Windus, 1886). "The Poetical Works of Wordsworth," with Introduction, by John Morley (Macmillans, 1889). "Biographia Literaria, or Biographical Sketches of my Literary Life and Opinions," by S. T. Coleridge. Especially Chapters IV, XIV and XVII to XX. (Vol. III of "The Complete Works of Coleridge," Harpers, 1853). "Memoirs and Letters of Sara Coleridge," edited

by her Daughter (Harpers, 1874). "Literary Essays," by R. H. Hutton, includes papers on "Wordsworth and his Genius," "Shelley's Poetical Mysticism," "Mr. Browning," "Arthur Hugh Clough," "The Poetry of Matthew Arnold," and "Tennyson" (Macmillans and Porter & Coates, 1880). "Literary Studies," by Walter Bagehot, includes papers on "Hartley Coleridge," "Percy Bysshe Shelley," and "Wordsworth, Tennyson and Browning" (in "The Works of Walter Bagehot, with Memoirs, by R. H. Hutton," edited by Forrest Morgan. Vol. I. Hartford, 1889). "Studies in Literature," by Edward Dowden, includes papers on "The French Revolution and Literature," "The Transcendental Movement in Literature," "The Scientific Movement and Literature," "The Prose Works of Wordsworth," and "Mr. Tennyson and Mr. Browning" (Kegan Paul, Trench & Co., 1882). "Wordsworthiana: A Selection of Papers read to the Wordsworth Society," edited by Wm. Knight (Macmillans, 1889). "The Literary History of England in the End of the Eighteenth and the Beginning of the Nineteenth Century," by Margaret Oliphant (Macmillans, 1882). "Victorian Poets," by E. C. Stedman (Osgood & Co., 1876).

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- CURTIS.**—The History of the Constitution of the United States. 2 vols.
- BANCROFT, H. H.**—Histories of the Pacific Slope.

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De Tocqueville's, *Democracy in America.*

Bryce's, *American Commonwealth.*

Poore's, *Charters and Constitutions.*

May's, *Constitutional History of England.*

Stubb's, *Constitutional History of England.*

Preston's, *Documents.*

Special subjects in Lalor's *Cyclopædia.*

Thorpe's, *Government of the people of the United States.*

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Webster's *Bunker Hill Monument* orations, and his orations on *Adams and Jefferson*, for "New England Ideas of Government."

Weeden's, *Economic History of New England*, for town and country life, 1620-1790.

Adams', *History of New England Federalism*.

Bliss', *Colonial Times*, for pictures of New England home life, 1776-1790.

Longfellow's, *The New England Tragedies*, Whittier's, *Snow Bound*, Hawthorne's, *Scarlet Letter*, for descriptions of early manners and customs.

Preston's, *Documents*, for *Mayflower Compact*, various efforts toward union, 1643, 1754, 1765, 1774, 1776, 1781, 1789.

F. D. Stone's pamphlet on *The Ordinance of 1787*.

Life of Manasseh Cutter, for early Ohio History.

John Quincy Adams, in *American Statesmen Series*.

Hinsdale's, *Life of Garfield*.

Speeches by Douglas, Sumner, *et al.*, on *The Kansas-Nebraska Question*, in Johnston's, *American Orations*.

Palfrey's, *History of New England*.

LECTURE III.

THE STORY OF CIVIL GOVERNMENT IN PENNSYLVANIA.

The Grant in Virginia—The Penns and the Kings—Macaulay's Account of Penn—The Society of Friends in England—They Come to America—Penn's Ideas of Government—The Great Charter to Penn—The Grantor—The Grantee—The Conditions of the Grant—The Organization of Government on the Delaware—The Governor—The Assembly—The Courts—Legislation, 1672–1700—Comparison with New England Legislation—Schools—Churches—Prisons—Strangers—Taxation—The First "Frame of Government"—County Government—The Commissioners—The Sheriff—The Justice of the Peace—The Prothonotary—The Jurors—The Treasurer—The County Attorney—The General Assembly and the Counties—The Constitution of 1776—The Constitution of 1834—The Constitution of 1873–74—Industrial Growth of Pennsylvania—Philadelphia—Its Government—The Pennsylvania Idea of Government Founded on the Township—Ohio Adopts Pennsylvania Criminal Legislation in 1803—Influence of Pennsylvania in the West—The Middle Zone of States—Pennsylvania in National History—Franklin—Morris—Wilson—McKean—Gallatin—Rush—Jackson—Buchanan—Stevens—Stanton—Randall—Pennsylvania and the Constitution of the United States—The Convention of 1787—Relation of the Constitution to the Declaration of Independence—The Organization of Government in the Commonwealth—The Place of Pennsylvania in American Politics and Government.

READ OR CONSULT :

The Duke of York's, *Book of Laws*.

Watson's, *Annals*.

Franklin's Life, by E. E. Hale; and by McMaster.

Gallatin's Life.

Jackson's Life, *American Statesmen Series*.

Constitution of Pennsylvania in Poore's, *Charters and Constitutions*.

McKean, Morris, Rush, Wilson, in Hildreth's, *History of the United States*, and in McMaster's, *History of the People of the United States*.

Consult Lalor's *Cyclopædia of American History* freely for specific subjects.

Consult contemporaneous newspapers freely ; also histories of towns.

LECTURE IV.

THE OLD AND THE NEW VIRGINIA.

The First Settlers—The Origin of Plantations—The Parish—The Planter—His Relations with England—Plantation Life—The Great Rivers of Virginia—Original Domain of Virginia—The Introduction of Slavery, 1619—Civil Affairs, 1609-1676—Bacon, the Rebel—Bacon, the Patriot—Royal Governors—The Burgesses—Tobacco—Education—European Influences in Virginia—The Augustan Age—Washington—Jefferson—Madison—Randolph—Henry—Mason—The State takes up Civil Government in 1776—Virginia and Maryland Dispute about the Potomac River—Trade and Commerce in 1776-86—Virginia brings about the Philadelphia Convention of 1787—The Virginia Delegates—The Virginia Plan Submitted—Its Enemies—Its Triumph—The Action of the Richmond Convention of 1788—John Marshall—James Monroe—Virginia Presidents—The Virginia Resolutions of 1798—The Constitution of 1776—Of 1830—Of 1850—Of 1870—The New Virginia—Slave Labor *vs.* Free Labor—Climate and Soil—Repudiation and Railroads—West Virginia, 1863—The Story of the Border States—The Capital State of the Confederacy—"On to Richmond"—Lincoln at Richmond—The First Virginia Cession, 1784-88—The Second Virginia Cession, 1796—The Third Virginia Cession, 1863—The Northern Peninsula—The Prophecy of the Declaration of Independence—The Invasion of Capital—Speculation Begins—The Future of Virginia in American Politics and Government.

READ OR CONSULT :

Bancroft's, *History of the United States*, for the Colonial History of Virginia; also Graham's; Bacon's Rebellion, article in the *Century Magazine*, by Edward Eggleston. July, 1890.

Washington, Jefferson, Madison, Henry, Marshall, Monroe, in *American Statesmen Series*; Kentucky and Virginia Resolutions in Preston's, *Documents*.

Virginia Topics in Lalor's, *Cyclopædia*, and in *Life of Lincoln*, by Nicolay and Hay.

Bancroft's, *History of the Constitution of the United States*, also, McMaster, Vol. I, Chapters I, II and III.

Lodge's, *English Colonies in America*.

Adams', *History of the United States*, 1804-20.

LECTURE V.

THE MAKING OF THE WEST, I.

The West in 1609—In 1643—In 1763—In 1776—In 1783—National Boundaries—How Established—State Land Cessions: New York, Massachusetts, Connecticut, South Carolina, North Carolina, Georgia—The Indian Tribes East of the Mississippi, 1609-1825—The Louisiana Purchase—The Dream of Napoleon—Jefferson advocates the Purchase—The Constitutional Question Involved—Federalists and Republicans on the Amendment—The Louisiana Country—Difficulties in Florida—Jackson's Policy—Monroe's Policy—The Purchase of Florida—The Spaniards in Mexico—The Revolution of 1820—Of 1836—Of 1844—Southern Planters Invade Texas—Freedom *v.* Slavery in Texas—Causes of the Mexican War—"Masterly Inactivity"—The Scramble for Texas—Whig Views—Democratic Views—Foreign Views—Texan Views—Mexican Views—Presidential Views—The Conquest of Mexico Planned and Executed—The Ordinance of 1787—The Compromise of 1820—Slavery demands more Room—Five New Slave States Proposed—The Free-Soilers—The Abolitionists—The Constitutional Party—The Slavocrats—Speeches in Congress—California in 1840—Americans Invade

California—The Acquisition of California—The Compromise of 1850—California Demands Admission—The Discovery of Gold—How a State is made—The California Constitution of 1850—New England Ideas in California—Virginia Ideas in California—The Oregon Question—Discovery, Occupation, Treaty, Organization, Admission—The Constitution of Oregon, 1857—The Oregon Question in Congress—National Politics in 1857—Kansas and Nebraska—John Brown—The Meeting of Ideas in Kansas—The Constitutional Idea—The Squatter Sovereignty Idea—The Anti-Slavery Idea—The National Idea—Douglass and Lincoln debate these Ideas—Lincoln in 1857—The West Won and the War about Slavery Begun, 1857—The Gadsden Purchase of 1853—Its Purport—The Political Situation in 1857.

READ OR CONSULT:

Donaldson's, *Public Domain*.

Roosevelt's, *Winning of the West*.

Benton's, *Life, in American Statesmen Series*.

Johnston's, *American Orations*, for speeches in Congress on subjects connected with the making of the West.

Articles on *California*, in the *Century Magazine* (Nov.), 1890-1891.

Lincoln-Douglass *Debates*.

Van Holst's, *Political History of the United States*, for special topics; this history presents the German view of American politics.

Census of 1880, volume on *Population*.

Grant's, *Memoirs*.

Greeley's, *American Conflict*, Vol. I.

Draper's, *Civil War*.

LECTURE VI.

THE MAKING OF THE WEST, II.

The Dred Scott Case—How Slavery Became a Political Question in the United States—Debate in the Constitutional

Convention of 1787 on Slavery—The Great Compromise—Effect of Slavery on National Growth, North and South—Relative Increase of Population—Representation in Congress—California Breaks the "Balance of Power"—The Westward Course of Ideas—New England Ideas, Virginia Ideas—Examination of State Constitutions from Massachusetts to Oregon—From Virginia to Texas—The Inevitable Conflict—The Leaders of Opinion in 1850: Webster, Clay, Calhoun, Benton, Weed—Their Successors: Sumner, Lincoln, Stephens, Davis, Chase, Douglass, Greeley, Phillips—Review of Causes Leading to the Secession of the South in 1860—Industrial, Political, Social, Climatic—Formation of the Confederacy of 1861—The Mississippi River Closed—The Fate of Slavery Becomes the Fate of the Union—Slavery Protected by two Constitutions at one Time: The National Constitution of 1787, and the Confederate Constitution of 1861—The Struggle for Nationality—Lincoln Issues the Emancipation Proclamation, 1863—Collapse of the Confederacy—Acquisition of Alaska, 1867—"Seward's Folly"—Abolition of Slavery, 1865—Settlement by Reconstruction—The New Constitutions—The Period of Reconstruction, 1865-76—The National Boundary Settled in 1872—The New North, The New South, and "the Great West"—Organization of Territories West of the Mississippi, 1850-54—The Constitution of Nevada—The Pacific Railroads—Migration to the West—Incentives to Settle There: Homesteads, Cheap Lands—The Public Domain—Its Survey—Its Disposition of Lands—Railroads and the Development of the West—Western Cities—Western Farms and Ranches—Western Mines—Western Mortgages—The Valley of the Mississippi Determines the Fate of the United States—The Northwest—Influence of Eastern Ideas There—Education in the West—Public Buildings—The Settlement of the West as a Phase of American History—Comparison between the Making of the "East" and the Making of the "West"—The Dramatic Character of American History—Washington, the Man of the East—Lincoln, the Man of the West—The West has the Keeping of the Nation in its Hands—The Making of the West is the Triumph of Representative Government in America.

READ OR CONSULT :

Webster, Clay, Benton, in *American Statesmen Series*.

Pollard's' *Lost Cause*.

Stephen's, *Constitutional View of the War between the States*.

Constitutions of Western States, in Poore.

Consult newspapers freely.

Dred Scott Case in U. S. Reports. 19 Howard; Tyler's Life of Taney.

Authorities as in previous lecture.

Schouler's, *History of the United States*, 1783-1847.

Johnston's *American Politics*, 1789-1890.

Wilson's, *Rise and Fall of the Slave Power in America*.

Williams's, *Negro Race*.

[Series A]

UNIVERSITY EXTENSION LECTURES
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No. 7.

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GENERAL DIRECTIONS.

The lectures will begin promptly at 8 o'clock, and will last one hour. After the lecture those not wishing to remain for the subsequent meeting of the "class" will be given an opportunity to withdraw. The meeting of the class will last from half to three-quarters of an hour. During this period the students are earnestly invited to make known any difficulties that they have met with in their work, or any matters that they have not fully understood, and to ask any questions pertinent to the subject about which they wish explanations. At the same time the lecturer will take occasion to explain such matters as appear by the exercises not to have been properly grasped by the students.

Those who work the exercises are requested to send their papers by mail each week to the lecturer at the University of Pennsylvania, so that he may receive them at least *forty-eight hours* before the subsequent lecture, when they will be returned to the students. For substantial progress in the subject, working the exercises is essential.

Each student should be provided at the lectures with a note-book and pencil and a table of logarithms. Any five- or six-place table will answer. For those not already provided with a table, any one of the following is recommended: Newcomb's, Loomis', Jones', Wentworth's or Wells'. All of these are six-place tables, except Newcomb's, which is five-place. While a text-book of trigonometry is not essential, it will relieve the student to a great extent of the necessity of taking notes. The references throughout the syllabus are to Crawley's *Elements of Trigonometry*, which is recommended if the student wishes to use a text-book. Those wishing to pursue the subject of mechanics further than is done in the lectures, will find Todhunter's *Mechanics for Beginners* a suitable text-book.

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SYLLABUS OF A COURSE IN MATHEMATICS WITH APPLICATIONS TO MECHANICS.

The subjects taken up in this course are :

(1) Logarithms, their theory and use. (2) Trigonometry. (3) An introduction to Elementary Mechanics, principally those parts to which an application of trigonometry can be made.

A knowledge of the principles of plane geometry and of algebra, sufficient for the solution of quadratic equations, is a sufficient preparation for the course.

I.

APPLICATION OF LOGARITHMS.

The application of logarithms and the method of using the tables will be explained first ; the theory will be given subsequently.

The use of logarithms is to abbreviate the arithmetical operations of multiplication, division, involution and evolution. To every number belongs another number, called its logarithm. A table of logarithms gives the logarithm corresponding to every number (up to a certain limit), and conversely the number corresponding to every logarithm. The relation between a number and its logarithm is such that in using them we apply the following rules :

(1) To multiply two or more numbers together their corresponding logarithms are added.

(2) To divide one number by another the logarithm of the divisor is subtracted from that of the dividend.

(3) To raise a number to any power the logarithm of the number is multiplied by the exponent of the power.

(4) To extract any root of a number the logarithm of the number is divided by the index of the root.

That is, in performing a computation by logarithms, we first find from the tables the logarithms of the numbers involved; then apply the proper one of the above rules, thus getting the logarithm of the result; and finally, look in the tables for the number corresponding to this last logarithm.

Every logarithm consists of an integer (which, however, may be zero) and a decimal fraction, the integral part of the logarithm is called the *characteristic*. The decimal part is called the *mantissa*. The tables give only the *mantissa*. The mantissa is always positive.

To determine the characteristic of the logarithm of a given number we make use of the following:

RULE.—The characteristic of the logarithm of a number partly or wholly integral is one less than the number of figures before the decimal point. When the number is wholly decimal, the characteristic is negative and one greater than the number of ciphers between the point and the first significant figure.

As negative characteristics are inconvenient in practice, we avoid their use by adding 10 to the characteristic when it is negative, and then writing — 10 after the logarithm.

Thus:

$$\log 173.29 = 2.238774.$$

$$\log .00512 = \bar{3}.709270 = 7.709270 - 10.$$

The above methods will be fully exemplified in the lecture.

THEORY OF LOGARITHMS.

A logarithm is an exponent. The logarithms used in computation are the exponents of 10, which would give the corresponding number.

Thus: $\log 173.29 = 2.238774$ means $173.29 = 10^{2.238774}$,
 $\log 59.26 = 1.772762$ means $59.26 = 10^{1.772762}$, etc.

We may then write

$$\begin{aligned} 173.29 \times 59.26 &= 10^{2.238774} \times 10^{1.779782} \\ &= 10^{4.018556} \quad (\text{by algebra.}) \end{aligned}$$

Hence, 4.011536 is the logarithm of the result.

$$\text{Again: } (173.29)^8 = (10^{2.238774})^8 = 10^{18.110192}.$$

Hence, 6.716322 is the logarithm of the result. It can be seen from this how our rules for the use of logarithms are derived.

For a more complete exposition of this subject the student is referred to the chapters on exponents and logarithms in any text-book of algebra.

EXERCISES.

Compute by logarithms the values of the following :

$$(1) \frac{7389.41}{(41.647)^2}; \quad (2) \frac{\sqrt{29.6523} \times 500}{\sqrt[3]{675461}};$$

$$(3) \frac{.074621 \times (.9632)^8}{\sqrt[3]{.065142} \times 1.96211}.$$

- (4) Compute the circumference and area of a circle whose radius is 539.21 feet.
- (5) A solid bar of steel, 7 feet $8\frac{1}{2}$ inches long and $4\frac{3}{4}$ inches in diameter, weighs how much, if 1 cubic inch of steel weighs 4.6 ounces? Give result in pounds.
- (6) \$1,216.00 is put out at interest at 6 per cent.; compounded annually, what will be the amount at the end of 12 years? What will be the amount if compounded semi-annually?
- (7) What is meant by the characteristic of a logarithm? By the mantissa? How is the characteristic determined?
- (8) Explain the reason for the rule for determining the characteristic of an integral number.

II.

ADDITIONAL FACTS IN THE APPLICATION OF LOGARITHMS.

Logarithmic computation can often be much abbreviated by using the *arithmetical complement* of the logarithm of a number, called briefly the *co-logarithm* of the number. This quantity is the result obtained by subtracting the logarithm from 0 (performed practically by subtracting the logarithm from 10.000000—10). *Adding the co-logarithm of a number always accomplishes the same result as subtracting the logarithm.*

ADDITIONAL THEORY.

The reason for the above statement may be shown as follows: Let a and b be two numbers whose logarithms are m and n respectively;

$$\therefore \log \left(\frac{a}{b} \right) = m - n; \quad (1)$$

$$\text{but} \quad \frac{a}{b} = a \times \left(\frac{1}{b} \right);$$

$$\therefore \log \left(\frac{a}{b} \right) = m + \log \left(\frac{1}{b} \right). \quad (2)$$

Comparing (1) and (2) we see:

$$\log \left(\frac{1}{b} \right) = -n;$$

$$\text{but } \log \left(\frac{1}{b} \right) = \log 1 - \log b = 0 - \log b \quad (\text{because } 1 = 10^0*)$$

$$= \text{co-log } b, \quad \text{by definition.}$$

$$\text{Hence,} \quad + \text{co-log } b = -n;$$

that is, adding *co-log* b is the same thing as subtracting *log* b .

A *system* of logarithms is a complete set of logarithms of all numbers. Every system of logarithms has a *base*. The *base* is the number of which the logarithms are the exponents. The base of the logarithms in common use (called common logarithms) is 10. Any other number might be taken as the base of a system, but 10 is by far

* See chapter on Theory of Exponents in any text-book of algebra.

the most convenient number for the purpose, because (1) we can always tell by inspection between what two powers of 10 any given number lies, and hence the characteristic of its logarithm—thus we have the rule in Lecture I—(2) by moving the decimal point in a number to the right or left we simply multiply or divide it by some power of 10, and hence increase or diminish its logarithm by some integer, leaving the mantissa unchanged. The mantissa is, therefore, independent of the position of the point and depends only on the sequence of figures in the corresponding number.

In every system of logarithms, $\log 1 = 0$; because $n^0 = 1^*$, whatever value n may have.

There is one other important system of logarithms besides the common system, called Napierian, natural or hyperbolic logarithms. This system is important theoretically, but of no value for purposes of computation. The base of Napierian system is represented by e , and is an important quantity in higher mathematics.

$$e = 1 + \frac{1}{1} + \frac{1}{1.2} + \frac{1}{1.2.3} + \text{etc.} \dots = 2.718281828. \dots$$

The logarithms of one system are all the same multiple of the logarithms of any other system. Thus, the logarithms of the common system are all equal to the corresponding Napierian logarithms $\times .43429448. \dots$. This number is called the *modulus* of the common system. Logarithms of different systems are distinguished by writing the base of the system as a subscript. Thus, $\log_{10} 13$ means the common logarithm; $\log_e 13$ means the Napierian logarithm, etc. The modulus of the common system $= \frac{1}{\log_e 10}$.

The student wishing to pursue this subject further should consult the chapter on Logarithms and Series in any text-book of algebra.

* See chapter on Theory of Exponents in any text-book of algebra.

EXERCISES.

Compute the value of the following:

$$(1) \frac{(36.4793)^{\frac{1}{3}} \times \sqrt{(.38961)^8}}{6.7154 \times (.59)^{\frac{1}{3}}}$$

$$(2) \frac{62.389 \times \sqrt{\frac{4.7863}{7.9138}} \div .05867}{(1.58741)^0 \times \frac{1}{2}(728.642)^{\frac{1}{2}}}$$

- (3) A railroad curve, which forms $\frac{1}{4}$ of a complete circle, is 729.38 feet long. What is the radius?
- (4) A man having a piece of sheet metal 15 inches \times 14 inches wishes to cut from it circles 3 inches in diameter. What is the greatest number he can cut? If the sheet weighs 5 pounds in the beginning, what weight of metal will be wasted?
- (5) What is a logarithm?
- (6) What is the base of a system of logarithms?
- (7) Explain the theory of the use of co-logarithms.
- (8) If 8 is taken as the base of the system, what are the logarithms of 1, 2, 4, 8, 16, 32, 64, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{64}$, $\frac{1}{2}$?
- (9) Explain why the mantissa of a common logarithm is not changed by altering the position of the decimal point in the corresponding number.

III.

MEASUREMENT OF ANGLES.

Angles or arcs are measured in two ways: (a) By degrees ($^{\circ}$), minutes ($'$), and seconds ($''$); (b) by the *circular* notation. A degree is $\frac{1}{90}$ of a right angle, a minute is $\frac{1}{60}$ of a degree, and a second is $\frac{1}{60}$ of a minute. The unit angle or arc in the circular notation, called a *radian*, is the angle subtended by an arc equal in length to the radius, r ; or, it may be defined as the angle subtended by a unit arc upon a circle of unit radius. Since a complete circum-

ference contains a radius $2\pi^*$ times, the measure of a complete circumference in the circular notation $= 2\pi$, that of a semi-circumference $= \pi$, that of a quadrant or right angle $= \frac{\pi}{2}$, etc. Therefore, in comparing the two systems of notation with each other, we may write:

$$360^\circ = 2\pi, 180^\circ = \pi, 90^\circ = \frac{\pi}{2}, 45^\circ = \frac{\pi}{4}, \text{ etc.}$$

In general, if we wish to compare the two modes of expressing the same angle we make use of the proportion:

$$\frac{\text{Number of degrees in any angle or arc}}{\text{Circular measure of the angle or arc}} = \frac{180^\circ}{\pi}.$$

Or, if n represent the number of degrees and l the circular measure,

$$\frac{n}{l} = \frac{180}{\pi}.$$

By means of this equation, when we know the value of an angle in one notation we can always find its value in the other.

THE TRIGONOMETRIC FUNCTIONS.

The methods of trigonometry are based upon what are called the *trigonometric functions* of angles. These functions are six in number for every angle; they are called the *sine* (*sin*), *cosine* (*cos*), *tangent* (*tan*), *cotangent* (*cot*), *secant* (*sec*), and *cosecant* (*csc* or *cosec*). For angles less than 90° , these functions are defined by means of a right triangle. If A represent one of the acute angles of any right triangle, we have:

$\sin A$	=	ratio of opposite side to hypotenuse.
$\cos A$	=	" adjacent " " "
$\tan A$	=	" opposite " " adjacent side.
$\cot A$	=	" adjacent " " opposite "
$\sec A$	=	" hypotenuse " adjacent side.
$\csc A$	=	" " " opposite "

* π here, as always, represents the number $3.14159 \dots$, the ratio of the circumference of a circle to its diameter.

Or, if a represents the side opposite A , b the other side and c the hypotenuse, we have:

$$\sin A = \frac{a}{c}, \tan A = \frac{a}{b}, \sec A = \frac{c}{b};$$

$$\cos A = \frac{b}{c}, \cot A = \frac{b}{a}, \csc A = \frac{c}{a}.$$

If B represent the other acute angle of the same right triangle, it appears by examining a figure that

$$\sin B = \cos A, \tan B = \cot A, \cos B = \sin A, \text{ etc.}$$

That is, any function of an angle equals the *co-function* of its *complement*.

Besides the six functions just given, there are two others, the *versedsine* (*vers*) and *co-versedsine* (*co-vers*) of less frequent occurrence. They are defined thus:

$$\text{vers } A = 1 - \cos A, \text{ co-vers } A = 1 - \sin A.$$

It is easily seen that these functions are simple numbers which depend for their values upon the magnitude of the angle, and upon nothing else. Angles can therefore be recognized and distinguished from one another as readily by the values of their trigonometric functions as by their degree or circular measures. The values of the functions of every angle are given in tables accompanying the tables of logarithms. The functions of the angles 30° , 60° and 45° are of such frequent occurrence that they should be memorized. They are:

$$\sin 30^\circ = \frac{1}{2} = \cos 60^\circ,$$

$$\cos 30^\circ = \frac{1}{2}\sqrt{3} = \sin 60^\circ,$$

$$\tan 30^\circ = \frac{1}{\sqrt{3}} = \cot 60^\circ,$$

$$\cot 30^\circ = \sqrt{3} = \tan 60^\circ,$$

$$\sec 30^\circ = \frac{2}{\sqrt{3}} = \csc 60^\circ,$$

$$\csc 30^\circ = 2 = \sec 60^\circ;$$

$$\sin 45^\circ = \frac{1}{\sqrt{2}} = \cos 45^\circ,$$

$$\tan 45^\circ = 1 = \cot 45^\circ,$$

$$\sec 45^\circ = \sqrt{2} = \csc 45^\circ.$$

[See Trigonometry, Arts. 1-17, 21 and 22.]



II

EXERCISES.

- (1) Express $\frac{1}{3}\pi$, $\frac{2}{3}\pi$, $\frac{1}{2}\pi$, $\frac{1}{4}\pi$, $\frac{5}{12}\pi$, in degrees.
- (2) Express 135° , 150° , $22\frac{1}{2}^\circ$, 120° , 75° , in the circular notation.
- (3) Find the number of degrees in the unit angle of the circular notation.
- (4) Give the definitions of the trigonometric functions.
- (5) In a right triangle, $a = 3$, $b = 4$, $c = 5$. Write the values of all eight trigonometric functions of both A and B .
- (6) The shadow of a tower in the sunlight is observed to be 100 feet long, and at the same time the shadow of a lamp-post 9 feet high is observed to be $3\sqrt{3}$ feet long. Find the height of the tower and the angle of elevation of the sun.
- (7) Derive the numerical values of the trigonometric functions of 30° and 60° .
- (8) Why is it that $\sin 45^\circ = \cos 45^\circ$, $\tan 45^\circ = \cot 45^\circ$, etc.?
- (9) What function of 53° has the same value as $\cot 37^\circ$?

IV.

SOLUTION OF RIGHT TRIANGLES.

By the "solution of a triangle" is meant the calculation of the unknown sides and angles from those that are known. Any triangle can be solved if three parts are known, one of them at least being a side. In a right triangle two parts must be known, of which one must be a side. It is customary always to letter a right triangle ABC , putting C at the right angle; and to represent the lengths of the sides opposite the angles A , B and C by a , b and c respectively. Using this notation the following formulæ are sufficient to solve all right triangles:

$$A + B = 90$$

$$\sin A = \cos B = \frac{a}{c}$$

$$\cos A = \sin B = \frac{b}{c}$$

$$\tan A = \cot B = \frac{a}{b}$$

$$\cot A = \tan B = \frac{b}{a}.$$

To illustrate the process of solution, examples and problems will be worked on the blackboard during the lecture. In this connection the use of the trigonometric tables will be explained.

[See Trigonometry, Chap. IV.]

COMPOSITION AND RESOLUTION OF FORCES.

In mechanics it is customary to represent forces by straight lines, drawing the lines in the same relative directions as the forces, and giving them lengths proportional respectively to the magnitudes of the forces. Problems involving forces can thus be reduced to problems involving straight lines, to which the ordinary methods of geometry and trigonometry can be applied.

The following definition and theorems are taken from Todhunter's *Mechanics for Beginners*, Chap II :

"A force which is equivalent in effect to two or more forces is called their *resultant*; and these forces are called *components* of the resultant.

"When two forces act on a particle in the same direction their resultant is equal to their sum, and acts in the same direction.

"When two forces act on a particle in opposite directions their resultant is equal to their difference, and acts in the direction of the greater force.

"If two forces acting on a particle be represented in magnitude and direction by straight lines drawn from a point, and a parallelogram be constructed having these straight lines as adjacent sides, then the resultant of the two forces is represented in magnitude and direction by that diagonal of the parallelogram which passes through the point."

The above process is called *composition* of forces. The converse is called *resolution* of forces, where a single force is resolved into two others, called its *resolved parts* or (as above) components.

A force may be resolved into two components in an indefinite number of ways.

If P and Q represent two forces, acting at right angles to each other, and R their resultant, we have :

$$R^2 = P^2 + Q^2;$$

and if a be the angle between P and R :

$$\sin a = \frac{Q}{R}; \cos a = \frac{P}{R}; \tan a = \frac{Q}{P}, \text{ etc.}$$

If a force R be decomposed in two directions at right angles to each other, one direction making an angle a with the direction of R , we have :

$$P = R \cos a; Q = R \sin a.$$

Examples will be worked in which these principles are employed.

The cases in which the component forces are not at right angles must be deferred until the solution of oblique triangles is taken up.

EXERCISES.

- (1) What is meant by the "solution of a triangle?" How many parts must be given in any triangle? In a right triangle?
- (2) Why must at least one of the given parts be a side?
- (3) $A = 37^\circ 19'$, $c = 621$; solve the triangle.
- (4) $a = 61.792$, $c = 75.516$; solve the triangle.
- (5) A man stands 150 feet from the base of a building and finds the angle of elevation of its top to be $31^\circ 12'$. If the man's eye is 5 feet 6 inches from the ground, how high is the building?
- (6) A man stands at a point A on the bank AB of a straight river and observes that the line joining A to a post C on the opposite bank makes with AB an

angle of 30° . He then goes 400 yards along the bank to B and finds that BC makes with BA an angle of 60° ; find the breadth of the river.

- (7) A canal boat moving parallel to the shore, at a distance of 30 feet from it, requires a force of 200 pounds to move it at a certain velocity. If the tow-line is 120 feet long, what must be the pull on it?
- (8) A cord 7 feet long is fastened to two pegs, situated in the same horizontal line, 5 feet apart. A weight of 12 pounds is then fastened to a point of the cord 3 feet from one end. Find the tension in the two parts of the cord.

V.

THE INCLINED PLANE.

(a) *Without Friction.*

Let W represent the weight of a body resting on a plane inclined at an angle α to the horizon, let N represent the pressure it exerts against the plane (called the *normal force*), and P the force with which it tends to slide down; then

$$N = W \cos \alpha \qquad P = W \sin \alpha.$$

(b) *With Friction.*

The *coefficient of friction* is defined in Todhunter's *Mechanics for Beginners*, p. 167, as follows: "Let K denote the force perpendicular to the surfaces in contact by which two bodies are pressed together; and let F denote the extreme friction; that is, let F be equal to the force parallel to the surfaces in contact which is *just* sufficient to move one body along the other; then the ratio of F to K is called the *coefficient of friction*." It has been proved by experiment that the coefficient of friction is constant so long as we keep to the same pair of substances.

If f represent the coefficient of friction between the

body and plane in the case under consideration, the force of friction

$$F = fN,$$

the tendency of the body to slide down is now

$$P - fN,$$

and the least force necessary to push it up is

$$P + fN.$$

The force of friction always acts opposite to any force tending to move the body.

The above principles will be illustrated by problems worked on the blackboard.

[See Todhunter's *Mechanics for Beginners*, Chap. XV, and Arts. 258 and 259.]

TRIGONOMETRIC FORMULÆ.

$$\sin A = \frac{1}{\csc A}, \quad \tan A = \frac{1}{\cot A}, \quad \cos A = \frac{1}{\sec A},$$

$$\sin^2 A + \cos^2 A = 1,$$

$$\sec^2 A = 1 + \tan^2 A,$$

$$\csc^2 A = 1 + \cot^2 A,$$

$$\tan A = \frac{\sin A}{\cos A}, \quad \cot A = \frac{\cos A}{\sin A}.$$

To show the truth of these formulæ we have only to substitute for the trigonometric functions in each one their values as defined in Lecture III.

$$\text{Thus: } \sin A = \frac{1}{\csc A} \text{ is true, because } \frac{a}{c} = \frac{1}{\frac{c}{a}};$$

$$\sin^2 A + \cos^2 A = 1 \text{ is true, because } \frac{a^2}{c^2} + \frac{b^2}{c^2} = \frac{a^2 + b^2}{c^2} = 1,$$

since in every right triangle $a^2 + b^2 = c^2$.

In the same manner all can be proved.

These formulæ are useful in transforming trigonometric expressions; and when one trigonometric function of an angle is given, in finding the values of the others. Examples will be solved illustrating these uses.

[See Trigonometry, Arts. 18, 19 and 23.]

EXERCISES.

- (1) A man is rolling a 400-pound barrel up a plane inclined at 20° . The force he exerts must exceed what?
- (2) If a plane is inclined at an angle of 30° , find the forces along the plane, and normal to it, in the case of a body weighing 100 pounds which rests on the plane. (Do not use logarithms in this example.)
- (3) If the body in Example 2 is just on the point of sliding down, what will the coefficient of friction be?
- (4) Prove the formulæ $\tan^2 A + 1 = \sec^2 A$,
 $\cot^2 A + 1 = \csc^2 A$

and $\tan A = \frac{\sin A}{\cos A}$.

- (5) $\sin A = \frac{3}{4}$. Find all the trigonometric functions of A .
 (Do not reduce the radicals.)
- (6) $\tan A = \frac{m}{n}$. Find all the trigonometric functions of A .
- (7) Prove the formula $\tan A + \cot A = \frac{\sec^2 A + \csc^2 A}{\sec A \csc A}$.
- (8) A body weighing 500 pounds is placed on a plane inclined at an angle of 30° , $f = \frac{1}{5}$, what will the body do? What, if a force of 50 pounds is tending to push the body up the plane? What, if the last force is 200 pounds? What, if 350 pounds?

VI.

TRIGONOMETRIC FUNCTIONS OF ANGLES $> 90^\circ$.

The quantity infinity (∞) in mathematics.

Trigonometric functions of 0° and 90° .

$$\begin{array}{ll} \sin 0^\circ = \cos 90^\circ = 0, & \cos 0^\circ = \sin 90^\circ = 1, \\ \tan 0^\circ = \cot 90^\circ = 0, & \cot 0^\circ = \tan 90^\circ = \infty, \\ \sec 0^\circ = \csc 90^\circ = 1, & \csc 0^\circ = \sec 90^\circ = \infty. \end{array}$$

An angle between 0° and 90° is said to be in the first

quadrant, one between 90° and 180° in the second quadrant, one between 180° and 270° in the third quadrant, and one between 270° and 360° in the fourth quadrant.

To define the trigonometric functions of an angle $> 90^\circ$, draw a circle and place the angle so that its vertex is in coincidence with the center of the circle and one of its sides in coincidence with the right hand horizontal radius. From the point where the other side of the angle intersects the circumference, drop a perpendicular to the horizontal diameter of the circle. Represent the radius by r , the length of the perpendicular by y , and the distance from the center of the circle to the foot of the perpendicular by x . Then we have for any angle θ .

$$\sin \theta = \frac{y}{r}, \quad \tan \theta = \frac{y}{x}, \quad \sec \theta = \frac{r}{x},$$

$$\cos \theta = \frac{x}{r}, \quad \cot \theta = \frac{x}{y}, \quad \csc \theta = \frac{r}{y}.$$

When y is below the horizontal diameter, and x is to the left of the center, they are negative quantities. Hence it follows that :

Cos, tan, cot and sec of angles in the second quadrant are negative ; sin, cos, sec and csc of angles in the third quadrant are negative ; sin, tan, cot and csc of angles in the fourth quadrant are negative. All other functions are positive.

The following rules can be used in finding from the tables the functions of angles greater than 90° :

To find a function of an angle in the second quadrant, subtract it from 180° and look for the same function of the difference, or subtract 90° from the angle and look for the co-function of the difference.

To find a function of an angle in the third quadrant, subtract 180° from the angle and look for the same function of the difference, or subtract the angle from 270° and look for the co-function of the difference.

To find a function of an angle in the fourth quadrant,

subtract it from 360° and look for the same function of the difference, or subtract 270° from the angle and look for the co-function of the difference.

The following table of the functions of 180° and 270° , together with those of 0° and 90° , given at the beginning of the lecture, will be convenient for reference :

$$\begin{array}{lll} \sin 180^\circ = 0, & \cos 180^\circ = -1, & \tan 180^\circ = 0, \\ \cot 180^\circ = \infty, & \sec 180^\circ = -1, & \csc 180^\circ = \infty, \\ \sin 270^\circ = -1, & \cos 270^\circ = 0, & \tan 270^\circ = \infty, \\ \cot 270^\circ = 0, & \sec 270^\circ = \infty, & \csc 270^\circ = -1. \end{array}$$

Functions of 360° are the same as those of 0° .

It sometimes happens that, in a problem, angles are measured in opposite directions. Such angles are distinguished from each other in the same manner as opposite linear distances, by the + and — signs. In this way negative angles arise.

The relations between the trigonometric functions of a negative angle and the same positive angle are expressed thus :

$$\begin{array}{ll} \sin (-\theta) = -\sin \theta, & \cos (-\theta) = \cos \theta, \\ \tan (-\theta) = -\tan \theta, & \cot (-\theta) = -\cot \theta, \\ \sec (-\theta) = \sec \theta, & \csc (-\theta) = -\csc \theta. \end{array}$$

It is important to observe that the value of the sin and cos always lies between + 1 and — 1 ; the tan and cot can have any value at all, and the sec and cosec can have any value except between + 1 and — 1.

[See Trigonometry, Arts. 25-37.]

EXERCISES.

- (1) Give the definitions of the trigonometric functions of an angle of the second quadrant.
- (2) Why is the tan of an angle in the third quadrant positive ?
- (3) Show from the above definitions what the functions of 0° , 90° , 180° and 270° are.

- (4) Give in the form of a table the functions of all angles less than 360° that can be derived, by means of the principles of this lecture, from the functions of 30° ?
- (5) (a) $\sin \theta = \cos 78^\circ$; (b) $\tan \frac{1}{2} \phi = \frac{1}{2} \sqrt{3}$. Find θ and ϕ .
- (6) $\cos x = \frac{\sin^4 121^\circ 17' 6'' \times \tan 136^\circ 14'}{\cot (-12^\circ 17' 13'') \times \cos^4 148^\circ 16'}$; find x ; give both results.
- (7) If $\tan x = -\frac{2}{3}$ and $\cos x$ is positive, what will be the quadrant of x ? Find all the functions of x .
- (8) A boat is sailing at right angles to the direction of the wind; the force exerted by the wind against a surface at right angles to its direction is 3 pounds per square foot; the area of the sail is 240 square feet. Find the force available to propel the boat:—(1) when the sail makes an angle of 30° with the direction in which the boat is moving; (2) when the angle is 45° ; (3) when the angle is 60° .

VII.

RESULTANT OF A SYSTEM OF FORCES ACTING IN ONE PLANE.

The resultant of a system of forces in one plane acting at a point may be found in two ways: (1) Find the resultant of any two of the forces, then the resultant of this first resultant and a third one of the system, and so on until the whole is reduced to one force, which will be the resultant of the system. (2) Take any two lines at right angles to each other in the plane of the forces, resolve each force in these two directions; the algebraic sum of the resolved parts in these two directions will constitute a system of two forces equivalent to the original system. The resultant of these two forces will therefore be the resultant of the given system.

In most cases the second method is preferable.

A formula covering the case may be expressed as follows: Let $P_1, P_2, P_3, P_4 \dots$ be the forces. Let XX_1 and YY_1 represent two lines at right angles to each other in the plane of the forces. Let $\alpha_1, \alpha_2, \alpha_3, \alpha_4 \dots$ represent the angles which the forces make respectively with XX_1 . Let x and y represent the algebraic sums of the resolved parts of the forces in the directions XX_1 and YY_1 , respectively. Then

$$x = P_1 \cos \alpha_1 + P_2 \cos \alpha_2 + P_3 \cos \alpha_3 + P_4 \cos \alpha_4 + \dots$$

$$y = P_1 \sin \alpha_1 + P_2 \sin \alpha_2 + P_3 \sin \alpha_3 + P_4 \sin \alpha_4 + \dots$$

If R represent the resultant and θ the angle it makes with XX_1 , we have

$$R = \sqrt{x^2 + y^2} \text{ and } \tan \theta = \frac{y}{x},$$

where θ must be taken in that quadrant where the sin and cos have the signs of y and x respectively.

These methods will be illustrated in the lecture by examples.

EQUILIBRIUM OF FORCES IN ONE PLANE ACTING AT A POINT.

If the resultant of a system of forces acting at a point is zero, the forces are said to be in equilibrium. This condition is satisfied if both $x = 0$ and $y = 0$.

If a system of forces acting at a point is not in equilibrium, a force equal and opposite to the resultant of the system will establish equilibrium.

[See Todhunter's *Mechanics for Beginners*, Chap. III.]

GENERAL TRIGONOMETRIC FORMULÆ.

The following formulæ are of great importance :

$$\sin(x + y) = \sin x \cos y + \cos x \sin y,$$

$$\sin(x - y) = \sin x \cos y - \cos x \sin y,$$

$$\cos(x + y) = \cos x \cos y - \sin x \sin y,$$

$$\cos(x - y) = \cos x \cos y + \sin x \sin y;$$

x and y here represent any angle. The demonstration of the above will be given in the lecture.

These formulæ are of the utmost importance, and are made use of constantly wherever the methods of mathematics are employed. They should be memorized by the student. This remark applies also to the formulæ that follow in Lecture VIII.

[See Trigonometry, Arts. 41 and 42.]

EXERCISES.

- (1) Define equilibrium of forces acting at a point.
- (2) Find the magnitude and direction of the resultant of the following forces : 7 acting at an angle of 62° , 13 acting at 138° , 10 acting at 190° , 5 acting at 265° , 9 acting at 330° .
- (3) Forces of 33 and 15 pounds act at a point at an angle of 57° with each other. What is their resultant, and what angle does it make with the larger force?
- (4) A weight of 10 pounds hangs from a vertical cord. Another cord is then attached to the weight and it is drawn aside with a force of 5 pounds, acting horizontally. When equilibrium is established what will be the angle the first cord makes with the vertical, and what will be the tension in it? If the second cord is inclined at an angle of 30° above the horizon, what will be the results? If the angle is 30° below the horizon, what will be the results?
- (5) If in the above example the tension in the first cord is 12 pounds, that in the second remaining 5 pounds, at what angle with the horizon does the second cord act when the system is in equilibrium?
- (6) Give the derivation of the two formulæ :

$$\sin(x + y) = \sin x \cos y + \cos x \sin y,$$

$$\cos(x + y) = \cos x \cos y - \sin x \sin y.$$

VIII.

GENERAL TRIGONOMETRIC FORMULÆ (Continued).

The following formulæ are of equal importance with those given in the last lecture :

$$\tan (x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y},$$

$$\sin x + \sin y = 2 \sin \frac{1}{2}(x + y) \cos \frac{1}{2}(x - y),$$

$$\sin x - \sin y = 2 \cos \frac{1}{2}(x + y) \sin \frac{1}{2}(x - y),$$

$$\cos x + \cos y = 2 \cos \frac{1}{2}(x + y) \cos \frac{1}{2}(x - y),$$

$$\cos x - \cos y = 2 \sin \frac{1}{2}(x + y) \sin \frac{1}{2}(y - x),$$

$$\frac{\sin x + \sin y}{\sin x - \sin y} = \frac{\tan \frac{1}{2}(x + y)}{\tan \frac{1}{2}(x - y)}.$$

$$\sin 2x = 2 \sin x \cos x, \quad 2 \sin^2 \frac{1}{2}x = 1 - \cos x,$$

$$\cos 2x = \cos^2 x - \sin^2 x, \quad 2 \cos^2 \frac{1}{2}x = 1 + \cos x,$$

$$\tan 2x = \frac{2 \tan x}{1 - \tan^2 x}, \quad \tan^2 \frac{1}{2}x = \frac{1 - \cos x}{1 + \cos x}.$$

The demonstration of these formulæ will be given, and some of their various uses and applications will be shown.

[See Trigonometry, Arts. 43-46.]

EXERCISES.

- (1) Derive the formulæ for $\sin 2x$, $\cos 2x$, $\tan 2x$.
- (2) Derive the values of \sin , \cos and \tan of 180° from the functions of 90° , by the use of the formulæ given above.

$$(3) \cot \phi = \frac{\cos 212^\circ 38' + \cos 112^\circ 58'}{\sin 113^\circ 45' - \sin 92^\circ 6'};$$

compute ϕ .

- (4) Prove the formula

$$\sin (x + y) \sin (x - y) = \sin^2 x - \sin^2 y.$$

- (5) Prove the formula

$$\cos \theta = \frac{1 - \tan^2 \frac{1}{2} \theta}{1 + \tan^2 \frac{1}{2} \theta}.$$

- (6) Prove the formula

$$\frac{\cos (x + y)}{\cos (x - y)} = \frac{1 - \tan x \tan y}{1 + \tan x \tan y}.$$

- (7) To determine the height of an inaccessible object, its angles of elevation from two points on the same side of the object, 300 feet apart, were measured. From the nearer point the angle was 59° , and from the farther 41° . If the angles are both in the same vertical plane, how high is the object, and what is its distance from the nearer point?

IX.

THE SOLUTION OF OBLIQUE TRIANGLES.

This subject is generally divided into four cases, as follows:

Case I.—Given one side and two angles.

Case II.—Given two sides and the angle opposite one of them.

Case III.—Given two sides and the included angle.

Case IV.—Given the three sides.

The three angles are represented by A , B and C , and the sides opposite to these angles, respectively by a , b and c . The formula by which Cases I and II are solved is:

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}.$$

This formula will be proved and applied to examples coming under these cases.

In Case I the solution is always possible provided the sum of the two given angles is not greater than 180° . In Case II it is sometimes possible to get two results, sometimes only one, and sometimes none at all. These conditions for Case II may be tabulated thus, when A represents the given angle and a and b the given sides:

$$A < 90^\circ \begin{cases} a < b \sin A, \text{ no solution.} \\ a > b \sin A, \text{ but } < b, \text{ two solutions.} \\ a > b, \text{ one solution.} \end{cases}$$

$$A > 90^\circ \begin{cases} a > b, \text{ one solution.} \\ a < b, \text{ no solution.} \end{cases}$$

In solving a triangle under Case I, the formulæ may be arranged thus :

Let A, B and c be the given parts,

$$C = 180 - (A + B), \quad a = \frac{C \sin A}{\sin C}, \quad b = \frac{c \sin B}{\sin C}.$$

For Case II the following arrangement is used :

Let A, a and b be the given parts,

$$\sin B = \frac{b \sin A}{a}, \quad C = 180 - (A + B), \quad c = \frac{a \sin C}{\sin A}.$$

In order to solve a triangle under Case III, an additional formula is required,

$$\frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}.$$

Let a, b and C be the given parts, the following arrangement is then used :

$$\begin{aligned} A + B &= 180^\circ - C \\ \tan \frac{1}{2}(A - B) &= \frac{a-b}{a+b} \tan \frac{1}{2}(A + B) \\ A &= \frac{1}{2}(A + B) + \frac{1}{2}(A - B) \\ B &= \frac{1}{2}(A + B) - \frac{1}{2}(A - B) \\ c &= \frac{a \sin C}{\sin A}. \end{aligned}$$

A modification of the above is sometimes of advantage.

$$\text{Let} \quad \tan \phi = \frac{a}{b},$$

$$\text{then} \quad \frac{a-b}{a+b} = \tan (\phi - 45^\circ).$$

The second equation above then becomes

$$\tan \frac{1}{2}(A - B) = \tan (\phi - 45^\circ) \tan \frac{1}{2}(A + B).$$

In all other respects the method is the same.

In writing the above formulæ it has been assumed that a is the larger of the two given sides. If b is larger than a it is well to interchange them all through in order to avoid negative quantities.

[See Trigonometry, Arts. 61, 62, 68-70 and 74.]

EXERCISES.

- (1) Given $C = 109^\circ 32'$, $c = 1026.4$, $b = 729.5$, solve the triangle.
- (2) Prove the formula used in solving this triangle.
- (3) A pole stands upon a slope of 7° . From two points, 150 feet apart (horizontally), and in the same vertical plane with the pole, the angles of elevation of its top are $23^\circ 9'$ and $35^\circ 12'$, respectively. What is the height of the top of the pole above, and its distance (horizontally) from the nearer point? The points of observation are supposed to be on the same side of the pole. [Any student who desires may substitute letters for the three angles and the distance, and give the general solution of the problem.]
- (4) The diagonals of a parallelogram are $d = 102.12$ and $d_1 = 141.16$ and their included angle $\phi = 72^\circ 12'$. Find the sides and angles of the figure.
- (5) To find the distance between two inaccessible points M and N a surveyor measures a line AB , 350 feet long. At A he finds the angle $BAM = 102^\circ 19'$, and the angle $BAN = 41^\circ 7'$; and at B he finds the angle $ABN = 98^\circ 16'$, and the angle $ABM = 52^\circ 18'$. Determine the length of MN .
- (6) Prove the formula

$$\frac{a-b}{a+b} = \frac{\tan \frac{1}{2}(A-B)}{\tan \frac{1}{2}(A+B)}$$

X.

SOLUTION OF OBLIQUE TRIANGLES (Continued).

In any triangle the following relations exist between each angle and the three sides :

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$b^2 = c^2 + a^2 - 2ca \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C.$$

These equations give

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

and similar expressions for $\cos B$ and $\cos C$, from which, when a , b and c are given, A , B and C can be found. In this form, however, the formulæ are not convenient for logarithmic computation; other expressions are therefore deduced from them. These are:

$$\sin \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{bc}}$$

$$\cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}}$$

$$\tan \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}},$$

where $s = \frac{1}{2}(a + b + c)$.

By interchanging the letters similar expressions are found for B and C . There are thus three sets of formulæ, any of which will furnish the complete solution of the triangle.

If the tangent formulæ are used, the following modification of them is convenient:

$$\text{Let } r = \sqrt{\frac{(s-a)(s-b)(s-c)}{s}},$$

then

$$\tan \frac{1}{2} A = \frac{r}{s-a}, \quad \tan \frac{1}{2} B = \frac{r}{s-b}, \quad \tan \frac{1}{2} C = \frac{r}{s-c}.$$

[See Trigonometry, Arts. 63-66 and 71.]

APPLICATION TO THE PARALLELOGRAM OF FORCES.

In Lecture IV it was shown how to calculate the resultant of two forces acting at right angles. From the results of this lecture a method is derived by which the resultant of two forces acting at any angle can be computed. Let the forces be P and Q , θ the angle between them, and R their resultant, then

$$R^2 = P^2 + Q^2 + 2PQ \cos \theta.$$

This method of computing R is often more convenient than that of Lecture VII, when only two forces are involved.

If P_1, P_2, P_3 represent three forces in equilibrium, then each force is equal and opposite to the resultant of the other two. Let θ_1 be the angle between P_2 and P_3 , θ_2 that between P_3 and P_1 , and θ_3 that between P_1 and P_2 . Then we have

$$P_1^2 = P_2^2 + P_3^2 + 2P_2P_3 \cos \theta$$

$$P_2^2 = P_3^2 + P_1^2 + 2P_3P_1 \cos \theta$$

$$P_3^2 = P_1^2 + P_2^2 + 2P_1P_2 \cos \theta_3.$$

by which the angles between the several forces may be computed.

Lines parallel and proportional to three forces in equilibrium will always form a triangle, whose angles are the supplements of θ_1, θ_2 and θ_3 .

[See Todhunter's *Mechanics for Beginners*, Chap. II.]

EXERCISES.

- (1) Prove the formula $a^2 = b^2 + c^2 - 2bc \cos A$. Show how the formula for the resultant of two forces is derived from this.
- (2) Solve Ex. (4) Lect. VII by the method of this lecture.
- (3) Solve Ex. (5) Lect. VII in the same way.
- (4) A beam, $9\frac{1}{2}$ feet long, rests against a wall at an angle (with the wall above its point of juncture) of 50° ; a rope connects the upper end of the beam with a point on the wall 10 feet above where the beam rests; if a weight of 100 pounds be hung at the outer end of the beam, what will be the tension in the rope?
- (5) Given $a = 421.96, b = 632.17, c = 512.23$, solve the triangle.
- (6) Three forces of 120 pounds, 150 pounds and 200 pounds acting at a point are in equilibrium; find the angles between them, and draw a diagram showing how they act.

XI.

MOMENTS.

The *moment* of a force with respect to a point is the product of the force into the perpendicular distance of the line of action of the force from the point. This distance is called the *arm* of the force. That is, the moment of a force is the measure of the tendency of the force to cause the body upon which it acts to revolve about the point with respect to which the moment is taken. The moment of a force as here defined is sometimes called, more specifically, the *statical moment*.

If two forces tend to cause a body upon which they act to revolve in opposite directions about the point with respect to which moments are taken, the moments of the forces are distinguished by the signs $+$ and $-$.

The moment of the resultant of a system of forces acting in one plane upon a body is equal to the algebraic sum of the moments of the individual forces composing the system.

If a body which can turn only in one plane about one point is acted upon by a system of forces, the algebraic sum of the moments of which, about that point, is zero, then the system will be in equilibrium, so far as revolution about that point is concerned. Should the algebraic sum of the moments of the forces not vanish, motion will ensue. If it is required then to establish equilibrium a new force must be applied, whose moment added (algebraically) to the sum of the others produces zero.

The above is a generalization of the well-known principle of the lever.

[See Todhunter's *Mechanics for Beginners*, Chaps. V, VI, XI and XIII.]

PARALLEL FORCES.

If in a system of parallel forces all the forces act in the same direction, the resultant of the system acts in the

same direction and is equal to the sum of the forces. If some of the forces act in one direction and some in the other, the resultant is equal to the difference between the sum of those acting in one way and the sum of those acting in the other, and it acts in the direction of the greater of these two sums. To find the point of application of the resultant we take moments about any point in the plane of the forces. Thus let P_1, P_2, P_3, \dots be a system of parallel forces, and a_1, a_2, a_3, \dots the perpendicular distances of their lines of action from any point in their plane. Let R be the resultant and x its arm. Then, first:

$$R = (P_1 + P_2 + P_3 + \dots)$$

$$\text{And: } Rx = (P_1a_1 + P_2a_2 + P_3a_3 + \dots)$$

from which x and R can be computed. Great care must be taken to give each of the forces and each of the moments in these equations its proper sign. The $+$ sign used in them indicates the *algebraic* sum.

The point of application of the resultant of a system of parallel forces is called the center of the system.

If two equal forces are parallel, and act in opposite directions, they have no resultant, and their tendency in acting upon a body is simply to produce revolution in their own plane. Such a system is called a *couple*. The moment of a couple is the same about every point in its plane and is equal to the product of one of the forces into the perpendicular between them.

[See Todhunter's *Mechanics for Beginners*, Chaps. IV and VIII.]

CENTER OF GRAVITY.

The center of gravity is defined thus [Todhunter's *Mechanics for Beginners*, p. 72]: "The *center of gravity* of a body or system of bodies is a point on which the body or system of bodies will balance in all positions, supposing the point to be supported, the body or system to be acted on only by gravity, and the parts of the body or system to be rigidly connected with the point."

To determine the position of the center of gravity of a system of heavy particles, we regard the weights of the several particles as parallel forces and then determine the line of action of the resultant of the forces. We do this with the particles in two different positions with respect to the horizon. The intersection of the lines of action of the resultants will be the center of gravity.

By the center of gravity of a plane area is meant the center of gravity of a thin uniform sheet of some substance in the shape of the area.

The center of gravity of a uniform rod is its middle point.

The center of gravity of a triangle is the intersection of the medial lines.

The center of gravity of any plane figure symmetrical about a point is the center of symmetry of the figure.

[See Todhunter's *Mechanics for Beginners*, Chap. X.]

EXERCISES.

- (1) Solve Ex. 4, Lect. X, by the method of moments.
- (2) A straight bar, 6 feet long, pivoted at its middle point, has a weight of 10 pounds at the left-hand end, and a weight of 12 pounds 1 foot from the same end. What force, acting at an angle of 45° with the bar at the right-hand end, will keep the bar in a horizontal position?
- (3) A bent lever has one arm 24 inches long, inclined 20° above the horizon, and the other 36" long, inclined 40° above the horizon (so that the angle between the arms is 120°). At an angle of 115° with the shorter arm (and 45° with the horizon) a force of 150 pounds acts downward. Find what horizontal force at the end of the longer arm will maintain equilibrium.
- (4) Parallel forces of 5, 8 and 7 pounds act upon a bar. The distance between the first two is 10 inches, that between the second and third is 15 inches. Find the resultant

- (1) when all act in the same direction ; (2) when 5 acts in one direction and 8 and 7 in the opposite ; (3) when 5 and 7 act in one direction and 8 in the opposite.
- (5) A horizontal beam, 12 feet long, supported at both ends, is loaded by weights of 150, 60, 120 and 100 pounds. The loads are respectively 3 feet, 5 feet, 8 feet and 10 feet from the left-hand end. Determine the reactions of the points of support at both ends.
- (6) A uniform bar, 6 feet long, weighing 3 pounds per linear foot, is pivoted 2 feet from the left-hand end and a weight of 6 pounds is hung on the right-hand end. What weight must be hung at the left-hand end to keep the bar horizontal ?
- (7) Particles weighing 3, 4 and 5 pounds are placed at the vertices of an equilateral triangle ; determine their center of gravity (side of the triangle $= a$).
- (8) A regular hexagon has cut from it an equilateral triangle, whose base is one side of the hexagon. Find the center of gravity of the remaining part.

XII.

INVERSE TRIGONOMETRIC NOTATION.

A very common mode of representing an angle is to express it by giving the value of one of its trigonometric functions instead of the numerical measure of the angle itself. Thus, if we wish to represent 60° , we write $\cos^{-1}\frac{1}{2}$, which is understood to mean the angle or arc whose cosine is $\frac{1}{2}$. It is read briefly as "arc cos $\frac{1}{2}$," or "inverse cos $\frac{1}{2}$," or sometimes as "anti-cos $\frac{1}{2}$." It always means, however, the angle 60° . In the same way $\sin^{-1}1 = 90^\circ$, $\tan^{-1}(-1) = 135^\circ$, $\cot^{-1}\infty = 0$, etc.

[See Trigonometry, Art. 38.]

AREA OF A TRIANGLE.

The most important trigonometric expressions for the area of a triangle are

$$K = \frac{1}{2} bc \sin A = \frac{1}{2} ca \sin B = \frac{1}{2} ab \sin C,$$

$$\text{and } K = \sqrt{s(s-a)(s-b)(s-c)},$$

where K represents the area, and $s = \frac{1}{2}(a + b + c)$.

[See Trigonometry, Art. 72.]

TRIGONOMETRIC EQUATIONS.

A trigonometric equation is one which involves the functions of some unknown angle. The solution of such an equation can often be performed by reducing it all to terms of one function, and solving in the same manner as an algebraic equation.

Two or three forms of equations deserve special notice.

I. To solve $\frac{m \sin \phi = a}{m \cos \phi = b}$, where m and ϕ are unknown.

Dividing the first equation by the second, we have:

$$\tan \phi = \frac{a}{b},$$

and $\therefore m = \frac{a}{\sin \phi}$, or $= \frac{b}{\cos \phi}$.

II. To solve $a \cos \phi + b \sin \phi = c$, where ϕ is unknown.

Let $k \sin x = a$ and $k \cos x = b$.

Then $\tan x = \frac{a}{b}$ and $k = \frac{a}{\sin x}$.

Substituting the assumed values of a and b in the given equation, we have:

$$k \sin x \cos \phi + k \cos x \sin \phi = c,$$

or, $k \sin (x + \phi) = c,$

$$\therefore \sin (x + \phi) = \frac{c}{k}, \text{ or } = \frac{c \sin x}{a}.$$

III. To solve $r \cos \phi \sin \theta = a$

$$r \sin \phi \sin \theta = b$$

$$r \cos \theta = c,$$

where r , ϕ and θ are unknown.

The solution is, $\tan \phi = \frac{b}{a},$

$$\tan \theta = \frac{b}{c \sin \phi},$$

$$r = \frac{c}{\cos \theta}.$$

[See Trigonometry, Arts. 78 and 79.]

EXERCISES.

- (1) Find $\tan (\cos^{-1} \frac{3}{5})$.
- (2) Prove that $\sin^{-1} m + \cos^{-1} m = \frac{\pi}{2}$.
- (3) Prove the formula $K = \sqrt{s(s-a)(s-b)(s-c)}$.
- (4) The area of a triangle = 62172 square feet, and two of the sides are 379 and 312 feet respectively; determine the third side and the angles.
- (5) Solve the equation $\tan x + \cot x = 2$.
- (6) Find a and x from the equations

$$a \sin x = 4.296,$$

$$a \cos x = -4.782,$$

where a is to be positive.

- (7) Find x from the equation $16 \sin x - 42 \cos x = -12.92$.
- (8) Find r , ϕ and θ from $r \cos \phi \sin \theta = -6.896$

$$r \sin \phi \sin \theta = 0.412$$

$$r \cos \theta = 4.216,$$

where r is to be +, and $\phi < 180^\circ$.

MISCELLANEOUS EXERCISES.

- (1) Find $\log \frac{36 \times 15^2 \times \sqrt[3]{9 \times 20}}{\sqrt{30} \times (5 \times 12)^{\frac{2}{3}}}$,
having given $\log 2 = .30103$, $\log 3 = .47712$, $\log 5 = .69897$.
- (2) Calculate the value of e to 10 decimal places.
- (3) If $\frac{1}{2}$ be taken as the base of a system of logarithms, what will be the logarithms of $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4, 16, 32?
- (4) Calculate the value of

$$\frac{\left(\frac{36.89}{725.67}\right)^{\frac{1}{2}} \div \frac{.072615}{.0006 \times 371} \times \left(\frac{65.926}{2.7623}\right)^{\frac{2}{3}}}{.37961 \times \frac{67 \times 389}{1.7362} \div \sqrt[4]{.007937}}$$

- (5) Find the number of degrees in the angle subtended at the center of a circle whose radius is 10 feet by an arc 9 inches long.
- (6) An isosceles triangle of wood is placed on the ground in a vertical position, facing the sun. If $2a$ be the base of the triangle, b its height, and 30° the altitude of the sun, find the tangent of half the angle at the apex of the shadow.
- (7) From the top of a hill the angles of depression of the top and bottom of a flagstaff, 25 feet high, at the foot of the hill are observed to be $45^\circ 13'$ and $47^\circ 12'$ respectively. Find the height of the hill.
- (8) Three forces, 3, 4, 5 pounds, act on a particle in the center of a square in directions toward three of the angles of the square. Find the magnitude and the direction of the force that will keep the particle at rest.
- (9) A body, weighing 10 pounds, rests on a plane inclined 30° to the horizon. Find the least horizontal force that will prevent the body from sliding, if $f = \frac{1}{2\sqrt{3}}$.
- (10) Show that $\sin^2 \theta \tan \theta + \cos^2 \theta \cot \theta + 2 \sin \theta \cos \theta = \tan \theta + \cot \theta$.
- (11) Find all the values of θ which satisfy $\cos^2 \theta = \cos^2 \alpha$.
- (12) Tell in what quadrants the following angles are found:

$$2n\pi + \frac{\pi}{6}, (2n+1)\pi + \frac{\pi}{3}, (2n+1)\pi - \frac{\pi}{4}.$$

- (13) Eight points are taken on the circumference of a circle at equal distances, and from one of the points straight lines are drawn to the rest; if these straight lines represent forces acting at the point, show that the direction of the resultant coincides with the diameter through the point, and that its magnitude is four times that diameter.
- (14) Prove the formula $\frac{\cos \theta - \cos 3\theta}{\sin 3\theta - \sin \theta} = \tan 2\theta$.

- (15) Prove the formula

$$\left(\cot \frac{\theta}{2} - \tan \frac{\theta}{2} \right)^2 (\cot \theta - 2 \cot 2\theta) = 4 \cot \theta.$$
- (16) The four sides of a quadrilateral, a, b, c, d , equal respectively 620, 1127, 1205 and 516 feet, and the angle between a and d is 130° . Find the length of the diagonal which joins the vertex of the known angle with the opposite vertex.
- (17) Two towers stand on a horizontal plane, 120 feet apart. A person standing successively at their bases observes that the angle of elevation of one is twice that of the other, but when he is half-way between them their angles of elevation are complementary to each other. What are the heights of the towers?
- (18) From the top of a cliff h feet high, the angular depression of two ships at sea are α and β respectively. Show that the distance between the ships is $\frac{h \sin(\alpha - \beta)}{\sin \alpha \sin \beta}$. Find the distance in feet if $h = 900$ feet, $\alpha = 10^\circ$ and $\beta = 7^\circ$.
- (19) Forces proportional to the numbers $\sqrt{3} + 1, \sqrt{3} - 1$ and $\sqrt{6}$ act on a particle. Find the angles between their respective direction, when there is equilibrium.
- (20) A beam, 12 feet long, weighing 50 pounds per linear foot, is supported at a point 3 feet from the left-hand end and at the right-hand end. A weight of 400 pounds is placed 4 feet from the left support. Find the pressure upon each support.
- (21) Prove that in any triangle $K = \frac{a^2 \sin B \sin C}{2 \sin(B+C)}$.
- (22) Prove that $\sin^{-1} \frac{1}{5} \sqrt{5} + \tan^{-1} \frac{1}{3} = \frac{\pi}{4}$.
- (23) Find m and x from the equations

$$m(\sin x + \cos x) = -128.12$$

$$m(\sin x - \cos x) = 14.64$$
- (24) Two circles, whose radii are 20 and 12 feet respectively, are placed in the same plane, with their centers 25 feet apart. Find the area of the space common to the two circles.

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EXERCISES.

Exercises for the lectures of each week will be found at the end of the syllabus. All persons attending the lectures are invited to send written answers; they should be addressed to Mr. JOSIAH H. PENNIMAN, 4322 Sansom St., Philadelphia, Pa., and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. The papers will be returned, with comments, at the class, when further explanations on the general subject will be made. All are invited to the class whether they have sent exercises to the lecturer or not.

LECTURE I.

HAWTHORNE.

Hawthorne is a novelist-romancer in that he deals with the supernatural. An unseen influence controlling human affairs is a prominent feature of his books.

Topics Discussed.

- I. There are two methods of studying literature ; the first begins with the life of the author and then proceeds to a consideration of his writings in connection with his life ; the second is what has been called the "inductive" method, and considers the author's life only so far as it is learned from his works. The methods are supplementary, and the choice of one or the other is largely influenced by the particular author under consideration.
- II. Hawthorne has been pronounced by many critics the greatest American writer of prose fiction, although various other authors have been mentioned as claimants of this distinction.
- III. It is necessary, in dealing with Hawthorne's works, to distinguish between a novel and a romance.
 - (1) A novel is a story with a plot of more or less intricacy, presenting to us fictitious characters and events which are perfectly in accord with the real characters and events of the period.
 - (2) A romance may include all that a novel does, but must have an additional element—the supernatural (*i. e.*, etymologically, what is beyond natural). This distinction applies to unusual and unnatural actions,

such as jousting with windmills, like Don Quixote, or to influences or events which seem beyond human control, like the curse resting on the Pyncheon family in the "House of the Seven Gables."

- IV. Hawthorne's early life and its effect on his career. The old room in Salem and the influences of traditions of witchcraft naturally affected a sensitive nature. Longfellow's review of "Twice-Told Tales."
- V. Hawthorne's books have two sides and may be read with at least two distinct purposes: (1) simply for the story; (2) as a psychological study.
- VI. "Blithedale Romance," "Wonder Book," "Tanglewood Tales," with passages illustrative of their various characteristics. "Scarlet Letter," and its popularity in England. "House of the Seven Gables," a story of a curse resting on a family and going back to the witchcraft days. Comparison of "Scarlet Letter" and "House of the Seven Gables."
- VII. The secret of many of Hawthorne's attractions to his reader lies in making important facts often a matter of inference (*e. g.*, was Donatello a real Faun? the author leaves us to infer what we will. The description of Judge Pyncheon nowhere says that he is a corpse, yet we know it without being told).
- VIII. "Our Old Home;" Faun of Praxiteles, as described in Hawthorne's Note Book; "The Marble Faun" is probably the greatest modern romance and deals with the wild and natural character of man before he knew sin. The fall of the Faun and his attempt to regain his peace of mind. The moral purpose of all of Hawthorne's romances is in general the same. Sin always brings its own punishment. The romance of Immortality, left unfinished, is represented in two partial works: "Septimius Felton" and the "Dolliver Romance."
- IX. The effect of the supernatural is ruined by being subjected to a minute explanation, on this principle the

apparently unsatisfactory ending of the Marble Faun may be explained.

- X. Hawthorne's style is remarkable for the wonderful adaptation of words to sense.

LECTURE II.

EMERSON.

Emerson was an essayist, philosopher and poet, whose whole life and writings preach the dignity of man. Things as they are must be considered intrinsically good. Evil is self-corrective.

Topics Discussed.

- I. Transcendentalism is essentially idealistic in its principles. The world is to every man what he makes it, and no two men live in exactly the same world. Idealism asks the question: What proof have you that what you call external things exist anywhere but in your own consciousness?
- II. Emerson effected a revolution in throwing off all yokes of bondage, both in matter and form, and in standing forth free and independent in his literary productions. Alcott's estimate of Emerson. Emerson's optimism.
- III. The germinative power of Emerson's thought has been productive of wonderful results in developing the minds of others. His philosophy is founded on a few great truths:
 - (1) The immanence of God.
 - (2) The dignity of man.
 - (3) The mutual dependence of all created things.
- IV. Essay on "Nature" discussed. "Compensation" is one of the most comforting and helpful of the essays, because it shows that there is no disadvantage in life

- which is not in some way counterbalanced by a real advantage. "Heroes and Hero Worship," compared with "Representative Men." The definition of a great man, as given by Emerson and by Carlyle.
- V. "English Traits" is Emerson's longest treatise on a single theme and shows more constructiveness than his other works. Taken as a whole, Emerson's essays form a treatise on man and nature. "The Over-Soul," "Spiritual Laws."
- VI. Emerson as a poet. What is poetry? Various answers to the question. Emerson is a lyric poet, because spontaneous and subjective. Familiar quotations from his poems. His philosophy is as clearly stated in his poems as in his essays. He spiritualizes all things. "The Mountain and the Squirrel," "The Rhodora," "Threnody." Introspection is the chief quality of Emerson's poems; hence they are lyric, as distinguished from epic. Epics deal with themes in an objective manner.
- VII. Emerson deals not with the individual, but with the type. We must not accept unquestioned the criticism of others, but must be independent as far as possible in our judgments. Emerson's life was nearly ideal.

LECTURE III.

THOREAU.

Thoreau was Nature's mouthpiece and interpreter. His life was a protest against artificiality. The lesson which he teaches is that communion with nature is better than the amassing of wealth.

Topics Discussed.

- I. Authors in their lifetime are usually too near the eyes of their critics to be seen in a proper light. Living

authors are quite as likely to be overestimated as underestimated. Contemporary criticism is almost valueless in determining the true position which an author will hold in the world of literature.

- II. Thoreau's qualities of mind were such that Nature was ever his study and delight. He possessed a secret influence which caused even wild animals to lay aside their fear of man and eat out of his hand. The squirrel which he brought home refused to leave him. No other man saw nature as he did, and no one has written such marvellous descriptions of what he saw. He considered nature a revelation of God, and read her as other men read books. He was the apostle of "plain living and high thinking."
- III. "Walden." His hermit life and its meaning. "Simplify" was his watchword. The lessons which he taught are what were needed.
- IV. "Wood-sounds," as Thoreau heard them, and as he has described them. Passages from his life at Walden. His fearless utterances in behalf of John Brown. "Cape Cod." Even a sandy peninsula may furnish beauties and wonders to one who has eyes to see them.
- V. Thoreau, as a poet, has produced some fine lines which will not soon be forgotten. His poem on "Smoke" is classic in its language and imagery. Louisa Alcott's poem, "Thoreau's Flute."

LECTURE IV.

LONGFELLOW.

Longfellow is the poet of sympathy and domestic love. His message to men is contained in the "Psalm of Life." "Life is real, life is earnest."

Topics Discussed.

- I. Longfellow is truly American, although he wrote on many foreign subjects. Whittier and Longfellow compared. Longfellow is one of the learned poets, and draws from all literatures; Whittier began life as a farmer and deals almost exclusively with New England scenes and characters.
- II. "Outre-mer." Longfellow's genius is not creative, but elaborative. He found most of the materials for his poems in already existing literature. Translation from foreign languages served as a stimulus to his own poetic genius.
 "Voices of the Night." "The Psalm of Life" is not marvellous for its originality, for it contains in reality mere commonplaces, beautiful, it is true, but still not new. It is the wonderful imagery and choice of language that make the poem what it is. It rises to a climax uttered as an appeal or exhortation. "The Psalm of Life" has saved many despondent men from yielding to misfortunes.
- III. "Evangeline." The story was suggested to Longfellow by Hawthorne. The Pennsylvania Hospital appears in literature as the meeting-place of Evangeline and Gabriel. In the poem it is called the Alms-house, but the Hospital is what suggested it to the poet. The interest in the poem is uniform throughout, and the story is arranged with symmetry and proportion.
- IV. The metre of Evangeline is dactylic hexameter. A *dactyl* is a long or accented syllable, followed by two short or unaccented syllables, *e. g.*,

beautif^lul, lăb^lor^ling.

The *spondee*, which is exactly equivalent to the dactyl, and which may be used interchangeably with the dactyl, is composed of two long syllables. Dactylic hexameter is the metre of the *Æneid* of Virgil and the

Iliad and Odyssey of Homer, and from Latin and Greek has been introduced into English. The normal line is

— — | — — | — — | — — | — — | — —

The fifth foot must be a dactyl, and the sixth foot a spondee or trochee.

The difference between English and the classic languages, in matters of versification, is that English verse depends on accent, while Latin and Greek verse depend on quantity.

- V. Longfellow has written a poem which has great interest, and which does not weary with the metre, notwithstanding the oft-repeated assertion that hexameter verse is not adapted to the English language. It requires rare ability to use hexameter without becoming monotonous and dull. The effect if *Evangeline* had been written in pentameter is shown by the passage on the mocking-bird :

Upon a spray that overhung the stream,
The mocking-bird, awakening from his dream,
Poured such delirious music from his throat, etc.

The same lines, as written in hexameter :

Then from a neighboring thicket, the mocking-bird,
wildest of singers,
Swinging aloft on a willow spray that hung o'er the
water,
Shook from his little throat such floods of delirious
music, etc.

Hexameter verse has proved the proper metre for a sad story like *Evangeline*.

- VI. The imagery of *Evangeline*. The exiles on the river at evening. The pathos of the story. "The Courtship of Miles Standish," based on traditions of the poet's ancestors. Longfellow's mother was a direct

- descendant of John Alden and Priscilla Mullens. The metre of the poem is the same as that of *Evangeline*.
- VII. "*Hiawatha*." The metre of *Hiawatha* is trochaic:

┌ ˘ | ┌ ˘ | ┌ ˘ | ┌ ˘

Scott's "*Lady of the Lake*" is metrically the same as *Hiawatha* read backwards:

˘ ˘ | ˘ ˘ | ˘ ˘ | ˘ ˘

In *Hiawatha*, as in *Evangeline*, the poet has chosen the metre best adapted to the subject.

- VIII. *Hiawatha* legends. Pathos of some passages. The death of Minnehaha. *Hiawatha* is probably the best Indian poem in the language.

- IX. "*Tales of a Wayside Inn*." The friends were Lyman Howe, Dr. Henry Wales, Prof. Luigi Monti, Mr. Edrehi, Prof. Daniel Tredwell, Dr. Parsons and Ole Bull.

- X. "*Christus, a Mystery*." This is a trilogy composed thus:

(1) *The Divine Tragedy* (Apostolic times)—Hope.

(2) *The Golden Legend* (middle ages)—Faith.

(3) *The New England Tragedies* (modern times)

—Charity.

This trilogy was a work to which Longfellow devoted his most earnest attention, for his delight in it was that of a devout soul, in addition to the interest which, as an artist, he had in a fine subject. The "*Divina Commedia*" translation.

- XI. Longfellow's imaginative treatment of his subjects. His additions to our stock of poetic images.

LECTURE V.

WHITTIER.

Whittier is one of the most thoroughly American poets that we have. He deals with nature in an affectionate manner, and always finds there some evidence of God's goodness. His poems have a deep religious tone.

Topics Discussed.

- I. The greatest poems do not need a commentary to make their meaning clear. If a poem is obscure it is usually the fault of the poet. The English School of Nature finds in Wordsworth its greatest exponent. His fame ultimately rests on those poems in which profound truths are expressed in the simplest manner. The School of Nature is a late development. Bryant and Whittier compared. Bryant's imagination is loftier, but Whittier reaches the simple country folk, as Bryant does not.
- II. "The Barefoot Boy" is a description of the poet's own boyhood. Burns was a stimulus to Whittier. Whittier's life was devoted to the suppression of slavery, and to this he consecrated his muse. His slavery poems are full of intense hatred of slavery, but are necessarily of little interest to-day. "The Pennsylvania Pilgrim" was probably inspired by the fact that Pastorius, whom it celebrates, drew up the first protest against slavery in this country.
- III. Indian traditions. "Mogg Megone" was written as a framework for descriptions of New England scenery. The story of Mogg Megone. "The Bridal of Pennacook" contains some fine passages, especially the last song of the Indian women. "Cassandra Southwick" reveals to us that Whittier's greatest strength lies in ballad writing.

- IV. "Tent on the Beach" is similar to Longfellow's "Tales of a Wayside Inn," and both are similar in plan to Chaucer's "Canterbury Tales." The group of friends who were in the tent were James T. Fields, Whittier and Bayard Taylor. "Barclay of Ury." "The Hermit of the Thebaid" is one of the best of Whittier's poems. "Randolph of Roanoke" is one of the finest tributes ever paid, and is especially noteworthy because it came from one whose opinions were hostile to those held by Randolph. It shows the greatness of Whittier's mind. "Ichabod."
- V. "Telling the Bees." "Skipper Ireson's Ride." "Barbara Frietchie." "Maud Müller."
- VI. "Snowbound" is Whittier's masterpiece. The description is of a New England snowstorm during which the family are kept indoors. The time is passed in telling stories around the blazing fire while the storm rages without. Whittier's description of his father's household is unexcelled, and the tender and loving reference to his sisters is perhaps the finest passage in the poem.
- VII. Whittier deals with nature "as God has made it, rather than as man has marred it." His descriptions of nature contain no highly figurative passages, and are not embellished with the little devices so common to poets. His influence is morally elevating.

LECTURE VI.

LITERATURE IN AMERICA.

Topics Discussed.

- I. The term "American Literature" is misleading and should be supplanted by the term "Literature in America." Literature in a democratic nation.

- II. The tendency of American thought shown in literature. "Americanisms." The English language is more uniform in different parts of America than in different parts of England.
- III. Our literary history may be conveniently divided into
 - (1) The colonial period (1650-1750).
 - (2) The revolutionary period (1750-1850).
 - (3) The last half of the nineteenth century.
- IV. Recapitulation.

QUESTIONS.

Lecture I.

- 1. What is the moral lesson of Hawthorne's books?
- 2. Do you consider Hawthorne's treatment of human nature morbid? Why?
- 3. What reason may be given for the apparently unsatisfactory manner in which the "Marble Faun" closes?
- 4. Illustrate by examples from literature the difference between the novel and the romance in method of treating the subject.

Lecture II.

- 1. What are the chief peculiarities of Emerson's prose style?
- 2. How would you briefly sum up his philosophy?
- 3. What is your opinion of Emerson's doctrine of evil?
- 4. Why must Emerson's poetry be classed as lyric?

Lecture III.

- 1. What lesson was Thoreau's strange life intended to teach?
- 2. Quote passages to show what you consider the finest qualities of Thoreau's style.

3. Is the charge that Thoreau imitated Emerson a just one?
4. Trace the influence of Emerson's thought on Thoreau's life.

Lecture IV.

1. Which of Longfellow's poems do you consider the most perfect? Why?
2. What is the historical foundation of *Evangeline*?
3. What can you say of the metre of *Evangeline*? What is the difference between English and the classic languages in the matter of versification?
4. Does the fact of foreign subjects make Longfellow's poems necessarily foreign in tone?

Lecture V.

1. Why is "Snowbound" a great poem?
2. What is the School of Nature and who are its greatest representatives in America?
3. Compare briefly the poetry of Whittier and Longfellow.
4. What is Whittier's view of life as shown in his poem, "My Soul and I"?

Lecture VI.

1. What is your opinion of the term "American Literature?"
2. What do you consider the leading characteristic of American literary productions?
3. What is the effect of democratic society upon literature?

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A MONTHLY JOURNAL
DEVOTED TO THE INTERESTS OF
POPULAR EDUCATION.

VOL. I.

JULY, 1891.

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THE AMERICAN SOCIETY FOR THE EXTENSION OF
UNIVERSITY TEACHING,

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The interest and profit derived from the lectures will be greatly enhanced by a careful reading of the Play beforehand.

LECTURE I.

LOVE'S LABOR'S LOST.

The References are to Rolfe's Edition of Shakespeare.

Shakespeare's *Love's Labor's Lost* is, if not the *first*, among the first he wrote. Importance of studying the earlier plays :

1. Neglect of them entails incomplete knowledge of Shakespeare as a dramatist.
 2. Such study needful in order to trace the steps of his growth in dramatic power.
 3. This method secures the best preparation for appreciation of the later and riper products of his genius.
- It is the true introduction to Shakespeare.

Preliminary to considering *Love's Labor's Lost*, Shakespeare's relation to the romantic drama in England should be noted. Distinction between classical and romantic drama :

1. Shakespeare not the pioneer in the change from classical to romantic drama.* This distinction belongs to his predecessors—*e. g.*, Lyly, Peele, Greene, Marlowe, etc.
2. Shakespeare the full embodiment of what romantic drama contains in dramatic possibility.
3. Shakespeare's genius not independent of all other men. His study of Marlowe. His probable collaboration of some plays with other dramatists.

DATE OF LOVE'S LABOR'S LOST.†

The play, as we have it, "corrected and augmented" from a first draft ; changes twofold :

* The student is referred to Symond's *Predecessors of Shakespeare* for lengthened discussion of this topic.

† Furnival, 1588-9; Richard Grant White, 1588; Dowden, 1590; Drake, Delius and Fleay, 1591.

1. In forms of expression.
2. In additions. Knight names as among these: Biron's Speech, Act IV, Scene 3, ll. 284, *et seq.*; Rosaline's, Act V, Scene 2, ll. 831, *et seq.*

MARKS OF JUVENILE PRODUCTION.

1. Prevalence of rhyme.
2. Verse structure.
3. Use of stock characters.

LOVE'S LABOR'S LOST—A COMEDY OF AFFECTATION (Knight).

Romantic Comedy subdivides into comedy of life and comedy of character. This play belongs to the former category. The affectations are of two sorts:

1. Of Speech. Illustrations: Act I, Scene 1, Armado's Letter to King; To Jaquenetta, Act IV, Scene 1; Holofernes, Act IV, Scene 2, *passim*.
2. Of conduct of life. The King's project for a "little academe," Act I, Scene 1, ll. 1-20.

THE PLOT.

Shakespeare's usual method to work up into his plots material already at hand. The plot of Love's Labor's Lost, apparently his own invention, an exception to the rule. The plot, briefly outlined, discloses:

1. Holofernes, Sir Nathaniel, etc., as a sort of interlude: Act IV, Scene 2; Act V, Scene 1.
2. A sombre ending (Act V, Scene 2, ll. 710, *et seq.*), but no violation of the laws of comedy.

CHARACTERIZATION.

Shakespeare's growth to be mainly seen here. His power in later plays found in character-contrast and character-development. This play lacking in these elements of character presentation. The peculiarity of this play is its *grouping* of character.

First Group: King of Navarre, Biron, Longaville, Dumain, Don Armado.

Second Group: Princess of France, Rosaline, Maria, Katherine, Boyet.

Third Group: Costard, Dull, Moth.

Fourth Group: Sir Nathaniel, Holofernes. Some of the characters prototypes of characters more fully developed in later plays. Rosaline is developed into Beatrice, Biron into Benedick.

GENERAL ESTIMATE OF THE PLAY.

1. Its *exuberance* of comic humor. Incessant fusilade of wit in play on words, sometimes wearisome: Act II, Scene 1, ll. 180-224; Act III, Scene 1; Act IV, Scene 1, ll. 100-130.
2. Its satire of false idealism. Shakespeare generally has some underlying aim which touches on practical issues. Training must be according to nature, not against it: Act I, Scene 1, ll. 1-100.
3. A prophecy for the future Shakespearean comedy. *In dialogue*—rich in repartee—which gives so much life to comedy: compare with *As You Like It*, *Much Ado About Nothing*. *In infusing a gentle seriousness into the humor*: compare the close of the play with that of *Merchant of Venice*, *Tempest*, etc. *In creative power*, seen not so much in absolute originals as in the impartance of life to existing types—making them over into flesh and blood. Compared with Lyly's comedies.

TIME ELEMENT IN THE PLAY.*

Dramatic Action occupies two days.

Day 1: Acts I and II.

Day 2: Acts III, IV, V.

* P. A. Daniel, taken from his *Tables* in *Transactions of New Shakespeare Society Transactions*, 1877-9, also for other plays.

QUESTIONS.

1. State Shakespeare's relation to the romantic drama.
2. Show to what species of comic drama Love's Labor's Lost belongs.
3. Describe any two of the four groups of characters.
4. Explain the practical applications to life the play may be interpreted to make.

LECTURE II.

THE COMEDY OF ERRORS.

Comedy of Life subdivided into Comedy of Manners, and Comedy of Situation or Incident ; Farce, the lowest type of comedy, belongs to the last.

Is the Comedy of Errors, designated as *farce* by such critics as Coleridge and Prof. Dowden, properly so considered? Shakespeare "has in this piece presented us with a legitimate farce in exactest consonance with the philosophical principles and character of farce, as distinguished from comedy." (Coleridge.) Objection to this view. It must hold, however, in the main.

DATE OF THE PLAY.*

Determined both by external and internal evidence.

Former marks two limits :

1. "The Comedy of Errors, like to Plautus his *Menechmus*," was played by the players at Gray's Inn, December, 1594.
2. The line in Act III, Scene 2, l. 121, with the pun on France making war against the heir, apparently refers to the civil war in France begun in 1589.

The internal evidence consists of three peculiar items in verse structure :

1. Prevalence of rhyme, 380 rhymed lines to 1,150 unrhymed. (Fleay.)

* Furnival, 1589; Delius, Stokes and Dowden, 1591; Fleay, *circa* 1594.

2. Amount of "rime-doggerel," as it was called, *e.g.*, Act III, Scene 1, ll. 10-80.
3. Use of alternate rhyme, *e.g.*, Act III, Scene 2, ll. 29-52.

THE PLOT.

Borrowed from Plautus. The Latin as related to English comedy. Shakespeare's classical attainments. The Comedy of Errors a reproduction of the *Mænecchi* of Plautus. The changes introduced by Shakespeare in every way improve the plot, heightening the comic effect and almost transforming it.

1. The scene changed from Epidamnum to Ephesus for a purpose, hinted in Act I, Scene 2, ll. 95-105.
2. Shakespeare adds the two Dromios, with very important dramatic results :
 - (a) Increases the perplexity.
 - (b) Adds greater variety of incident.
3. Fuller handling of characters.
4. Introduction of serious element in beginning and close.

The student is referred to Stapfer's "Shakespeare and Classical Antiquity," pp. 141-156, for interesting discussion of the relation between the comedy of Plautus and that of Shakespeare.

STRUCTURE OF THE PLAY.

1. Background of pathetic and serious cast. Narrative of Ægeon in place of prologue. An epical element thus introduced : Act I, Scene 1.
2. First complication resulting from the double identity, when Antipholus of Syracuse mistakes Dromio of Ephesus for his own slave : Act I, Scene 2.
3. Second complication, when Antipholus of Syracuse is mistaken by Adriana, wife of Antipholus of Ephesus, for her husband, and is taken to dinner at her house in his stead : Act II.
4. Third complication, when Antipholus of Ephesus is refused admittance to his own house as an impostor, which brings on the "chain" incident : Act III.

5. Fourth complication, when Antipholus of Ephesus is arrested and then imprisoned as a lunatic in his own house, introducing the character of Dr. Pinch : Act IV.
6. Resolution of all perplexities. Final effect—epical in character—in the narrative of the Abbess, thus securing a setting of grave and pathetic nature for the comic action : Act V.

COMMENTS ON THE PLAY.

1. The excess of improbability heightens the comic effect. The two Dromios more than double this.
2. Shakespeare elevates the farce by two expedients :
 - (a) Introducing lyrical effect. The love of Antipholus of Syracuse for Luciana : Act III, Scene 2, ll. 29-50.
 - (b) Stories of Ægeon and his wife, the Abbess : Act I, Scene 2 ; Act V, Scene 1 to close.
3. Shakespeare embodies to some extent the element of contrast in characters. Antipholus of Syracuse with Antipholus of Ephesus. Dromio of Syracuse with Dromio of Ephesus. Luciana with Adriana.

TIME ELEMENT IN THE PLAY.

Dramatic action beginning Act I, Scene 2, is confined to one day, ending about 5 P.M.

QUESTIONS.

1. State the source of the Plot and the changes introduced by Shakespeare.
2. What is the effect produced by the beginning and close of the play ?
3. How has Shakespeare embodied the element of contrast in character ?
4. What is the relation of Act V to the preceding acts ?

LECTURE III.

THE TWO GENTLEMEN OF VERONA.

Date of the play. One of the earliest.* Shows traces of immature workmanship, but also advance on preceding comedies.

THE PLOT.

1. Composite in character. Incidents selected from different sources.
2. A new type of romantic comedy. Shakespeare's "earliest comedy in which a love-story is told in dramatic form."
3. His first portraiture of woman, in which the "tender and passionate history of a woman's heart" is unveiled.
4. The winding up too violent a strain on probability: Act V, Scene 4.
5. The central point—conflict of passion with friendship.

GENERAL CHARACTERISTICS OF THE PLAY.

1. Contains elements and characters afterward wrought out more fully in other plays.
 - (a) Compare Valentine's speech, Act V, Scene 4, ll. 1-20, with the Duke's in *As You Like It*, Act II, Scene 1, ll. 1-20.
 - (b) Compare Julia's review of her suitors, Act I, Scene 2, with Portia's—*Merchant of Venice*, Act I, Scene 2.
 - (c) Compare Julia's disguise with that of Viola, Portia, Rosalind and Imogen.
 - (d) Stress on forgiveness and repentance: compare close of the play with same in latest plays.
2. The introduction of the Fool, Launce, and his Dog.
3. Lyric element in song: Act IV, Scene 2.
4. Allusions to contemporaneous traits.
 - (a) Adventurous spirit: Act I, Scene 3, ll. 8-10.
 - (b) Travel as an education: Act I, Scene 3, ll. 15-16.

* Furnival, 1591-2; Dowden, 1592 3; Fleay, *circa* 1595.

5. Predilection for Italian life and characters in Shakespearean plays well illustrated in this.
6. The outlaw scenes: Act IV, Scene 1; Act V, Scene 3-4.

STUDY OF CHARACTERS.

Proteus.

- (a) His love—self-love. No genuine passion.
- (b) Character essentially base. Gradual development of this element.
- (c) Dissimulation—an essential ingredient in all Shakespeare's baser creations.
- (d) Contrasted with that of Valentine.

Julia.

Shakespeare's delight in such types.

- (a) Her womanly delicacy in the disguise.
- (b) Devotion to an unworthy object. This motive in woman emphasized by Shakespeare.
- (c) Equanimity under all the strains of the trying situations: Act IV, Scene 4, with Proteus; Act IV, Scene 4, with Silvia.
- (d) Contrasted with Silvia.

Launce.

The Fool in Shakespeare's plays. Is Launce, *pure fool* or humorist, which? The prototype of Gobbo in Merchant of Venice. Redeemed by touches of affection—compare Fool in Lear, contrasted with Speed.

Advance in this upon the two preceding comedies.

1. Verse structure more perfect.
2. Fuller characterization—lines cut deeper.
3. Dramatic tone more pronounced. Greater breadth of dramatic treatment.

TIME ANALYSIS OF ACTION.

Day 1: Act I, Scene 1 and 2.

Interval—indefinite.

Day 2: Act I, Scene 3; Act II, Scene 1.

Day 3: Act II, Scene 2 and 3.

Interval—Journey of Proteus to Milan.

Day 4: Act II, Scene 4 and 5.

Interval of a few days.

Day 5: Act II, Scene 5-6; Act III; Act IV, Scene 1.

Interval—Julia's Journey to Milan.

Day 6: Act IV, Scene 2.

Day 7: Act IV, Scene 3 and 4; Act V.

QUESTIONS.

1. Give a critical estimate of the Plot.
2. Show the allusions to contemporary English traits.
3. Analyze the character of Proteus.
4. In what particulars does this play show advance upon the two preceding comedies?

LECTURE IV.

THE MIDSUMMER NIGHT'S DREAM.

Belief in fairies, as shown in the folk-lore of the time. To embody this dramatically, the leading idea of this play. This could only be done by connecting the fairy world with human actors. These distributed in two classes:

1. Those moving in high circles: Theseus and Hippolyta, Lysander and Demetrius, Hermia and Helena. Act I, Scene 1.
2. Those belonging to rustic class: Bottom and his fellows. Act I, Scene 2.

A contrast thus secured, absolute in its nature

- (a) Between region of sentiment and that of comedy.
- (b) Between kings and clowns.

The realm of fairies then presented: Act III, Scene 1.

The fairy world also classified.

- (a) Royalty reflected in it—Oberon and Titania.
- (b) Their servants—Puck, etc.

In the remainder of the play, Act III to V, the intermingling of both the fairy and the human elements.

SHAKESPEARE'S METHOD

in the evolution of the drama is :

1. To dramatize the actual world, as disturbed by the miscarriage of human affections : Act I, Scene 1.
2. All this reflected in the world of Faerie.
3. The intervention of Faerie to set things right, resulting in deeper entanglement.
4. All resolved at last, however, by Fairy interposition.

CHARACTERISTICS OF THE DRAMA AS A WHOLE.

1. Richness in its poetic elements. The wonderful beauty of descriptive passages. Act II, Scene 1, ll. 80-117; ll. 120-131; ll. 145-171.
2. Use of contrasts—the natural and supernatural; the heroic and the clownish; the Titania's and Bottom's.
3. Art in which this is blended in a dramatic unity.
4. Characters still presented in pairs. Halpin's interpretation of Act II, Scene 1, ll. 153-165, considered.
Comparison between the *Midsummer Night's Dream* and the *Tempest*.

RESEMBLANCES IN DRAMATIC TREATMENT.

1. The human element morally disturbed in both by human causes.
2. The supernatural as mediator. Puck and Ariel.

DIFFERENCES.

1. Deeper tone in the *Tempest*. The experiences of life as affecting it.
2. Comic element differently handled.
3. The reconciliation of opposing elements so much profounder in its meaning.

TIME ANALYSIS OF THE PLAY.

Day 1 : Act I.

Day 2 : Act II-III, part of Scene 1, Act IV.

Day 3 : Remainder of play.

QUESTIONS.

1. How does Shakespeare proceed in his dramatization of the Fairy world?
2. Give the characteristics of the drama as to poetic element; as to contrasts.
3. What resemblances in dramatic treatment between this play and the *Tempest*?
4. What difference in the handling of the comic element as seen in the two plays?

LECTURE V.

KING RICHARD THE THIRD.

1. Historical drama as perfected by Shakespeare. The Chronicle Histories. Field covered by them in English history. Coleridge's view that historical drama must be national, considered.
2. Richard the Third belongs to the Marlowe-Shakespeare group.* Traces of the study of Marlowe found in it. Built on same line of dramatic structure.
3. Relation of the play to 1st, 2d and 3d Henry VI. The latter more than prologue. The delineation of Richard the Third's character in closing portion of Part 3d Henry VI.
4. Design of the play:
 - (1) The dramatic unfolding of absolute villainy. It is "total depravity" in dramatic form. To accomplish this, two things necessary:
 - (a) High intellectual and executive powers divorced from all goodness.
 - (b) An environment of largest scope for action.
 - (2) To unfold, on a corresponding scale for breadth and amplex, the Nemesis; the classic idea in the Nemesis.

* Date of play. Dowden and White, 1593; Furnival and Stokes, 1594.

- (a) This is done by a successive and cumulative display of its working.
- (b) By unexpected and improbable instruments.
- 5. In working out this design, there are some points introduced which seemingly transgress the laws of dramatic art.
 - (1) The wooing and winning of Lady Anne: Act I, Scene 2, ll. 43-204.
 - (a) Improbability.
 - (b) Revolting in itself.
 - (2) The successful urging of Queen Elizabeth to promote his suit for her daughter: Act IV, Scene 4.
 - (a) Superfluous.
 - (b) Repetition of former scene with Lady Anne.
 - (3) The introduction of Queen Margaret.
 - (a) An anachronism.
 - (b) Overweights the play with the curse.
- 6. The design of the play grasped in a true analysis of the character of Richard. Key to his character found in these lines from Henry VI; Part 3, Act V, Scene 6:

And this word—love, which greybeards call divine,
Be resident in men like one another,
But not in me; *I am myself alone.*

Salient points in his unique wickedness as developed by Shakespeare throughout :

 - (a) Dissimulation—a quality found in all Shakespeare's villains—here in its most subtle and powerful form.
 - (b) Sardonic humor—giving a ghastly air to the whole.
 - (c) Wicked intellect combining with wicked will, both of superlative strength, and both utterly separated from all sensibility and conscience.
 - (d) Absolute superiority to fear.- 7. General characteristics of the play :
 - (1) Absence of the lighter poetic touches. No relieving interludes.

- (2) Great number of striking dramatic situations.
- (3) Use of the supernatural. First introduction of ghost : compare with Fairy world in *Midsummer Night's Dream*. Both in folk-lore of the time.
- (4) Characters all drawn with sharp and firm strokes. Minor characters carefully wrought out—*e.g.*, Princes, Murderers.

TIME ELEMENT IN THE PLAY.

Day 1 : Act I, Scene 1 and 2.

Interval.

Day 2 : Act I, Scene 3 and 4 ; Act II, Scene 1 and 2.

Day 3 : Act II, Scene 3.

Interval.

Day 4 : Act II, Scene 4.

Day 5 : Act III, Scene 1.

Day 6 : Act III, Scene 2-7.

Day 7 : Act IV, Scene 1.

Day 8 : Act IV, Scene 2-5.

Interval.

Day 9 : Act V, Scene 1.

Interval.

Day 10 : Act V, Scene 2, and first half of Scene 3.

Day 11 : Remainder of play

QUESTIONS.

1. What is Shakespeare's relation to historical drama before his time ?
2. State his design in this play.
3. Does the wooing scene, Act I, Scene 2, ll. 43, 204, violate a true dramatic cast ?
4. Analyze the character of King Richard the Third as dramatized by Shakespeare.

LECTURE VI.

ROMEO AND JULIET.

1. English tragedy—how far developed when Shakespeare appeared. Shakespeare's first tragedy, *Romeo and Juliet*. Probably written in part as early as 1591. Put in final shape *circa* 1597.
2. The plot founded mainly on a poem by Arthur Brooks, *Romeus and Juliet*. This in the main closely followed. Three important variations, showing how Shakespeare could intensify dramatic effect by such changes.
 - (a) Time of action compressed from four or five months in the poem, to as many days.
 - (b) Transformation of Mercutio from a "mere courtier" into the gallant gentleman, full of wit and knightly parts.
 - (c) Paris dying at the bier of Juliet by the hand of Romeo.

The plot further noted for three points :

- (1) Mingling of the intensely romantic with the realistic in life.
 - (2) Replacing of a lower by a higher love dominating the being.
 - (3) Furnishes, in Friar Laurence, almost the sole *attractive* portrait of an ecclesiastic to be found in Shakespeare. Compare with Pandolph or Cranmer.
3. The leading dramatic purpose of the play, to exhibit love in its most romantic type and in its "star-crossed" issue.
 - (a) Begun in the realm of family strifes.
 - (b) Ended by death.

In carrying out this design, Shakespeare has emphasized the element of strife :

 - (a) By opening the play with the quarrel-scene between servants of the two houses: Act I, Scene 1.
 - (b) By the subsequent duel between Romeo and Tybalt: Act 3, Scene 1, ll. 118-132.

This is dramatically essential :

- (1) To mark the strength of the passion of the lovers for each other.
 - (2) To develop the heroic strain in their characters.
 - (3) To consecrate the power of an affection which at last reconciles such hates.
4. Shakespeare concentrates attention on the rapid growth and glowing intensity of the passion in Romeo and Juliet. The nature of Romeo's considered. That of Juliet—how different from the same affection in other heroines. Compare Miranda's for Ferdinand in the *Tempest*.
5. The realistic or everyday element in the plays :
- (a) The quarrels.
 - (b) The feasts. Act. I, Scene 5 ; Act IV, Scene 4.
 - (c) The nurse. Act I, Scene 3 ; Act 2, Scene 4 ; Act 4, Scene 5.
- This element is strongly accented by Shakespeare :
- (a) To hold the mirror up to nature. Extremes meet in life.
 - (b) To give the dramatic effect in bold contrasts.
6. Friar Laurence as the mediating element in the play. His character drawn with sympathetic hand. Not to be regarded as the spokesman of a moral lesson on moderation, and so point a moral for the play.
7. Minor characters all drawn with care. Shakespeare's growing power of character-drawing plainly shown, especially in Mercutio.

TIME ELEMENT IN THE ACTION.

Day 1 : Sunday, Act I ; Act II, Scenes 1 and 2.

Day 2 : Monday, Act II, Scene 3-6 ; Act III, Scene 1-4.

Day 3 : Tuesday, Act III, Scene 5 ; Act IV, Scene 1-4.

Day 4 : Wednesday, Act IV, Scene 5.

Day 5 : Thursday, Act V.

Day 6 : Friday, Act V, Scene 3 to end.

QUESTIONS.

1. How has Shakespeare secured a greater **dramatic effect** by variations from the original plot in Brook's **poem**?
2. What three points in the plot are specially **noticeable**?
3. Why is the realistic element in the play so **strongly** accented by Shakespeare?
4. The dramatic purpose in the part of **Friar Laurence**. Analyze his character.

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LECTURE II.

CHAUCER TO SHAKESPEARE.

Prose writers of the fourteenth century—Mandeville, Wyclif—Langland and the Vision of Piers Ploughman—Geoffrey Chaucer—the three periods of his life; the Canterbury Tales. Gower and Froissart. Caxton introduces printing. Chevy Chase and the Ballads.

LECTURE III.

ELIZABETHAN ENGLAND.

Great forces were operating in the sixteenth century —(1) the revival of learning, (2) the Reformation, (3) the contact with Italian culture, (4) the definition of English nationality against Spain and Rome.

The personality of the Queen. Edmund Spenser, "The Faery Queen." Sir Philip Sidney, the "Arcadia." Lyly and Euphuism. Bacon and Hobbes.

The dramatists. The evolution of the drama. Marlowe's part in the work.

Shakespeare.

LECTURE IV.

FROM ELIZABETH TO ANNE.

King James and the literature of his court. The post-Elizabethan singers—Robert Herrick, George Herbert, Wotton and Walton.

Royalists and Puritans. The Puritan influence in English letters. Marvell and Lovelace and Butler. Milton—his education; life at Horton; writing the minor poems; political service, "Paradise Lost."

"Glorious John Dryden." The broad, full stream of Elizabethan verse, pent in the narrow limits of the classical couplet. The development of lucid prose—Addison and Steele.

LECTURE V.

THE FRENCH REVOLUTION.

The influence of the French Revolution upon English writers. The eighteenth century a progress toward that event. From Pope to Gray, and from Gray to Burns.

Cowper leads the poets back to naturalism. "The Lake School"—Wordsworth, Coleridge, Southey, Lamb, De Quincey.

"The Radicals"—Byron, Shelley, Keats, Leigh Hunt and Landor.

LECTURE VI.

TENNYSON AND BROWNING.

The wane of the romantic movement. The rise of the "Tractarian" or "Oxford" movement (Cardinal Newman), Thomas Arnold and his Rugby pupils.

Some epoch-making books. Carlyle in 1832, Darwin in 1859, Ruskin in 1846, and Tennyson in 1850.

Browning's "Paracelsus," "Ring and the Book," "Fine at the Fair," "Dramatic Lyrics." His thoughtful interpretation of social problems; the eccentricities of his style.

The present aspect of English verse.

BIBLIOGRAPHY.

Bernhard ten Brink, "*Early English Literature*." Translated by Horace M. Kennedy. New York, Henry Holt.

Prof. Earle, "*Anglo-Saxon Literature*." London, Society for Christian Knowledge.

Thomas Arnold, "*Manual of English Literature*." London, 1877.

Stopford A. Brooke, "*Primer of English Literature*." D. Appleton & Co., New York.

Henry Morley, "*English Writers*." 7 vols. London, Cassell & Co., 1890.

Henry Morley, "*First Sketch of English Literature*."

Saintsbury, "*History of Elizabethan Literature*." London, Macmillan.

Gosse, "*History of Eighteenth Century Literature.*" London, Macmillan.

Donald Grant Mitchell, "*English Lands, Letters and Kings.*" 2 vols. New York, Scribner's Sons, 1890.

Longmans' "*Handbook of English Literature.*" By R. McWilliam. London, 1888.

EXERCISES.

I.

a. What literature corresponds most nearly with the Anglo-Saxon or Old English? And what was the position of the poet in early English society?

b. Why are the earliest poets of all countries anonymous?

What are the usual subjects of poetry in its earliest stage?

c. According to what laws were the poems of Caedmon and of Cynewulf written? Describe these laws.

d. What kind of poetical composition was introduced into England by the Norman Conquest? Describe some of the most notable examples.

II.

a. What are the chief merits of Chaucer's "*Canterbury Tales*," and what influence had Chaucer upon the English language?

b. What foreign influences shaped the literature of England between the Norman Conquest and the fifteenth century?

c. Give an account of the introduction of printing into England.

III.

a. Who were the earliest promoters of the revival of learning in England?

b. Write a sketch of the history of "blank verse" in English literature.

c. What movements co-operated to effect the rapid development of literature during the last quarter of the sixteenth century?

d. What part did Marlowe play in the evolution of the English drama?

IV.

a. Name some of the popular short lyrics of the post-Elizabethan days.

b. What grand principles upon which Bacon's "Novum Organum" is founded, lie at the base of all modern science?

c. What circumstances led to the choice of the "Fall of Man" as the subject of Milton's epic?

d. What revolution in literature succeeded the Restoration?

V.

a. What is meant by the "Lake School"?

What are the most important works contributed by the "Lake writers" to English literature?

b. In what ways did the French Revolution affect English literature?

VI.

a. Describe the rise of the Tractarian movement.

b. What is the significance of "In Memoriam" as a nineteenth-century poem?

c. Analyze Ruskin's and Carlyle's influence upon their time, and contrast the spirit of the two men.

[Series A]

UNIVERSITY EXTENSION LECTURES
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FOR THE
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SYLLABUS
OF A
COURSE OF SIX LECTURES
ON
POLITICAL ECONOMY.

BY
PROF. ROBERT ELLIS THOMPSON,
UNIVERSITY OF PENNSYLVANIA.

No. II,

Price 10 Cents.

WORKS OF GENERAL REFERENCE.

- Dr. J. K. Ingram's *History of Political Economy*, edited by Prof. E. J. James (New York, 1888).
- Dr. Luigi Cossa's *Guide to the Study of Political Economy* (London, 1880).
- Stephen Colwell's *Introduction to List* (*vide infra*).
- Adam Smith's *Inquiry into the Nature and Causes of the Wealth of Nations* (1776, and frequently).
- J. S. Mill's *Principles of Political Economy*, abridged and edited by Prof. J. L. Laughlin (New York, 1884).
- Wilhelm Roscher's *Principles of Political Economy* (New York, 1878).
- Dr. Henry Sidgwick's *Principles of Political Economy* (London, 1883).
- Prof. Alfred Marshall's *Economics* (2d Edition, London, 1891).
- Dr. Francis A. Walker's *Political Economy* (2d Edition, New York, 1887).
- Dr. E. B. Andrew's *Institutes of Economics* (Boston, 1889).
- Friedrich List's *National System of Political Economy*, translated by G. A. Matile. With an introduction by Stephen Colwell (Philadelphia, 1856).
- Dr. Henry C. Carey's *Social Science*, abridged by K. McKean (Philadelphia, 1869).
- E. Peshine Smith's *Manual of Political Economy* (Philadelphia, 1872).
- R. E. Thompson's *Elements of Political Economy* (Philadelphia, 1882).
- Dr. Van Buren Denslow's *Principles of the Economic Philosophy* (New York, 1888).

EXERCISES

For each week will be furnished by Prof. Thompson at the close of each lecture. All persons attending the lectures are invited to send written answers; they should be addressed to Prof. R. E. Thompson, University of Pennsylvania, and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. The exercises will be returned, with comments, at the "Class," when further explanations on the general subject will be made. All are invited to the class whether they have sent exercises to the lecturer or not.

LECTURE I.

THE PLACE OF POLITICAL ECONOMY AMONG THE SCIENCES.

The economic motive: Is it selfishness, or the desire of power through association? The development of the science: (1) The Mercantile School. (2) The school of Natural Liberty, its culmination in Adam Smith, and its decay into Pessimism. (3) The reaction in the "Historical" School. (4) The Nationalist School founded by List. Its position in America and Germany. The question of method. Bagehot's treatment of it; influences of mechanical and biological conceptions.

REFERENCES.

Ingram, Cossa, Colwell and Andrews (*ut supra*); Walter Bagehot's *Postulates of English Political Economy* in his Works, Vol. V; also separately (New York, 1885); Prof. Alfred Marshall's *Present Condition of Economics* (London, 1885).

LECTURE II.

THE ECONOMY OF LAND.

The earliest land-tenures, and their partial abolition. The expediency and justice of private ownership. The unearned increment. Ricardo's "law of rent." The alleged "law of diminishing returns." Land nationalization and its consequences. The history of land settlement. Large and small farm systems.

REFERENCES.

Henry C. Carey's *The Past, the Present and the Future* (Philadelphia, 1848); Dr. F. A. Walker's *Land and its*

Rent (Boston, 1883); David Ricardo's *Principles of Political Economy and Taxation* (London, 1817); Henry George's *Progress and Poverty* (New York, 1879); W. T. Thornton's *Plea for Peasant Proprietors* (London, 1848); Mill (*ut supra*); Prof. Laveleye's *Primitive Property* (London, 1878).

LECTURE III.

LABOR AND CAPITAL.

Definitions. Relations of wages to profits. The wage-fund theory. The Socialist attack on the wages system, and the abolition of "social risk." Forms of conflict: Trades' unions, strikes, boycotts and lockouts. Measures of harmony: arbitration or conciliation, co-operation, profit-sharing, compulsory insurance. The "eight-hour" problem and the effects of machinery. The influence of national and moral ideals on the future of the laborer.

REFERENCES.

Prof. Thorold Rodgers' *Six Centuries of Work and Wages* (New York, 1884); W. T. Thornton's *On Labor* (London, 1870); Francis A. Walker's *The Wages Question* (New York, 1876); William B. Weedon's *The Social Law of Labor* (Boston, 1882); Ed. Atkinson's *The Distribution of Products* (New York, 1885); His *Margin of Profits* (New York, 1887); Dr. T. E. Brown's *Studies in Modern Socialism and Labor Problems* (New York, 1886); Prof. R. T. Ely's *The Labor Movement in America* (New York, 1886); Prof. E. Laveleye's *The Socialism of To-Day* (London, 1884); Arnold Toynbee *The Industrial Revolution* (London, 1884, and New York, n. d.); *The Fifth Annual Report of the Connecticut Bureau of Labor Statistics* (Hartford, 1890); N. P. Gilman's *Profit-Sharing between Employer and Employee* (Boston, 1889); Bemis, Shaw and others' *History of Co-operation in the United States* (Baltimore, 1888).

LECTURE IV.

MONEY.

Its early history. It is the instrument of association as well as of exchange. How far a standard of value. Its three forms—coin, paper and credit—and their comparative utility. The Silver problem, and its international solution. The functions of a bank. The defects of our banking system. The Scotch system. The land and people's banks of the Continent. The demands of the western farmer and the southern planter, and how to meet them.

REFERENCES.

Carey, Peshine Smith, Thompson (*ut supra*); Stephen Colwell's *Ways and Means of Payment* (Philadelphia, 1859); Prof. E. Laveleye's *Le Marche Monetaire* (Bruxelles, 1855); His *Fallacies Respecting Money* in *The Contemporary Review* for November and December, 1871; Sir Walter Scott's *Letters of Mordecai Malagrowthier on the Proposed Changes in the Currency* (Edinburgh, 1826); Thomas Tooke and William Newmarch's *History of Prices* (six volumes, London, 1838–58); R. H. Patterson's *Economy of Capital* (Edinburgh, 1864); His *The Age of Gold* (two volumes, Edinburgh, 1885); Prof. J. L. Laughlin's *History of Bimetallism in the United States* (New York, 1886); Dr. Van Buren Denslow (*ut supra*); S. Dana Horton's *The Position of Law in the Doctrine of Money* (London, 1882); His *Silver in Europe* (New York, 1890).

LECTURE V.

TAXATION.

Its early history and later methods. Adam Smith's axioms, and their value. Divided into direct taxes (on land, incomes, inheritance) and indirect (customs, excises, licenses). Taxation of natural monopolies. Taxa-

tion to discourage consumption. The "single-tax" theory. The "line of least resistance." American inequalities under the distribution of National and State responsibilities and revenues. The remedy in distribution of the Nation's surplus.

REFERENCES.

Prof. A. S. Bolles' *Financial History of the United States* (three volumes, New York, 1883-86); Prof. R. T. Ely's *Taxation in American States and Cities* (New York, 1887); J. W. Kearney's *Sketch of American Finance* (New York, 1887); Wm. H. Jones' *Federal Taxes and State Expenses* (New York, 1887).

LECTURE IV.

COMMERCE AND INDUSTRY.

Commerce based on association. Its early stages. The functions of the trader. Its national advantages and political influence. Carey's doctrine of "local centres." The arguments for unrestricted commerce between nations. Inequalities of national condition and their economic effects. The controversy over Free Trade and Protection. American experience of both policies. The effect of Protection on prices, and indirectly on wages. The efficiency of home competition.

REFERENCES.

Adam Smith, Mill, Walker (*ut supra*); Prof. R. T. Ely's *Problems of To-day: A Discussion of Protective Tariffs, Taxation and Monopolies* (New York, 1888); Prof. A. L. Perry's *Principles of Political Economy* (New York, 1891); Prof. W. G. Sumner's *Protectionism* (New York, 1885); J. Schoenhof's *The Industrial Situation* (New York, 1885); Prof. F. W. Taussig's *Tariff History of the United States* (New York, 1890); H. C. Carey's *The Harmony of Interests* (New York, 1852); Henry M. Hoyt's

Protection versus Free Trade (New York, 1886); Prof. S. N. Patten's *The Economic Basis of Protection* (Philadelphia, 1890); David Hall Rice's *Protective Philosophy* (Boston, 1890); R. E. Thompson's *Protection to Home Industry* (New York, 1886); His *Ireland and Free Trade: An Object Lesson in Political Economy* (Philadelphia, 1888).

[Series A]

UNIVERSITY EXTENSION LECTURES
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FELIX E. SCHELLING, A.M.,

PROFESSOR OF ENGLISH LITERATURE, UNIVERSITY OF PENNSYLVANIA.

LECTURES.

- I.—The Evolution of the Novel.
- II.—Sir Walter Scott, and the Historical Romance.
- III.—Charles Dickens, and the Novel with a Purpose.
- IV.—William Makepeace Thackeray, and Social Satire.
- V.—George Eliot, and the True and False Realism.
- VI.—Nathaniel Hawthorne, and the Idealistic Romance.

No. 12.

Price 10 Cents.

BOOKS.

THE Lecturer would suggest the reading of the following novels in connection with this course, and in the order given :

I.

- (1) *The Vicar of Wakefield.*
- (2) *Ivanhoe.*
- (3) *Pickwick Papers.*
- (4) *Vanity Fair.*
- (5) *Romola.*
- (6) *The Scarlet Letter.*

II.

- (2) *The Heart of Midlothian.*
- (3) *David Copperfield.*
- (4) *Henry Esmond.*
- (5) *Silas Marner.*
- (6) *The Marble Faun.*

III.

- (2) *The Monastery.*
- (3) *A Tale of Two Cities.*
- (4) *The Newcomes.*
- (5) *Middlemarch.*
- (6) *The House of Seven Gables.*

In general, the lecturer would advise a total neglect of biographies and critical essays, as it is preferable to read the authors rather than to read about them. He holds himself in readiness, however, to advise as to further reading.

The Novels included in this course may be had at very low rates in many excellent editions : Scott (*Astor Library* or *Lovell's Oxford Series*), at from 30c. to 50c.; Dickens (*Alta Edition*), at 30c.; Thackeray, George Eliot and *The Vicar of Wakefield* (*Lovell's Oxford Series*), at the same price. Hawthorne is published in the *Little Classics Edition*, at 75c. per volume.

EXERCISES.

Exercises on the lecture of each week will be found at the end of syllabus. Answers in writing, to not more than two questions each week, are invited from all attending the lectures. A signature, not necessarily the writer's, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. Answers should be addressed to Professor F. E. Schelling, College Department, University of Pennsylvania, Philadelphia, and should be sent to arrive at least forty-eight hours before the following lecture. The exercises will be returned at the Class with comment and such further explanation of the general subject as may be required. All are invited to the Class, whether they have sent in exercises to the lectures or not.

MODERN NOVELISTS.

LECTURE I.

THE EVOLUTION OF THE NOVEL.

The Novel is a literary production, belonging to the general class, Fiction. It differs from ordinary Narrative Fiction in that it involves the portrayal of character as well as the narration of event ; from Romance, that it excludes the supernatural. Like the Literary Drama, the Novel is an art product, not a mere matter of amusement : both develop the story through character and not alone through inventive plot. The Novel is the legitimate descendant of the Drama ; resulting from (1) an attempt to break through the limitations of dramatic representation ; (2) an increase in the numbers and intelligence of the reading public ; (3) a recognition of *the man* as opposed to his rank, circumstances or surroundings. The evolution of the Novel has gone hand in hand with the evolution of the individual : the Novel is hence the most democratic product of literature, as it is freest in form, and based on the appeal of individual traits to universal sympathies. On reading a work of fiction ask yourself : (1) If you remember the characters or the incidents ? If the former, the work is a Novel ; if the latter, it belongs to some other class of Fiction. (2) Are the characters such as produce in your mind the effect of real human beings ? If so, within certain limitations, the novel is a good one ; if not, the work is at least not successful as a Novel.

Fiction has always existed ; the Novel is of late growth. Nature of the early Romances, their objective characteristics. Elements of the later novel in Shakespeare's

time mostly to be found in the drama ; plays and stories of intrigue. Daniel Defoe transplants these subjects to low life, and becomes the founder of realism in modern fiction (1719-28). The classic English novel took its rise in the works of Richardson, Fielding and Smollet, continuing in Sterne and Goldsmith (each the author of one novel), a period of thirty years (1741-1771). The novels of Samuel Richardson (1741-54), are a direct protest against the absurdities of the old Romances ; they dismiss the improbable, and seek with minute and faithful realism to show that human nature is interesting and deserving of attention as well in persons of humble birth as in princes. These novels mark an era in (1) their attempted fidelity to nature, and (2) in their recognition, in an avowed moral purpose, of the basis of art in morals. The novels of Henry Fielding (1742-1751), form a higher product of art (1) because of their truer, if less minute, realism ; (2) because their moral purpose, though present, is less obtrusive ; (3) because of their tone of healthier sentiment, and (4) because their author has exercised the highest qualification of the true artist selection. Lawrence Sterne (*Tristram Shandy*, 1759-69), is a sentimentalist in whom all plot and action is sacrificed to the minute portrayal of character and feeling. Goldsmith's *Vicar of Wakefield* (1766) sought to recombine the elements of action, characterization and sentiment. Other elements of the modern novel are (1) False Realism and a tendency toward (2) Caricature, already beginning to show in the work of Smollet (1748-1771) ; (3) the Revival of Mediæval subjects (*The Castle of Otranto*) ; (4) Idealism still remained locked in the earlier romances, and (5) Psychology was reserved for the nineteenth century.

Realism and Idealism. Realism is fidelity to what nature is ; Idealism, fidelity to what nature is striving to become. Realism is nature interpreted by the senses ; Idealism is nature interpreted by the mind. As all art is dependent upon symbolism, absolute realism is not art,

because absolute realism cannot be symbolic. (A photograph or a wax figure is more realistic than an etching or a marble statue.) Absolute idealism—if possible—is not art, because the symbol represents nothing. Realism and Idealism are then inseparable, and while their proportion may vary in a given product, the absence of either is the destruction of art.

LECTURE II.

SIR WALTER SCOTT, AND THE HISTORICAL ROMANCE.

(b. 1771—*Waverley*, 1814—d. 1832.)

Early tastes and studies of Scott: *Goetz von Berlichingen* and the *Minstrelsy of the Scottish Border*. The new Romanticism a result of the French Revolution; its degeneracy into sentimentalism; Romanticism takes a healthy tone in Scott. His personal characteristics; the passion of a life. Scott's narrative verse no evidence of versatility.

The Waverley Novels (1814–1830) mark an era in English literature (1) as the first successful attempt at the historical novel; (2) from their harmonious blending of the elements of the novel and the romance; (3) because their amazing popularity created fiction into a new power in literature.

The historical novel is an attempt to produce a group of fictitious characters acting in the environment of a previous age. (1) Historical personages should not be chosen for prominent characters, as such choice involves either a reiteration of history or a manifest falsification of fact. (2) Character should be created in keeping with the historical background; great and small anachronism. (2) The work should be dramatic but not theatrical. *Ivanhoe* examined as an Historical Romance. Scott's treatment of the Past; his Romanticism a bar to absolute success in the Historical Novel; his characters historically unreal. Why Scott's heroes and heroines are conventional. His roman-

tic sensibility always tempered by good sense ; his avoidance of unnecessary realism. Scott the prince of narrators. His radiant optimism. Carlyle's stricture on the "lack of a serious motive" in *The Waverley Novels*. Is pleasure a sufficient motive in Art ?

LECTURE III.

CHARLES DICKENS, AND THE NOVEL WITH A PURPOSE.

(b. 1812—*The Pickwick Papers*, 1836—d. 1870.)

Poverty and struggles of the boyhood of Dickens ; his schooling as a Parliamentary reporter and newspaper writer. Circumstances attending the publication of *The Pickwick Papers*. Dickens's American visit, and his treatment of America. The dramatic quality of his readings.

The chief trait of Dickens is the wealth of his imagination. This leads him (1) to an apprehension of the minutest detail ; (2) to writing with more attention to the present topic than consideration of the total effect—hence his loosely-constructed plots ; (3) into the spirit and form of poetry ; (4) and into the fantastic and grotesque, and (5) into caricature. Illustration of these points.

Dickens's creations are "vivification of characteristic ;" his characters go about with a label attached, and do not grow under his hands. His method of art is pre-eminently that of caricature. The incongruity of caricature acting as character one of the sources of the humor of Dickens. His power of sentiment, and frequent want of self-control in pathos and humor. The failure of his love scenes.

Charles Dickens a conscious moralist : his choice of subject ; the purity and delicacy of his realism ; his actual service to the cause of humanity. Is the novel with a purpose a legitimate form of art ? The literature of knowledge and the literature of power. Didacticism and literature.

LECTURE IV.

WILLIAM MAKEPEACE THACKERAY, AND SOCIAL SATIRE.

(b. 1811—*Vanity Fair*, 1847—d. 1863.)

Thackeray's sensitive childhood and indolent youth. His early studies in Art and work on the London magazines. Pride and brusqueness the mask of a diffident nature; his horror of autobiography. Doubt of his own ability, and questionings as to public appreciation. Thackeray and Dickens contrasted. The former's verse not highly imaginative. Novels, lectures, editorship.

The basis of Thackeray as a novelist consists in an extreme, though prevailingly healthy, sensibility, which enabled him to copy life as it was, and see through its mere appearances. Thackeray satirizes not by caricature or exaggeration, but by telling more of the truth than most people see; by insinuating the existence of foibles with consummate tact and intuition of motive, and then holding them up to compassionate ridicule. Thackeray is a satirist, not a cynic; he is musingly skeptical of many things which most men accept; he is irritable in his hatred of snobs; he is never bitter or misanthropical.

Thackeray is a faithful realist, intent to hold up the mirror to society, to paint real men and women in the life that he has known. Hence none of his characters are free from human frailty; none of his novels present cloudless sunshine. His heroes are not dependent for their existence on heroic traits, but on the effect of their surroundings upon inherent traits. Thackeray's characters grow under his hands (see Pendennis and Clive Newcome). Thackeray, an idealist in his worship of purity and innocence of heart, and in his sense of artistic selection. His critical taste not less than his creative taste. In the hands of Thackeray the novel became a higher production of art.

LECTURE V.

GEORGE ELIOT, AND THE TRUE AND FALSE REALISM.

(b. 1819—*Adam Bede*, 1859—d. 1880.)

Education of George Eliot (Mary Ann Evans); literary and philosophical studies. *The Westminster Review*. George Henry Lewes. George Eliot's appearance as a writer of fiction; her gifts and peculiar training for the avocation. The discernment of Charles Dickens as to the sex of the author of *Adam Bede*. The position of woman in literature. The lady-novelist. Is to write well, to write like a man?

The distinctive traits of George Eliot as a writer are (1) her Realism, and (2) her Psychological Insight into character. Her Realism differs chiefly in intensity from that of other great novelists, consisting not only in fidelity to nature, but in an equally unswerving fidelity to fact, to right and immutable law. She sketched not only from nature without, but from the heart within. Human feeling more important to her than human action. In her Psychological Insight into character, George Eliot has created a new era in the history of fiction. This characteristic is based on her own rich experience, and on a broad human sympathy. In this broad sympathy and its consequence, the novelist's impartiality towards the creatures of her imagination, George Eliot most nearly approaches Shakespeare. Neither caricature, satire, romanticism, the personal accent or didacticism interfere with the truth and art of George Eliot as a novelist. The highest type of moralist, a true artist.

The True and the False Realism. Shakespeare the type of True Realism, as he is the type of the Ideal. Virtue is more real than vice, health more real than disease, hence the "Realism" of the Naturalist School of Novelists is false, because it deals with abnormal forms, with what nature has by accident become, not with what nature is. Such "Realism" is untrue to nature, science and art.

LECTURE VI.

NATHANIEL HAWTHORNE, AND THE IDEALISTIC ROMANCE.

(b. 1804—*Scarlet Letter*, 1850—d. 1864.)

Puritan extraction of Hawthorne; his family; the prosaic surroundings of his youth; its undercurrent of romance. Influence of Puritanism on literature not wholly destructive. The artistic spirit of Hawthorne evolved largely by force of contrast. His early readings in Bunyan, Rousseau and *The Newgate Calendar*. Influences of Scott and Godwin. The advantages of solitude; the difficulties of authorship.

Hawthorne an Idealist; in method romantic, in subject realistic. He seeks an escape from the commonplace by an appeal to the elements of romance which exist in even the most unpromising materials. His method is indirect, describing things by suggestion rather than by delineation, in their effects rather than in themselves. Though not wanting in dramatic power, he prefers to paint in the less vivid colors of twilight; to appeal indirectly to the sentiments rather than directly to the emotions. (Hawthorne contrasted with Charles Read.)

Hawthorne combines the qualities of the artist with those of the speculative moralist; the combination always produces Allegory. Hawthorne's power of Allegory compared with that of Bunyan. The former's treatment of the supernatural leaves the reader to his own interpretation, and thus avoids unduly exciting his credulity. In his recognition of the innate and hidden motives of man's nature, as well as of the superficial ones which depend upon environment, Hawthorne has done for the Romance of Scott what George Eliot has done for the Novel of Dickens and Thackeray. The delicacy and weirdness of the fancy of Hawthorne; his humor more poetical than that of Thackeray, and less apt to transcend the limits of good taste than that of Dickens. The vague

ness of much of the character-drawing of Hawthorne dependent upon his method of analysis, which is speculative rather than scientific. Hawthorne, a man of faith, a worshiper of beauty, the highest form of truth.

EXERCISES.

I.

1. Construct a brief sketch of the plot of the *Vicar of Wakefield*.

2. Write out three passages from any one of the novels mentioned in this lecture which you have read, illustrating what you consider his most characteristic traits as a writer.

3. What do you understand by Realism and Idealism in literature?

II.

1. What is meant by Scott's romantic sensibility?

2. Select three passages from your reading of Scott, illustrating his narrative power, his artistic taste and his delineation of character.

3. Do you consider pleasure a sufficient motive in art?

III.

1. Explain the meaning of the expression "vivification of character," and illustrate from your reading of Dickens.

2. Write out three passages of Dickens, illustrating respectively his power of pathos, his poetical fancy and his grotesqueness.

3. Do you consider the novel with a purpose defensible?

IV.

1. Explain how the sensibility of Thackeray's disposition accounts for the principal traits of his genius.

II

2. Compare Scott's and Thackeray's treatment of the historical novel, as exemplified in *Ivanhoe* and *Henry Esmond*, or others of their works.

3. Do you esteem Thackeray a cynic?

V.

1. In what respects has George Eliot been compared to Shakespeare?

2. Write out a brief sketch of the character of Tito Melema, Silas Marner, or Tertius Lydgate.

3. Do you think that the psychological character of George Eliot's novels has destroyed their artistic excellence?

VI.

1. What do you consider the effect of Puritanism on literature?

2. Compare Hawthorne's treatment of the supernatural with that of Scott. (*The Monastery*, *The House of Seven Gables*, or *The Marble Faun*.)

3. In what sense does Hawthorne combine certain qualities of Scott and George Eliot? Illustrate.

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SYLLABUS
OF A
COURSE OF SIX LECTURES
ON
CENTRAL EUROPE
IN THE
NINETEENTH CENTURY.

BY
E. P. CHEYNEY, A.M.,
Assistant Professor of History, University of Pennsylvania.

- I. The First Half of the Century
- II. Bismarck, and the Rise of Prussia
- III. Bismarck, and the Unity of Germany
- IV. Louis Napoleon, and the Second French Empire
- V. Thiers, and the Third French Republic
- VI. Modern Italy

No. 13.

According to custom, under the University Extension system, a class will be formed of those who wish to enter more fully into the work than those do who simply attend the lectures. This class will meet immediately after each lecture, and informal discussion of the subject of the course will be carried on.

Members of the class and others are invited to send to the lecturer, at the University of Pennsylvania, papers on any of the subjects indicated in the questions, at any time during the continuance of the course, and these will be returned with comment as soon after receipt as practicable. Those who do satisfactory work in this writing of papers will be eligible to the examination at the close of the course, and students who pass this examination successfully will be awarded a certificate of the University Extension Association.

It has not been the aim to give a complete list of works of reference, but only to name such books and other sources of information as are both accessible and interesting, and can be read during the same period as the course of lectures. If any students wish to read further in any portion of the subject, the lecturer will be glad to give them advice.

THE RECENT HISTORY OF CENTRAL EUROPE.

The object of the course is to trace the political growth of the three central European countries, France, Germany and Italy, during the last half-century, and to find the origin of the principal elements of their present political condition. The great movement in the political history of these countries has been two-fold :

1. The increasing control of the Government by the people; and
2. In the case of Italy and Germany, the formation of a united nationality out of a group of disunited states.

References to special works will be given under each lecture. The following refer to the general history of the period :

Fyffe's "History of Modern Europe," 3 vols. Only the last two volumes refer to the period of this course.

Müller's "Political History of Recent Times." Devotes an inordinate amount of space and admiration to Germany, but otherwise excellent.

LECTURE I.—THE FIRST HALF OF THE CENTURY.

The Boundaries of the Nations.

The political divisions of Europe, during the first half of the century, were those arranged at the Congress of Vienna in 1815, at the close of the Wars of the French Revolution and of Napoleon. France was a compact, centralized monarchy, including, in addition to its present boundaries, Alsace and Lorraine.

Germany was a loose confederation of 34 states of different sizes and forms of government. It included two great powers, the Kingdom of Prussia and the Empire of Austria; four other kingdoms, Saxony, Hanover, Bavaria and Würtemberg; twenty-four duchies, grand duchies and principalities, and four free cities.

The Italian Peninsula was occupied by eight **separate** states, among which there was no union whatever. **The two** provinces in the northeast, Venice and Lombardy, belonged to Austria; in the northwest was the kingdom of **Sardinia** or Piedmont; in the centre were the duchies of **Parma**, Modena and Lucca, the grand duchy of Tuscany and **the** States of the Church; and in the south was the **Kingdom of** Naples.

The Forms of Government.

France was a constitutional monarchy, but the **right of** voting was very much restricted, and the control of **the** government was practically in the hands of a narrow **class**. In most of the states of Germany, and in all of Italy, government was an absolute monarchy.

The Growth of Discontent.

The priests, and the aristocracy generally, upheld the existing governments, and during the early part of the century, at least, the lower classes, peasantry and artisans, were under their influence. In the middle classes a growing element of discontent existed. Reforms wished for by this party gradually became defined about as follows :

- (1) Personal freedom.
- (2) A written constitution.
- (3) Representative assemblies.
- (4) General right to vote.
- (5) Taxes laid by assembly, not by King.
- (6) Freedom of the press.
- (7) Abolition of class privileges.
- (8) Subordination of the King to the Constitution.

In Germany and Italy to these was added a strong desire for national unity. In 1820 and 1821 risings occurred in Spain, Sicily, Naples, Piedmont and some of the German States. These were temporarily successful in causing the introduction of liberal forms of government, but were put down in a few months by the intervention of foreign despotic powers. In 1830 revolutions again occurred in France, Central Italy, several of the smaller states of Germany,

Belgium and Poland. These also failed of ultimate success, except in Belgium and France, and the new government introduced into the latter failed to satisfy the great body of the nation.

The Storm of Revolutions in 1848.

July, 1847, Pope's concessions in Rome; 1848, January 12th, Sicilian rising; January 29th, Constitution of Naples granted; February 4th, Constitution of Tuscany promised; February 7th, Constitution of Piedmont promised; February 22d-24th, Revolution in Paris; March 2d, Bavaria; March 13th, Vienna; March 16th, Berlin; March 18th, Milan; March 22d, Venice; April 16th, Baden; July 12th, Prague. Accompanying the revolutions in Germany and Italy were movements for attaining unity. In Germany this was attempted through the meeting of the "Frankfort Parliament," and the formation of a constitution which it was hoped all the individual states would accept. In Italy it took the form of a war to drive the great despotic power, Austria, out of the peninsula, led by the King of Sardinia, and joined in by the troops of the various revolted Italian States.

In each one of the countries where revolutions occurred in 1848, the movement rapidly fell under the control of the most extreme liberals, then the sovereigns and their advisers took a more determined attitude of opposition, and finally, with the help of the troops, dissolved the new assemblies, sent away their liberal ministries, and restored a more or less despotic regime. At the same time the Frankfort Assembly was weakened by the withdrawal of the representatives of one state after another, and finally dissolved by force. The German Constitution adopted by it never came into use.

In Italy the Sardinians and their allies were finally defeated by the Austrians at Navara, and forced to retire to their own province. With the help of either Austria or France, all the states of Italy were again put under their old masters. The movement of 1848 had failed in both of its efforts, freedom and unity.

REFERENCES.

Maurice, "The Revolutionary Movement of 1848-9;" Silvio Pellico, "My Ten Years Imprisonment;" Mrs. Browning's "Casa Guidi Windows;" Lowell's "Kossuth," "Lamartine" and "Ode to France."

QUESTIONS.

1. What difficulties in the way of a closer union existed in Germany in 1848, that did not exist in the United States in 1787?
2. What moral or historical reason is there for the fact that liberalism and nationality went hand in hand during the first half of this century?
3. Describe the organization of the German Confederation in the first half of this century.
4. Give biographical sketches of Silvio Pellico and Daniel Mouin.

LECTURE II.—BISMARCK AND THE RISE OF PRUSSIA.

Bismarck's Entrance into Political Life.

The "United Landtag" of Prussia was formed in 1847, by Frederick William IV, as a concession to the demands of the Liberals for a representative assembly. Otto Edward Leopold von Bismarck Schönhausen, born in Prussia, in 1815, became a member of this body.

*The Man and his Training.**The Revolution in Prussia.*

The King first conceded the demands of the Revolutionists, in March, 1848, and called a Constitutional Convention, then he resisted their growing claims, and finally dissolved the convention. The King, however, promulgated a constitution himself, which after several changes became the constitution of Prussia which now exists.

B. a Member of the Bundestag or Diet, 1851-9.

After the dissolution of the "Frankfort Parliament," in 1849, several other schemes for German unity were proposed, but none gained acceptance. In 1850, Austria pro-

posed a return to the old Diet, such as it had been from 1815 to 1848, and to this Prussia was forced to consent at the Treaty of Olmütz, November, 1850, though it involved her retirement from her position of prominence of 1848, and humiliation before Austria. The Bundestag was a body of representatives of the sovereigns of the various States of the German Confederation.

B. *Prime Minister of Prussia, 1862-1889.*

Frederick William IV died in 1861, and William I came to the throne. Born and bred a soldier, he was determined to reorganize the Prussian army. His plan was compulsory military service for all for 7 years, 3 years in active service, 4 years in the reserve; then 5 years more in the militia. The lower house of the Legislature resisted this policy, while the upper house yielded to the wishes of the King. To help him in the contest the King called B. to be Prime Minister.

The Schleswig-Holstein Question.

Prussia and Austria entered into a war jointly to prevent Schleswig and Holstein from being incorporated into Denmark. They forced the latter to hand over the two provinces, but immediately had differences of opinion as to the disposition to be made of them. These contentions finally led, in 1866, to the dissolution of the German Confederation.

REFERENCES.

Lowe's "Life of Bismarck," 2 vols.

Simon's "Emperor William and his Reign," 2 vols.

"Bismarck in Private Life," *Harper's Magazine*, July, 1884.

QUESTIONS.

1. What was the Schleswig-Holstein Question?
2. Why does a Liberal political party naturally oppose a strong military system?
3. Analyze Bismarck's character.
4. Describe the Prussian military system.

LECTURE III.—BISMARCK AND THE UNITY OF GERMANY.

The Civil War and the Peace of Prague.

In the civil war which followed the dissolution of the Confederation, fought between Prussia and her allies in the Confederation on one side, against Austria and her allies on the other, the victory was soon decided in favor of Prussia by the great battle of Königgratz or Sadowa—"the seven weeks' war." By terms of the treaty Austria was to retire from the German Confederation altogether, and to put no obstacle in the way of some form of reorganization, under the leadership of Prussia.

The North German Confederation, 1867, was then formed, including all the countries of Germany except Austria, now permanently excluded, and the four States of the South, Bavaria, Würtemberg, Baden and Hesse-Darmstadt, which became independent countries in Europe. Prussia was the leading State of the new confederation, and the Prussian King its chief executive. Bismarck became Chancellor of the Confederation. Two bonds existed between the North German Confederation and the South German States, the *Zollverein* and the secret military treaties. German unity was half gained.

*The Struggle with France, 1870-71.**The Formation of the Empire, 1871.*

In the war with France the four South German States fulfilled their treaty obligations and fought side by side with the troops of the North German Confederation. During this period obstacles to union faded away, the four states joined the Confederation, and the King of Prussia took the title of German Emperor. German unity was accomplished.

The New Empire.

Political parties.

The policy of the Government.

Foreign Relations, the league of the three Emperors,
the Triple Alliance, European peace.

Colonies and the Navy.
 The protective tariff.
 The gold currency.
 The contest with the Church.
 The contest with Socialism.
 Bismarck resigns.
 Present Germany.

REFERENCES.

Von Sybel's "Founding of the German Empire," 2 vols.
 Fay's "The Three Germanys," 1 vol.
 "Kaiser Wilhelm," in *Harper's Magazine*, May, 1884.
 "The German Empire," in *Harper's Magazine*, Sept., 1881.

QUESTIONS.

1. Give a description of the successful accomplishment of unity in Germany.
2. Why could not unity be attained in Germany while Austria remained in it?
3. Compare the gains with the losses of Germany arising from the fact of her unity being accomplished in the way it really was, instead of in some other conceivable way.

LECTURE IV.—LOUIS NAPOLEON AND THE SECOND FRENCH EMPIRE.

The Second Republic, February 24th, 1848.

The Struggle with the Populace.

The Constitution.

A single legislative body, elected for three years by universal suffrage; a President, similarly chosen for four years, and not eligible for re-election.

The First President.

Louis Napoleon, nephew of the great Napoleon, born 1808; his early life in exile; but twice, 1836 and 1840, made efforts to seize the throne of France.

The Coup d'État and the New Constitution.

The Empire and its Policy.

Internal brilliancy and material development, external

wars and schemes of acquisition. The occupation of Rome, 1849; the Crimean war, 1854; the Italian war, 1859; the Mexican Expedition, 1861; the Luxemburg Question, 1865.

Growing Opposition in France.

The Liberals and the Radicals.

The Constitutional Amendments, 1868-70.

The vote of Confidence.

REFERENCES.

Duruy's "History of France," 1 vol.

"France, her Emperor," in *Harper's Magazine*, April, 1853.

Lowell's "Villafranca."

QUESTIONS.

1. Why has France had so many forms of government within the last century?
2. Give an account of the life of Louis Napoleon.
3. Why did Louis Napoleon take the title of Napoleon III? Find out about the person who would have been Napoleon II.
4. Trace the growth of liberalism in France, from 1848 to 1871.

LECTURE V.—THIERS AND THE THIRD FRENCH REPUBLIC.

Louis Adolph Thiers, born at Marseilles, 1797.

Liberalism against Absolutism, 1821-30.

The Revolution of 1830.

T. in the Revolution of 1848.

T. during the Empire.

The Franco-Prussian War.

The Fall of the Empire.

When the news of the battle of Sedan arrived at Paris, the liberal elements in the Chamber of Deputies took steps to depose the Emperor. The work was taken out of their hands by a rising of the populace, who invaded the Assembly, caused the flight of the Conservative members and of the Empress, and formed the provisional "Government of National Defense," which proclaimed France a Republic.

The Third Republic.

Presidency of Thiers.

The Work before the New Government.

Peace with the Germans.

The Struggle with the Commune.

Monarchism and Republicanism.

The Constitution.

Two houses of the Legislature, the lower elected by direct vote and universal suffrage, the upper by an indirect vote and limited suffrage. The President elected for seven years by joint vote of the two houses, and re-eligible.

Fall of Thiers.

MacMahon, Grévy and Carnot.

The Policy of the Republic.

Boulanger.

REFERENCES.

"Life of Thiers," 1 vol.

Washburne's "Recollections of a Minister to France," 2 vols.

Simon's "Administration of M. Thiers."

"Reminiscences of Thiers," *The Century Magazine*, January, 1882.

"The French Republic," *Harper's Magazine*, March, 1881.

QUESTIONS.

1. Was there any connection between "the Commune" and "Communism;" and if so, what?

2. Give an account of the origin of the present Republic of France.

3. To how great an extent can the present standing armies of Europe be attributed to the seizure of Alsace and Lorraine by Germany?

LECTURE VI.—MODERN ITALY.

Mazzini and the Preaching of Liberty and Unity.

“Young Italy.”

Austria in Italy.

The Failures of 1848.

Cavour, 1852–1861.

The Position of the Sardinian Kingdom in Italy.

Far-sighted Statesmanship.

The Struggle with Austria impending.

The Italian War, 1859.

Revolts in the centre of Italy.

Peace of Villafranca-Zürich.

The Union of the North.

Garibaldi, Patriot and Soldier.

The Sicilian Expedition.

Italy United.

Venice, Rome, Irredentism.

*The Constitutional Monarchy.**The Triple Alliance and the Army.*

REFERENCES.

Probyn's "History of Italy, 1815–78, 1 vol.

Venturi, "Life of Mazzini," 1 vol.

Marriott, "Makers of Modern Italy," 1 vol.

"Personal History of Garibaldi" in *The Century Magazine*, August, 1882.

Mrs. Browning's "Napoleon III in Italy," "A Tale of Villafranca," "King Victor Emmanuel," etc.

Whittier's "Garibaldi."

QUESTIONS.

1. Which did the more important work for Italy—Mazzini or Cavour, and why?
2. Trace the process of unification of Italy.
3. What similarities and what differences were there between the process of unification in Italy and in Germany?

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TYPICAL ENGLISH POETS.

LECTURE I.

THE SOURCES OF ENGLISH LITERATURE.

There are two ways in which the study of any literature may be pursued: (*a*) Historically—or with the primary object of understanding the principles of its growth. (*b*) Critically—or by the study of literary masterpieces, with the primary object of gaining an understanding of them. Neither of these methods should be pursued to the neglect of the other, as they are mutually helpful. The object of the present course is to make clear the main forces back of the history of English literature, through the study of typical poets. These forces being understood, the underlying continuity of the literature becomes apparent. We thus combine the historical and critical methods of study.

To understand the history of English literature, we must go back to its sources. Its history divided into two periods:

(*a*) Before Chaucer—from about 670 to 1340.

(*b*) After Chaucer—1340 to present time.

The first period is (*a*) the period of preparation and growth, during which the national character was forming, and that mixture of races which makes up the modern Englishman substantially effected; (*b*) the period during which the national language was evolved.

What were the elements mingled during this preparatory period?

I.—ENGLISH—In its origin and spirit the English is essentially a Northern and Teutonic literature. Charac-

teristics of English literature unmixed with other race elements—(a) *The gloom and severity of natural background*. This is seen in earliest modern epic—Beowulf. (See description of dwelling of Grendel—Beowulf. Garnett's translation, line 1357–1383, and an early poem, *The Ruin*.) (b) *Ideas of Heroism*.—Life an arena for warriors; death preferable to dishonor. (See Beowulf, XXII, 1385; *ib.* 2665. (c) *The Idea of Fate*. Beowulf, 1003; *ib.* 1700–1765. *The Fortunes of Man* expresses same idea. Morley's *English Writers*, Vol. II, p. 32. *The Seafarer*, *ib.* 21. (d) *Resolute facing of death*—closely connected with ideas of fate. *The Grave*. Longfellow's *Poets and Poetry of Europe in Anglo-Saxon translations*. (e) *The Love of the Sea*. *The Seafarer*, *supra*. (f) *Religious Feeling and Sense of Seriousness of Life*. Illustrations of the permanence of these elements in English literature.

II.—CELTIC—"Now as between the Anglo-Norman and the Celt, we do not know which is the beggar-maid and which Cophetua, but we do know that as a people we are strong, not because we are Teutonic, not because we are Celtic, but because we are both."—*Henry Morley*.

The Celtic element entered into England and its literature: (a) Through the admixture of the invading English with the Britons (*Kymrie*). (b) Through the partially Celtic element brought in with the Norman Conquest. This, however, was largely mingled with Teutonic elements and with a Romance language and civilization. (c) Through the introduction of Celtic literature and legend, especially in the twelfth and following centuries.

Characteristics of the Celtic Literature.—(a) Quick and delicate sentiment. Lament for Gwenn (supposed to be sixth century). See Morley's *English Writers*, V. I, p. 217. (b) Love of beauty, color, romance and nature. (See *Stories in Mabinogion*.) (c) Grotesque and humorous. (*Peredur*, the *Mabinogion*. Guest's edition, p. 114.)

Out of the combination of diverse elements, English and Celtic, has sprung the English literature since the

fourteenth century. Each partner in this race combination brought a definite contribution to the common stock, the peculiar gifts of the one often supplementing the deficiencies of the other.

GENERAL REFERENCES.

Green's History of the English People will be found of use throughout the course. The student is advised to read the portions relating to literature and social conditions during periods treated in the lectures.

English Literature Primer. By Rev. Stopford Brooke.

REFERENCES.

Beowulf. Garnett's Translation.

Longfellow. Poets and Poetry of Europe. Anglo-Saxon translations.

English Writers. Morley. Vols. I and II.

The Mabinogion. Guest's translation or

The Boys' Mabinogion. Sidney Lanier.

Celtic Literature. Matthew Arnold.

Taine's English Literature, Vol. I to p. 145.

The Influence of the Celt on English Literature. Essay in Clement Marot and other studies. By Henry Morley. Vol. II, p. 248.

LECTURE II.

CHAUCEER AND HIS CENTURY.

In the fourteenth century the coalescing of those elements of race and language which had previously entered England was substantially completed. The mixture of Briton with English, the mixture of Norman with English, the infusion of Norman-French literature, the infusion of Celtic literature, the production of standard national language out of amalgamation of French with one dialect of English, all had been more or less effected by 1500.

Fourteenth century as the conclusion of one great literary period is thus of peculiar importance.

Some Characteristics of Fourteenth Century England.—This century marks at once end of old order and beginning of new. Midway between Mediæval and Renaissance Europe; sharing in chivalry and mental habit of the one, it has in it the dawning of those immanent intellectual, religious and social changes, which were to characterize the other.

(a) *Religious Changes*—Wyclif. (b) *Political changes*—Black Death—John Ball and Socialism. Chaucer's relation to his time. *Chaucer's England from without.*—Manners and customs. Chaucer's London, etc.

Chaucer and his Work.—Characteristics as a poet. Truthfulness, tenderness, love of nature, humor, dramatic power, simplicity, mediævalism, his limitations. The Clerk's Tale—tenderness and power of characterization. The Nonne Priest's Tale—humor.

Chaucer and his Century.—He is not only the great painter of the superficial aspects of fourteenth century life, he is in many ways the representative of his time. Touches both Middle Ages and Renaissance, and expresses the result of that fusion of English and Norman, of the English and the French tongues, which his century saw completed. His place in the history of literature.

REFERENCES.

- Essay on Chaucer.* J. R. Lowell.
Ward's Life of Chaucer. English Men of Letters.
Prologue to Canterbury Tales. Clarendon Press Series.
The Clerk's Tale. Clarendon Press Series.
The Nonne Priest's Tale. Clarendon Press Series.
Chaucer for Schools. Mrs. Haweis.
Pictures of Old England. Pauli.

LECTURE III.

SHAKESPEARE AND HIS ENGLAND.

Just as Chaucer is the supreme expression in literature, for his time, of a composite England, so Shakespeare speaks for an England enriched since Chaucer's time by one additional element—the influence from Italian civilization.

The Preparation for Shakespeare.—(a) The coming of the New Learning into England. The period succeeding Chaucer's death one of preparation, through the introduction of Italian educational methods, rather than of performance. (b) The Reformation in England. Tyndale's Bible, 1525. Act of Supremacy, 1535. (c) The scholars and translators. Slow growth of the drama.

Shakespeare's England.—(a) Relief after disturbed reign of Mary. (b) Strong feeling of national pride. (Defeat of Armada, 1588.) (c) The New Learning. (d) Enlargement of horizon and imaginative stimulus of new discoveries. (Raleigh, Hawkins, Drake, etc.) (e) Relief from the restraints of Mediævalism. (f) Splendor of life. Masques, pageants, dress, theatres, London, etc.

Shakespeare (1564–1616).—Shakespeare expresses certain elements of the Renaissance, yet he does more than this.

Shakespeare's View of Life.—Can we know anything of it?

1. On the one hand, it must be admitted that he wrote primarily as a practical playwright, and not as a moralist or theologian.

2. On the other, we must admit that he expresses with apparent sympathy the very inmost spirit of Christianity.

3. Two plays are devoted to the Christian virtue of Charity—The Merchant of Venice and Measure for Measure. *The higher law of mercy* (compare Merchant of Venice, Act IV, Scene 1; Measure for Measure, Act II, Scene 2).

4. Shakespeare's recognition of the *higher law of self-sacrifice*. Julius Cæsar and Hamlet. The higher and lower success. The character which succeeds because it is less finely organized; the character which fails because it cannot accommodate itself to life. The probing of life in the five great tragedies—Julius Cæsar, Hamlet, Othello, Macbeth, Lear. The culminating expression of the revolt against life in Lear. The suffering of the innocent for the guilty, but

" Upon such sacrifices
The gods themselves throw incense."

Shakespeare's conclusion seems to be Browning's. (See Apparent Failure, verse 7.) Whatever else may be unsolvable, Shakespeare in his most tragic plays remains assured of the beauty of holiness.

Shakespeare and the Renaissance. His points of sympathy with it. *The Teutonic and Celtic in Shakespeare*.

REFERENCES.

Article on Renaissance. J. A. Symonds. Encyclopædia Britannica, 9th edition.

Shakespeare, his Mind and Art. Dowden.

Shakespeare. Dowden. Literature Primers Series. Appleton.

Shakespeare's England. Thornbury.

Shakespeare's England. Goadby.

Article on Shakespeare. T. Spencer Baynes. Encyclopædia Britannica, 9th edition.

LECTURE IV.

MILTON AND PURITAN ENGLAND.

The Space between Shakespeare and Milton.—Difference not one of time but of tone. Though their lives overlap, the mature work of Milton expresses a widely different England from the mature work of Shakespeare; e.g., compare Samson Agonistes with Venus and Adonis. Paradise Lost with Hamlet.

The Causes of this Difference in Tone.—Double element in the Renaissance. (a) *Humanistic* or artistic—Italy. (b) *Religious*.—Germany. These entered England contemporaneously. Greek introduced at Oxford about 1475. Tyndale's Bible 1525. But while the humanistic found literary expression first in Elizabethan period, the religious, at work throughout the fabric of society, declared itself in Puritanism, and had its literary outcome in Milton and Bunyan. Illustrations of these different views of life from Shakespeare, Spenser, Herrick, etc. Milton's nearness to the Renaissance, in his early work ; love of beauty, etc., transition. See epistle to Charles Diodati. Lycidas. His early firmness and steadfast purposes. His Puritan characteristics.

Milton and Puritanism.—The Puritan virtues ; uncompromising war against evil ; undaunted endurance of defeat. Righteous, if sometimes unrelieved severity rather than tenderness and compassion.

Milton's Satan and the Spirit of Puritanism. Samson's condemnation of Delila :

" All wickedness is weakness ; that plea then
With God or man will gain thee no remission."

Puritan hatred of weakness. *Paradise Lost*, Book I, p. 157.

Milton as a Poet.—The grandeur of Milton's position in the England of Charles II as prefigured in the *Samson Agonistes*.

The spirit of Milton and the spirit of Shakespeare.

REFERENCES.

Milton. Rev. Stopford Brooke.

Milton, Life of, in Great Writers Series, Garnett.

Memoirs of Col. Hutchinson.

Samson Agonistes.

Epistle to Charles Diodati.

Article on Milton's Poetry in *Roman Imperialism, and Other Essays*. By J. R. Seeley. P. 129.

LECTURE V.

POPE AND THE ENGLAND OF ANNE.

It is difficult for readers of to-day duly to recognize the merits of Pope, as in many cases he is circumscribed by a time whose literary standards have been swept away, while Shakespeare and Milton are "not for an age." To do Pope justice we must try to enter into his time, and remember that the ability to appreciate different kinds of excellence is a great factor in one's education.

The Contrast between the England of Milton and of Pope.—The decline of the creative impulse of the Renaissance. The interruption of Puritanism. The influence of France. Scientific and intellectual spirit. Eighteenth century realism—its cause and manifestations. The use of verse as a medium for a new order of subjects—*e. g.*, Gay's *Trivia*, Pope's *Essay on Man*, etc. The reliance on finish of style (see Ned Softly the Poet—Addison in *The Tatler*; Austin Dobson, *Eighteenth Century Essays*, p. 37). The power of grace and precision of style to keep alive a poem comparatively inferior illustrated by certain works of Pope. *The Essay on Man*. Its contempt of man compared with that of Swift. The Copernican system and the early eighteenth century view of man. *The Rape of the Lock*. Its wit consists in the belittling of things ordinarily thought admirable by placing them on an unexpected equality with the trivial. Its points of resemblance to *Gulliver's Travels*.

Pope as a Poet.—The moral of Eighteenth Century realism for American writers. Pope's merits and defects.

REFERENCES.

Pope, Life of Leslie Stephen. English Men of Letters Series.

Life of, in Johnson's Lives of the Poets.

The Rape of the Lock.

The Essay on Man. Clarendon Press Series.

Pope, Essay on, in My Study Windows. P. 415. J. R. Lowell.

Lecky's History of England in the Eighteenth Century. Vol. I, 546-624; Vol. VI, 138-299.

LECTURE VI.

WILLIAM WORDSWORTH.

The sense of the mystery and dignity of life gained ground in England during the latter half of the eighteenth century. The more coldly intellectual life of the earlier part of the century was modified by a fresh spiritual enthusiasm, a sense of the beauty and wonder of nature, and of the inherent nobility and importance of man. This change in the temper of the time manifested itself in many ways, political and social, as well as literary. We find one expression of it in the Life and Poetry of Wordsworth.

Man and Nature.—Three relations held by man to nature at different stages of development: (a) Primitive dependence on nature. (b) Separation through the artificial life of civilization. (c) The deliberate renewal of sympathy, but on a more spiritual or thoughtful basis. This desire to re-establish close relations with nature, one of the curious and significant signs of recent times. Brook Farm and kindred experiments. The alienation of Donatello from nature, in the Marble Faun (*Marble Faun*, Vol. I, pp. 94, 95; Vol. II, pp. 14, 15, *ib.* 24-26). (See also *Civilization, its Cause and Cure*, by Bernard Carpenter, pp. 26-29.)

Three corresponding stages in Wordsworth's relation toward nature, as illustrated by Tintern Abbey. Ode on Intimations of Immortality. The Prelude, etc. Truth of nearness of boy to nature.—The Idle Shepherd Boys. The subtle influence of early natural surroundings.

(a) Wordsworth's boyhood with nature. (b) The

springing up of an interest in man which for the time almost seemed to obscure the love of nature. (See *The Prelude*, Books VII and VIII.) (c) Later attitude toward nature. The Ode on the Intimations of Immortality; its poetry and its philosophy. Science and mysticism. (See *The Tables Turned*. *Expostulation and Reply*; *The Poet's Epitaph*.) Wordsworth and contemporary German Idealism. Carlyle an expositor of the same feeling that what we call the physical and material, is an unsubstantial appearance, having a spiritual basis. (See *Heroes and Hero Worship*; *Sartor Resartus*, etc.). Tintern Abbey, the highest reach of Wordsworth's mysticism.

Wordsworth as an Artist.—His lack of the critical faculty; lack of humor. Slight hold on human life, or power of narration. The unapproached greatness of his poetry in certain directions. Wordsworth and modern life; his lesson for Americans.

Resumé of Course.—The unity of the spiritual life of a nation. The indestructible element in thought. The logical sequence in the history of English literature as illustrated by the foregoing studies. The religion of the English and the sentiment of the Celt.

REFERENCES.

Shairp's Poetic Interpretation of Nature, Chaps. XII, XIII.

Life of Wordsworth, in *English Men of Letters Series*. Myers.

The Ethics of Wordsworth. Essay by Leslie Stephen, in *Hours in a Library*. Third Series.

Matthew Arnold's *Selections from Wordsworth* will be found convenient. *At least*, the following poems should be read: Group relating to Lucy, *Primrose of the Rock*, *Tintern Abbey*, *Ode on Intimations of Immortality*. *Ode to Duty*, *Poet's Epitaph*, Group relating to Matthew.

EXERCISES.

I.

1. Cite passages from English literature since Chaucer, which seem to you to illustrate the influence of the English or the Celtic element.
2. To what extent did the Britons intermix with the English, and in what sections was this intermixture the greatest?
3. Discuss the Celtic love of color, and give instances of it in Celtic literature and life.

II.

1. Analyze the character of Griselda as portrayed by Chaucer. How far do you consider her submission admirable?
2. Discuss the character of Walter. Do you consider him natural or improbable? What do you think of Chaucer's art as shown in *The Clerk's Tale*?
3. Explain and illustrate the relation of Chaucer and his work to English language and literature.

III.

1. How and when did the Renaissance come from Italy to England? Illustrate influence of Italy on England in fifteenth and sixteenth centuries.
2. Contrast the characters of Brutus and Cassius in Julius Cæsar, and of Hamlet and Laertes in Hamlet. Give other illustrations of character-contrast in Shakespeare and elsewhere. Compare Brutus and Cassius with Hamlet and Laertes.
3. How is Shakespeare connected with the Renaissance historically and in his views of life?

IV.

1. Compare the Renaissance and Puritan spirit, and illustrate their points of difference.

2. Give passages from Milton which illustrate his nearness to Renaissance, and passages which show his divergence from it.

3. Contrast Milton and Shakespeare as representatives of Puritan and Renaissance England, and illustrate by references to their works.

V.

1. Milton declares the object of *Paradise Lost* is to "justify the ways of God to men" (Book I, 26). Pope similarly declares the object of *Essay on Man* is "to vindicate the ways of God to man" (Essay 16). Contrast the manner in which these similar designs have been carried out, and comment on reasons for difference of treatment.

2. Discuss Pope's use of supernatural element in *The Rape of the Lock*. Compare his treatment of it with that of Shakespeare and others.

3. Discuss and illustrate the spirit of realism in the English literature of early Eighteenth Century.

VI.

1. Illustrate changed feeling toward nature and man during Eighteenth and early Nineteenth Century by instances of its expression in English literature.

2. How did changed feeling toward man manifest itself in the history of this time?

3. Trace in outline some of the threads of continuity in English literature from its beginning to the present time.

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The object of the course is to describe the economic organization of England in the Middle Ages, the changes since, and the different conceptions of social organization which have accompanied and followed these changes. The older forms of industrial society passed away in two great movements, one belonging especially to the sixteenth century, the other to the eighteenth. As a result of these processes and contemporary abstract thought, there have been two well-marked periods within the last one hundred years:

(1) That in which the ideal of legislation and political speculation was the most complete individualism or sufficiency of each person to attain what is best for himself and for every one else by simple individual action, and free contract with others; and

(2) A reaction from this ideal, shown, among other evidences, by (1) the passage of factory laws and similar legislation in which the government has intervened to take away freedom of contract between manufacturing employers and their employes, in regard to hours of labor, meal-times and holidays, sanitary conditions, places and times of payment of wages, etc.; (2) the formation of trades unions, in which large bodies of workingmen have used united instead of individual action, seeking to reach ends as a class or organization instead of as separate persons; (3) co-operative and profit-sharing experiments, in which continued efforts are made to reverse the individualistic tendency to place capital, management and labor permanently in the hands of different classes; and (4) socialism, under which name various propositions for the substitution of some other principle for that of competition have gained wide acceptance, and in the form of State socialism been quite largely put in practice.

The first four lectures of the course cover the first period; the last four, the second period, that of reaction.

THE RISE OF INDIVIDUALISM.

LECTURE I.

THE INDUSTRIAL SYSTEM OF THE MIDDLE AGES.

The Manor.

A manor was a district of country, made up of a small village, the tract of cultivated ground around it, and a further stretch of land, partially grown up in bushes and trees, extending away toward the similar borders of an adjacent manor. Over this district, or at least having many valuable rights and important duties in it, was a person known as "the lord of the manor;" and settled in the village was a population of peasants or small farmers, bound to the lord of the manor and to one another with various legal and traditional duties and rights.

All England was divided into such manors, with the exception of a few towns; and at least nine-tenths of the population were inhabitants of these villages. The three portions of the lands of the manor were:

The village or "thorp," a group of houses stretched along a street, perhaps with an outlying mill and church and manor house.

The farming land, divided into three great tracts, each of these divided into "furlongs" or ploughlands, and each of these subdivided into acre or half-acre plats, separated by narrow unploughed strips.

The "waste," or common, an indefinite stretch of uncultivated land used for pasturage, firewood, etc. Each of the villagers occupied one of the houses, held

several scattered strips in the farming tract, and had certain rights of pasturage, etc., on the waste.

The lord of the manor also held a large number of the strips, and received dues in labor or money or both from the villagers.

Of the latter there were two main classes, those who held a considerable number of the intermixed acres, usually some thirty, known as a "virgate," and those who held but one or two or perhaps as many as five. The former class paid dues to the lord, two or three days a week service, and extra work at special times, besides certain payments in money or in kind. The second class, the cotters, paid smaller dues. All of these were in early times serfs, but by the fifteenth century had become free.

The tenure by which they held their lands had no security in the eyes of the law, but, as a matter of fact, they were given security by the lords for many centuries.

Farm-work was done much in common, each villager providing an ox or two, or a plough, and together working out their dues on the lands of the lord and cultivating their own strips successively.

The most characteristic points of the manor were its self-sufficiency—completeness in itself, and the closeness with which all inhabitants were bound together within the manor.

The Guild.

In the Middle Ages, everything tended to drop into an organization. In the towns, two forms became prominent: (1) the guild merchant; (2) the craft guild.

1. The *guild merchant* was an organization of all the freemen in any town engaged in trading. It had a monopoly of the trade of the town, and often became the real town government, as well as making agreements with the guilds of other towns or even of foreign countries.

Each town had its one merchant guild, and these often obtained charters from the central government.

At first there was probably no distinction between those engaged in trade and in manufacture, but ultimately the latter were excluded, and organized themselves separately as

2. *The craft guilds*, which were organizations of all those engaged in any one kind of manufacture in any particular place, for the purpose of controlling their trade and supporting one another.

Trades were much subdivided, guilds existing in many towns of weavers, fullers, dyers, burrellers, armorers, cutlers, leather-dressers, tallow-chandlers, wax-chandlers, bakers, butchers, fletchers, bowyers, etc.

They were at first of less importance than the merchant guilds, but later almost superseded them.

Like the former, they had the monopoly of their trade, no person being allowed to pursue any trade in a town unless he was a member of the guild.

They held a great meeting once a year, in which masters, wardens, overseers or bailiffs were elected and general regulations for the guild passed.

Their general objects were :

1. Beneficial,
creation of a common fund for payment to sick or aged members, their widows or orphans.
2. Fraternal,
help to members behindhand on contracts, sharing good fortune in materials, etc. Annual feasts. Common devotion to some saint.
3. Economic,
regulation of manufacture, prevention of underhand competition, inferior work and breach of customs.

Above all, the object of the guild was to see that custom was observed.

Thus almost every merchant, manufacturer or me-

chanic in England was a member of some guild; every countryman a member of some village community. Every man, whether in country or town, was in an organization with others of his class. This was the characteristic of the Middle Ages, that every man was set in some framework; no one was apart by himself.

Every one moved in tracks worn for him by custom and lived in a circle with others in exactly the same position.

REFERENCES.

Ashley's *English Economic History*, chapters 1 and 2.
Seeböhm's *English Village Community*.

Gross's *Merchant Guild*.

Seligman's *Two Chapters on the Mediæval Guilds in England*.

LECTURE II.

BREAKING UP OF THE MEDIÆVAL SYSTEM.

The fifteenth and sixteenth centuries were a period of transformation in English history.

In the intellectual world :

The new learning.

The new literature.

In the religious world :

The fall of the Mediæval Church.

The growth of Protestantism.

The Anglican compromise.

In government :

The final destruction of feudalism.

So even more clearly in the economic world, the manor system of the country and the guild system of the towns went to pieces, or lost all completeness and vigor.

The Fall of the Manor System.

Three great movements took place, beginning in the fifteenth century and extending through almost all of the sixteenth :

1. Extension of sheep-raising instead of grain-raising.
2. Enclosure of commons.
3. Consolidation of small holdings.

1. Wheat and wool had always been the two great staple crops of England, and the latter its principal export. In the fifteenth century wool, especially the fine English wool, came to be in great demand, both for English manufacturing and for exportation to the Netherlands. The consequence was that the large landowners, that is the lords of manors, saw an opportunity of gain, and were anxious to introduce sheep-raising instead of grain-raising.

At first the demesne lands of the lords of manors were diverted from wheat to pasture, but not being adequate the next movement began.

2. The enclosure of commons.

The doctrine of the lawyers was that the land of the waste belonged to the lord of the manor, but that the tenants of the manor also had certain rights upon it.

The Statute of Merton, in the thirteenth century, had allowed lords to fence in or enclose portions of the waste if they left enough for the uses of the tenants.

Now, however, such a rapid enclosing of these lands began that there was an inevitable conflict of rights.

The rights of the tenants were either compensated for, in some cases, or disregarded, with the help of the lawyers and judges.

Thus many new large farms were constructed from the old common lands, and either carried on by lords of manors themselves or rented out to a new class of large farmers.

3. Still another form of enclosures, and one much more destructive to the manor system, was the consolidation of the scattered or intermixed strips of the three great fields.

In order to do this, the villagers or small farmers holding them had to be gotten rid of.

This was done by

1. Ignoring the old traditional security of tenure.
2. Raising the dues or rents.
3. Taking advantage of failure to perform all conditions of leases.
4. Refusing to renew expired leases.
5. In many cases, by pure violence.

When a number of them were thus vacated they were consolidated into a farm of the modern type and rented out.

Thus in a considerable part of England, such breaches were made in the old manor system that its constitution was entirely changed.

Old population of the villages scattered :

1. Some engaged on the sheep farms.
2. Some became the new large farmers.
3. Some became day laborers on large farms.

But still a large number unaccounted for, except as

1. A starving peasantry.
2. Vagabonds and "sturdy beggars."
3. Paupers and criminal classes in the towns.

The Royal Government, and occasionally Parliament, tried to prevent these changes, but unsuccessfully.

A new organization of the country population came into existence, composed of three classes :

1. The landlords, or old lords of manors.
2. The large farmers, renting their lands.
3. The farm laborers, occupying the old villages.

In these modern country villages there was no longer the same close connection of the inhabitants with one another, they were simply day laborers working on different farms and receiving wages.

The Fall of the Guild System.

Even before the fifteenth century a growing exclusiveness was visible in the guilds. The increasing capital made it harder for a journeyman to become a master. The families already members of the guilds tried to keep others out by

1. Giving privileges to sons and sons-in-law of members.
2. Charging excessive entrance fees.
3. Raising apprenticeship fees and requirements.

Thus there was a split in the guild system, a large number of mechanics being permanently excluded from full membership.

Under these circumstances and the other conditions of the sixteenth century, a new class of merchants, the "clothiers," arose, who, by means of capital and a new organization, set spinners and weavers to work in cottages in the country villages, furnishing the raw material and taking back the finished cloth; paying for the spinning and weaving.

Guilds induced Parliament to pass laws prohibiting this country manufacture, but they were ineffective.

A third weakening of the city guilds was the confiscation of their corporate property by the government in 1544 and 1545, under the plea that it was being employed for "superstitious uses." These movements all going on, the guilds gradually lost all their influence and vigor, and remained only narrow aristocratic bodies.

Industrial Society in the Eighteenth Century.

By the middle of last century, the agricultural districts were in the condition in which the changes of the Tudor period had left them. Perhaps one-half the manors of England had gone through a complete change, on the others the old communal life had largely passed away, though small farmers still existed in con-

siderable numbers, and both waste and common fields still remained unenclosed.

The towns had lost their supremacy in manufacturing; and most of the weaving industry, the greatest in England, was done in country villages in a sort of combination with agriculture.

The merchants of the towns distributed raw materials to the weavers in the villages, these had it spun by members of their families or by neighbors, wove the goods on a hand-loom and returned it to the agent of the merchant when he came, receiving payment for the work.

The weavers and their journeymen and apprentices were thus isolated, and no longer united in an organization as had been the case in the time of the guilds.

Moreover, as in the fifteenth century, a time of change was imminent.

The industrial system especially was evidently on the brink of change.

1. Population was growing more rapidly.
2. New colonies across the sea were demanding manufactured goods.
3. Capital had increased.
4. A new spirit of enterprise and advance was in the air.

And yet with old processes it is hard to see how production could be much increased.

Agricultural methods were poor, and those of manufacturing were equally so.

This was perceived at the time, and unsuccessful efforts made to invent machinery for spinning. In 1761, the English Society of Arts offered two prizes of £50 and £25 for the best invention to spin six threads by one person, but of the methods submitted none proved to be practicable.

REFERENCES.

Rogers' *Six Centuries of Work and Wages*.

Froude's *History of England* (in various chapters).

Cunningham's *Growth of English Industry and Commerce*.

Ashley's *Early History of the English Woollen Industry*.

LECTURE III.

THE INDUSTRIAL REVOLUTION OF THE EIGHTEENTH CENTURY.

The New Inventions.

1. Hargreave's "spinning jenny" was invented in 1764, by which one person could spin 8, then, when improved, 12, 20, and finally 100 threads at a time. At first it was successfully kept secret, but the model soon got abroad, and within ten or twelve years a jenny was in the house of almost every weaver and spinner.

2. Arkwright's "water frame" was invented in 1768, on a different principle from that of Hargreave's. It spun a firmer and finer thread, but needed artificial power to work it.

3. Crompton's "mule," invented 1776, combined the advantages of the "jenny" and the "water frame."

4. Earlier improvements in carding were now taken up and made practicable.

All of these four were improvements in spinning thread, not in weaving goods, and although use for the additional thread was found in the stocking manufacture and in the hand-loom, yet weaving was now halting behind spinning.

5. Cartwright's "power-loom," invented 1784, perfected 1787, and brought into general use by 1800, corresponded in weaving to the recent improvements in spinning.

6. The American "cotton-gin," invented by

Whitney in 1792, gave a larger, cheaper and better supply of cotton for manufacturing.

But the requirement for some satisfactory artificial power was not immediately met. Wind, water and horse-power had been used from of old, and water power was now being relied on for moving the new machinery.

7. Watt's improvements in the steam engine were first patented in 1769. In 1774 he built engines successfully, in 1785 the first one was used to furnish the power in a cotton mill, and by 1800 a number were in use in factories.

The New Factories.

The necessity for using power and the larger size and price of the new machinery led to its being placed in buildings especially constructed for it, instead of in the cottages of the country weavers.

The natural line of development of the new factories was :

1. An increase of size and complexity.
2. The investment of a greater amount of capital.
3. The exercise of more business energy and ability, and ultimately the organization of an entirely new method of carrying on manufacture, known as the "factory system."

Effect on the Old System.

Under the new organization and by the new machinery, an enormous increase in production took place, and prices were lowered rapidly. The high profits tended at the same time to lift those who carried on the new manufacture to an entirely new social plane.

The effect on the old manufacturing population was to destroy by the lower prices the business of the spinners and hand-loom weavers, and to draw them from the country districts to the towns where the

mills were situated. Here men, women and children became factory hands.

Changes in Land-holding.

The last process mentioned, the drift of population from the country to the factory towns, was the more easy because of contemporary changes in the land system.

The stationary methods of agriculture gave way soon after the middle of last century to a number of improvements :

1. New kinds of crops.
2. New fertilizers.
3. Extensive drainage.

As a natural accompaniment of these improvements, the old process of enclosure of commons again revived and spread rapidly.

Such enclosures took place where they had not been completed during the fifteenth and sixteenth centuries, and were now authorized by special acts of Parliament.

First such law, 1709.

They became more and more frequent through the century until 3,954 had been passed.

In 1801, a general enclosure act was passed and a commission appointed.

Altogether, between seven and eight million acres have been enclosed during this period.

In this process the combined manufacturers and small farmers, the weaving farmers, disappeared.

Higher rents and less pasture, and lower prices for weaving, made it necessary to give up one and devote all their time to the other, while the whole tendency of the land movement prevented them from succeeding as small farmers, so they were driven to the towns to enter the factories.

Thus the last remnants of the old system, a whole industrial society, had passed away.

REFERENCES.

- Toynbee's *Industrial Revolution*.
 Taylor's *History of the Factory System*.
 Lecky's *History of England in the Eighteenth Century*.
 Baine's *History of the Cotton Manufacture*.
 Walpole's *History of England from 1815*, chap. 1.

LECTURE IV.

THEORETICAL VIEWS AND THE NEW INDUSTRIAL SOCIETY.

The eighteenth century was a time of change not only in industrial organization, but in philosophy and in social ideals.

Of the philosophy of the time, there were especially two characteristics :

1. The study of physical nature and the tendency to reduce all thinking to the form of discovery of natural laws.

2. The glorification of a "state of nature," the supposition that isolation and primitive simplicity was the natural and happiest condition of mankind, while society and civilization represented a degeneracy.

The first of these gave rise to a number of doctrines reducing economic phenomena to physical laws, the second to a reaction in favor of leaving people to themselves, freeing them from the control of government, of society, of religion, of customs, of habits.

In the economic world, this movement was represented by the Physiocrats in France; in England, by Adam Smith's "Wealth of Nations," 1776. In England, also, the utilitarianism of Hume and Bentham tended in the same direction.

Thus a school of writers arose with a strong bias toward absolute individual liberty. They taught that government should withdraw entirely from the control of industry

and bend its efforts to giving entire freedom to each individual to do the best he can for himself.

Some of the economic laws that came to be generally accepted were :

1. Ricardo's law of rent ; that the amount of the rent of any piece of land was measured by the difference between its productivity and that of the poorest land in cultivation. Therefore, neither the landlord, the tenant nor any one else had any control over the amount of rent.

2. Malthus' law of population ; that population tends to increase more rapidly than the means of subsistence. Therefore, a great part of society is doomed, generally speaking, to live very close to the starvation point.

3. The wages-fund theory ; that there is an amount of capital in any country devoted to the payment of wages, and the rate of wages will depend on the quotient obtained by dividing this amount by the number of laborers. Therefore wages cannot be raised arbitrarily by the employers or the laborers.

4. The "iron" law of wages ; that there is a natural rate of wages just sufficient to support the laborer and enable him to bring up enough children to take his place. Therefore if wages go up, families will be larger, and wages will be reduced by competition, while, if they go down, the number of laborers will decrease, and the natural rate of wages be restored.

The tendency of these doctrines was to show that all industrial matters must be left to themselves, except as each person looks out for his own best interest.

All economic matters were settled by competition and competition only, therefore competition must be as free and complete as possible.

This is known as the *laissez-faire* doctrine.

Men, good, generous and sympathetic, believed that their hands were tied, and the most good could be done by letting things alone.

Population was growing rapidly, manufacturing was

increasing enormously, and wealth was being accumulated still more quickly.

Other forms of economic development were going on simultaneously; coal and iron, roads, canals, railroads, all were developed unprecedentedly.

England was becoming a great industrial organization where everything was done on the largest scale, and the world was her market. In this great workshop, the working population was free of foot, having lost its hold on the land, on capital and on the direction of manufacturing. The great mass of the population were hands in the great factories.

There was no connection with the employers, except the money one of receipt of wages. No connection of laborers with one another, no trades unions, or scarcely even families.

1. Factory hours were extremely long.
2. Wages were very low.
3. The life of the laborers very squalid, and a general acceptance of the view that nobody was responsible, and nothing could be done.

It seemed to work out hardly in many cases.

1. Hard lot of hand weavers.
2. Women and children.
3. Disappearance of small farmers.
4. Sweating system.
5. Suffering of the farm laborers.

But still nothing could be done.

This was England in the first quarter of this century.

Perhaps the first time in history when all society—men, women and children—tended so strongly to become a mere multitude of independent, unconnected, competing units, bound together by no bonds except individual temporary bargains.

Contract between individuals, action as units rather than as groups, individualism to its most extreme possibilities, tended to become the foundation of all modern society,

in England, primarily, but in other countries also, as far as the factory system and the contemporaneous political views entered into their social organizations.

But only tended, for this individualism was never complete.

Long before many of the tendencies recounted above had reached their greatest development a revulsion in certain other lines had begun.

1. Theoretic economic teaching had never been universally accepted.

2. Humane feelings of the nation revolted against certain developments of the factory system.

3. Interests of the laborers evidently opposed to separate action.

4. Possessors of constructive ideas of new social system successively promulgated them.

5. Democracy was growing.

So the tide of reaction set backward almost before it had reached its full height.

REFERENCES.

Rogers' *Economic Interpretation of History*, chap. 16.

Marx, *Capital*, chap. 15.

Hyndman's *Historical Basis of Socialism in England*.

DECLINE OF INDIVIDUALISM.

LECTURE V.

FACTORY LAWS.

The early factories were built along streams for the sake of the water-power, and in these isolated places it was often difficult to get labor.

Apprentice children were therefore brought from the city almshouses. Abuses of these led to the adoption of the

First Factory Act, 1802:

- Provides for (1) White-washing of factories.
 (2) Ventilation of factories.
 (3) Two suits of clothes a year for bound children.
 (4) Not more than twelve hours' work, and no work at night.
 (5) Instruction, and inspection by visitors.

After the steam engine came into use, the factories were generally moved to the towns, where the same and other abuses reappeared among the free children who were now engaged in the factories.

Second Factory Act, 1819,

Extending the same provisions to all children in cotton mills.

Other acts were passed in 1825 and 1831, but the next important act was the

Factory Act of 1833.

This was passed after two Parliamentary commissions had investigated the condition of the factory laborers.

- It provided (1) That no children under 9 years old should work in any textile factory.
- (2) Children between 9 and 13 should not work more than eight hours a day.
- (3) Young persons between 13 and 18 should not work more than eleven hours a day.
- (4) No young person under 21 years and no women should work at night.

It also provided for the appointment of paid and sworn government inspectors, who should look after the enforcement of the law.

Opposition to these Acts.

1. By the manufacturers.

They complained that their interests were interfered with, and that they could not compete with foreign countries, that the prosperity of England would decline, and capital flee to other countries.

2. By the political economists.

They declared the acts to be based on a wrong principle, that of government interference with freedom of contract, and that the wages fund would be diminished.

Thus many of the best men of the time opposed factory legislation, concentrating against it in Parliament, self-interest, rigidity of belief in abstract principles and an underlying distrust of the working classes.

Nevertheless, the laws were carried, rather by the feeling than by the reason of the legislature.

Successive acts were passed from time to time, the principal steps being the introduction of a limitation of children's work to a half-day, in 1844, and limitation of the work of young persons under 18 and of women to ten hours a day, in 1847. This last provision was carried, by a wave of popular feeling, against

the efforts of all the leaders in thought and government. It was the last bill in which there was any serious contest as to principle, even the earlier opponents coming to recognize the wisdom and the harmlessness of the factory laws.

In 1878, the sixteen earlier acts were repealed, and a general code, the "Factories and Workshops Act," substituted.

This makes provisions under seven principal heads :

1. Sanitary provisions, cleaning, draining, etc.
2. Safety, fencing of machinery, etc.
3. Employment and meal-times.
4. Holidays, Christmas, Good Friday and eight half-holidays.
5. Compulsory school-attendance certificates.
6. Surgeons' certificates of fitness of all below 16 years.
7. Notices of accidents.

Principle of these laws quite opposed to *laissez faire*.

Laws of similar principle were the

1. Mining laws of 1842 and subsequent acts.
2. "Truck" acts of 1831 and 1887.
3. Agricultural laborers' acts.

REFERENCES.

Gunton's *Wealth and Progress*, Part III, chaps. 6 and 7.

Earl Shaftesbury's Speeches.

Walpole's *History of England since 1815* (various chapters).

McCarthy's *Epoch of Reform*.

LECTURE VI.

TRADES UNIONS.

New Position of the Factory Laborer.

Under the old guild system the conditions of labor were definitely regulated, and even after its downfall the government defined wages, apprenticeship and other matters.

Under the new form of manufacturing, this regulation was given up at the same time that the power of the employers became relatively much greater, and all the old customs were broken up. Whenever the following conditions have arisen, there has been a tendency of workingmen to unite :

1. Regulation by the government withdrawn.
2. Employers and laborers distinctly separate classes.
3. The common interest of laborers recognized.
4. Laborers sufficiently intelligent to unite.

These conditions occurred in England early in this century, and trades unions have existed since that time.

Trades unions are voluntary associations arising naturally from the evident interests of workingmen under a system of free competition.

Opposition to Trades Unions.

1. On the part of the law.

The combination of laborers was illegal, both by statute and by common law.

In the days of State regulation of industry, laws had been passed forbidding combinations, culminating in the general Act of 1799, by which it was a crime for workmen

1. To combine to increase wages.
2. To combine to decrease hours.
3. To persuade others to leave their work, etc.

In 1826, these laws were repealed, but the courts subsequently decided that it was still criminal by common law for men to belong to a combination in restraint of trade, and occasional convictions took place.

In 1859, however, a law was passed exempting members of trades unions still further from penalties.

In 1839 and 1867, Parliamentary Commissions investigated trades unions, and as a result of the latter the law of 1871 was passed, legalizing such bodies, and 1875 the last remnant of their illegality as combinations was taken away.

2. Opposition on the part of public opinion. Almost all the influential classes of English society were at first bitterly opposed to trades unions.

1. The employing and property-owning classes.
2. The political economists.
3. The aristocracy.
4. The clergy.
5. Those who had no direct knowledge or interest.

This deep distrust and dislike of the unions arose in these various classes from :

1. Self-interest.
2. Belief in the law of wages and such scientific doctrines.
3. An instinctive feeling that such organizations would ultimately lead to a change in the position of social classes.
4. A widespread and not unfounded belief in the injustice of many of the aims and methods of the trades unionists.

Little by little this last form of opposition has been withdrawn, as the unions have become more strong and more moderate, as general knowledge of them has become greater, as the older economic doctrines have been discredited, and as democracy has permeated society.

In 1860, John Bright defended them in Parliament.

In 1868, Thornton's book "On Labor" appeared.

In 1867, the Second Reform Bill gave the franchise to the working classes, and they gained representatives in Parliament.

The Growth and Development of Trades Unions.

Trades unions certainly existed in the first quarter of this century, but they were often only temporary, and often secret on account of the law.

In the second quarter of the century, they increased steadily, but not very rapidly.

In the third quarter, however, organization became almost universal among the more advanced mechanics, not only in the factory system proper, but in trade and transportation, in mining, in personal service, and, finally, in agriculture.

A further line of development has occurred. The trade union formed of the workers in a particular line in a particular place, the original type, has extended itself in three ways :

1. Into a national body of the workmen in that line of industry.
2. Into a "Trades Council" or "Central Labor Union," made up of workingmen in all lines in any one place.
3. The union of all trades unions in the country into one national body. This, after many failures, has been accomplished with some success in England in the annual "Trades Union Congress," held every year since 1868, and in the United States is being struggled for by the Knights of Labor and the American Federation of Labor.

Thus trades unions may be considered to have passed through a period of trial in England and

become one of the established institutions of the country, with such influence for good or evil as they may possess.

They are distinctly opposed to unlimited freedom of action, as men by becoming members of a trades union necessarily sacrifice some of their freedom from restraint, and act as a group instead of as individuals.

REFERENCES.

Howell's *Conflicts of Labor and Capital*.

Thornton's "*On Labor*."

Barnreith's *English Associations of Workingmen*.

Rogers' *Economic Interpretation of History*, chap. 15.

LECTURE VII.

CO-OPERATION AND PROFIT-SHARING.

Tendency of New Industrial Organization to Separate Functions.

Under the new factory system the natural tendency seemed to be to make at least three different classes:

1. Capitalist or money-lending class, receiving interest.
2. The class that runs mills or carries on building operations or keeps stores, or any other kind of management, and receives profits.
3. The class that does mere daily work and receives wages.

Many persons have never been reconciled to this tendency, and, since the beginning of the century, efforts have been made to reverse it and to combine two or more of these classes into one.

Co-operation.

These efforts have given rise to various forms of co-operation :

1. The Rochdale Pioneers, 1844.

Twenty-eight weavers contributed \$5 apiece, bought common articles of daily use, and opened a store in the house of one of their number, selling goods at regular prices, and at the end of a year divided up the profits.

Other stores were opened on the same plan.

In 1852 there were 140 co-operative stores.

1862, 454 stores, 90,000 members.

1872, 1,048 stores, 330,000 members.

1882, 1,268 stores, 650,000 members.

In the northwestern part of England one-fourth of the population of the large towns and of some of the counties buy their supplies from co-operative stores.

This is co-operation in distribution, conducive to thrift and to saving, but as a reaction from individualism it is the least complete and least important.

2. The Oxford Building Association, 1831.

A number of persons came together, each paying in a small sum, and then loaning the whole of it to one of their number, at interest; doing this each month they are all contributing to extinguish their debt or to create a capital to their credit with the society.

These building associations have extended rapidly in Philadelphia, and thence to Boston, to St. Paul and in other directions, and were later developed in England.

This is co-operation in credit.

3. The Minneapolis Coopers, 1874.

Sixteen barrel coopers organized, paid in \$15 apiece, rented a shop and went to work, paying the regular wages to themselves, paying five per cent. interest on the capital paid in, and dividing up the profits twice a year.

Many other such establishments have been started in England as well as in this country.

This is co-operation in production.

In (1) the result is that the co-operators **save for themselves profits and interest**, and thus tend to obliterate **two classes**, the capitalists and the business managers ; but the co-operators do this not as workmen, but as general consumers.

In (2), similarly, the co-operators save for themselves interest, and also provide themselves with capital that they could not otherwise obtain.

In (3), however, all the three functions are combined in one, the co-operators themselves providing capital, management and labor, and drawing a sum which includes interest, profits and wages.

Profit-sharing.

Leclair, a Paris house-painter in 1842. The proprietor of a large house-painting establishment offered to his older employees to divide, at the end of the year, a certain proportion of the profits of the business among them. In February, 1843, he assembled forty of his employees and laid before them a sum amounting to something more than \$50 apiece as being a fair share of the profits of the concern. This establishment has always since shared its profits.

Many other establishments in France, England, the United States and other countries have tried or are trying the same experiment.

The economic basis of this distribution is that the amount given to the employees will arise from the following sources without being deducted from the ordinary profits of the employer :

1. Greater industry.
2. Greater activity.
3. Greater willingness.

4. More intelligent use of time.
5. Avoidance of waste of materials.
6. Avoidance of misuse of tools, etc.

Profit-sharing and the three forms of co-operation are all forms of reaction from individualism, as they involve the action of men as groups instead of as separate bargainers.

REFERENCES.

- Johns Hopkins University Volume on Co-operation.*
 Publications of the *American Economic Association on Co-operation.*
 Dexter's *Co-operative Savings and Loan Associations.*
 Gilman's *Profit-sharing between Employer and Employee.*

LECTURE VIII.

SOCIALISM.

Definition of Socialism.

From the beginning of the modern industrial period there have been men who proposed still more radical reversals of the prevailing tendencies.

This is socialism: the proposal to abolish competition and individualism and substitute for them some form of government or social control over

1. Land.
2. Capital.
3. Management and distribution.
4. Labor.

Socialism has taken many forms, but in all of them has opposed

- Competition.
- Rent for land.
- Interest on capital.

Competitive profits.

The individualistic ideal of society.

It would substitute the working of each **one** for the community for each one working for himself ; **and** each one receiving from the community, not **from** other men.

History of Socialism.

It is one of the weaknesses of socialism that its history is largely the history of individual men.

Great and permanent movements are movements of the whole or a large part of society at one time.

It is only of late years that the latter is true of socialism.

1. The early history is that of certain French thinkers and writers: Babeuf, Cabet, St. Simon, Fourier and Louis Blanc.

Almost the only permanent element of socialism coming down from this time is the idea introduced by the last of these men, of making use of the present governments for the initiation of the socialistic regime.

The revolutions of 1848 gave an unexpected opportunity for an attempt to put the existing socialistic ideals into practice, and with the failure of the political movements the social one also failed, fragments of it reappearing in various schemes of co-operation and profit-sharing.

2. The next period is that of the German influence.

Marlo and Rodbertus developed a new theoretical basis for socialism.

Karl Marx, in his work "Capital," gave a masterly criticism of the existing system, and appealed to history as leading to socialism.

La Salle roused the German workingmen and began the social democratic movement, at present the most active in the world.

3. Of recent years socialism has appeared in various forms and places :

(a) State socialism, as the government ownership of railroads and telegraphs, and compulsory insurance.

(b) Professorial socialism, as taught by many of the most influential professors of political economy, especially in Germany.

(c) Nationalism, as represented in such works as Bellamy's "Looking Backward."

(d) A vague feeling growing up in the community, a diffusion in common thinking of distrust in the sufficiency of individuals in isolation, and of a consequent dependence on the government or on large bodies of associated persons to help individual weakness and to obtain united strength for great ends.

Thus, since 1800, society has wandered far away from complete liberty of individual action :

1. In all civilized countries factory laws have been passed.
2. Trades unions have been legalized and encouraged.
3. Co-operative efforts have been widely, and in many fields successfully, made.
4. Socialism in some departments of industry has been introduced, and in others is knocking loudly for admittance.
5. Competition in many lines of practical business has broken down, and trusts and combinations flourish notwithstanding the opposition of statutes, of courts, and of public opinion.

REFERENCES.

- Kirkup's *Inquiry into Socialism*.
 Graham's *Socialism, New and Old*.
 Ely's *French and German Socialism*.
 Dawson's *German Socialism and Ferdinand La Salle*.
 Dawson's *Bismarck and State Socialism*.
 Webb's *Socialism in England*.

EXERCISES.

LECTURE I.

1. Describe a mediæval manor in England.
2. Describe a mediæval craft guild in England.
3. Give the arguments for and against the theory that the villein inhabitants of the manor had formerly been freemen.

LECTURE II.

1. How did the influences of the Tudor period act in breaking up the earlier industrial organization?
2. Describe the "domestic" or cottage system of the spinning and weaving industry of England in the eighteenth century.
3. What was the reason for the great demand for food and manufactured goods in England in the eighteenth century?

LECTURE III.

1. What is meant by the "industrial revolution" of the eighteenth century?
2. Name some of the points of difference between the factory system and the industrial organization that preceded it.

LECTURE IV.

1. What is meant by the *laissez-faire* theory of the functions of government, and how is the theory supported?
2. Compare the good and the bad characteristics respectively of the new industrial society.

LECTURE V.

1. What were the successive steps in English factory legislation?
2. What arguments have been used in favor of, and what opposed to, factory laws?
3. What do you think is likely to be the future course of factory legislation?

LECTURE VI.

1. What were the circumstances that led to the formation of trades unions?
2. Describe the opposition of the English law to trades unions and its removal.
3. What do you think are the good and what are the bad effects flowing from the existence of trades unions?

LECTURE VII.

1. Describe and distinguish the three forms of co-operation.
2. Find and report a full list of one or other of the forms of co-operation in the vicinity of Philadelphia, with the results of each experiment.
3. What are the probabilities of the future spread of profit-sharing?

LECTURE VIII.

1. Give a definition of socialism that will not exclude any system claimed to be socialistic, or include any principles not essential.
2. What is the relation between socialism, communism and anarchism?
3. Compare the social ideals of the early part of this century with those most generally prevalent now.

[Series A.]

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LECTURE I.

POETRY AND POETICAL APPRECIATION.

When the name of poetry was new, it signified emotional thought, music and rhythmical movement together. . . . Now the triple ecstasy exists no longer. The emphasis is marked, and the music is heard by an inner sense.—*Underwood.*

What Poetry is—Impassioned Prose—The Origin of Poetry—Poetry in Nature—All Persons more or less poetical—The First Literature of every Country Poetical—America an Exception—American Colonists were not a Primitive People—Poetry the natural mode of expressing Sublime or Ennobling Ideas—Poetical Language pleasing even to children—The Common Idea of boys, "I do not like poetry"—Must the Poet be "Born?"

Nature is full of Poetry, and every true soul responds.

As a first condition of poetic power, the poet must believe in his poetry. . . . The poet is a revealer, repeating to men what the Oversoul gives him to know; "for poetry was all written before time was; and whenever we are so finely organized that we can penetrate into that region where the air is music, we hear those primal warblings, and attempt to write them down."—*Cooke.*

COLONIAL POETRY AND COLONIAL POETS.

The verse writers of the Colonial Period were numerous, and all of them had their days of popularity. Their themes were ordinarily religious in character.

The Bay Psalm Book (1640).

The first book printed in America. "If, therefore, the verses are not always so smooth and eloquent as some may desire or expect, let them consider that God's Altar needs not our polishings."—*Preface.*

Selections: Stedman and Hutchinson's Library of American Literature, Vol. I, p. 211.

Duyckinck's Cyclopædia of American Literature, Vol. I, p. 16.

Anne Bradstreet (1612-1672).

The Tenth Muse Lately Sprung Up in America.

Selections: Stedman and Hutchinson's "Library," Vol. I, p. 311. Duyckinck's Cyclopædia, Vol. I, p. 47.

Peter Folger's "A Homely Plea for Toleration" (1618-1690).

Selections: Stedman and Hutchinson, Vol. I, p. 479. Duyckinck, Vol. I, p. 52.

Nicholas Noyes (1647-1717).

Selections: Stedman and Hutchinson, Vol. II, p. 206.

Thomas Godfrey (Phila., 1736-1763).

Selections: Stedman and Hutchinson, Vol. II, p. 492. Duyckinck, Vol. I, p. 195.

Philip Freneau (1752-1832).

Read: The Hour of Night—The College Examination—Eutaw Springs—The Indian Student—Lines to a Wild Honey-suckle.

Selections: Stedman and Hutchinson, Vol. III, p. 445. Duyckinck.

Francis Hopkinson (1737-1791).

Battle of the Kegs.

Selections: Stedman and Hutchinson; Duyckinck.

REVOLUTIONARY POETS.

The Rumbings of War Clouds—A Storm Bursts upon the Country—"New Occasions Bring New Duties"—Religion no Longer the Absorbing Idea—Change of sentiment in all kinds of writing—War Poets.

John Trumbull (1750-1831).

"McFingal."

It is obviously an imitation of Hudibras in its structure, epigrammatic terms of thought and grotesque rhymes.—*Underwood*.

Selections: Stedman and Hutchinson; Duyckinck.

Timothy Dwight (1752-1817).

Columbia, Columbia, to glory arise,

The queen of the world, and the child of the skies.

The author of a poem in eleven books called "The Conquest of Canaan," which is correct and decorous in form.—*Hawthorne and Lemmon*.

Joel Barlow (1755-1812).

"Hasty Pudding" and "The Columbiad."

His poems are vigorous and smoothly versified, after the style of Pope and Dryden.—*Underwood*.

Joseph Hopkinson (1770-1842).

"Hail Columbia."

Selections: Stedman and Hutchinson; Duyckinck.

Francis Scott Key (1779-1843).

"The Star-Spangled Banner."

EXERCISES.

1. Read selections from Philip Freneau's poems, and state whether they do or do not contain the elements of true poetry. Quote passages to illustrate.

2. Compare the first literary productions of some other Germanic people with those of America.

3. What are the elements of true poetry? Must a poet be "born?"

LECTURE II.

WILLIAM CULLEN BRYANT AND OTHERS.

INTERMEDIATE POETS.

Washington Allston (1779-1843).

"Sylphs of the Seasons."

Everything about him bespoke the man of intellect and refinement.—*Irving*.

John Pierpont (1775-1866).

"Passing Away."

Few of his pieces have the completeness that belongs to enduring works; but in almost all of them there are traces of the true fire, and here and there are couplets that any poet might be proud to own.—*Underwood*.

Richard Henry Dana (1787-1879).

"The Buccaneer."

His literary life began when the rhymed couplets of Pope were thought to be the highest form of poetical expression; he has lived to see the decline of that artificial school, and the rise of the nobler philosophical poetry of Wordsworth and his successors.—*Underwood*.

Lydia (Huntley) Sigourney (1791-1865).

Her poems have a musical flow, and are inspired with deep religious feeling.—*Underwood*.

See Duyckinck's *Cyclopædia*, Vol. II, p. 137, for a list of Mrs. Sigourney's works.

Charles Sprague (1791-2).

"Centennial Ode."

His poems are few in number, but are graceful and melodious.—*Underwood*.

William Cullen Bryant (1794-1878).

Biography—Our First Great Poet—Influence of English Poets—Wordsworth—Coleridge—Shelley—Byron—Keats, etc.

Thanatopsis.

A great poem; so great as to be an event and a landmark in literature.—*Hawthorne and Lemmon.*

It was without a harbinger in our literature, and without a trace of the English masters of the hour.—*George William Curtis.*

Compare, however, with portions of Blair's "Grave" and other English poems.

It is hardly too much to say that when you have read "Thanatopsis," you have read Bryant.—*H. and L.*

Read "Death of the Flowers," and compare verses 19-24 with the description of Autumn in *Evangeline*.

Autobiographical Pieces.

Entrance to a Wood; To a Waterfowl; Green River; Oh, Fairest of the Rural Maids; Hymn to Death; Death of the Flowers; The Future Life; The Life that Is; October, 1866; A Lifetime.

An American Poet.

Much of his poetry could hardly have been written elsewhere than in America, or by an American.—*Hawthorne and Lemmon.*

Read: Seventy-six; Our Country's Call; The Antiquity of Freedom; The Twenty-second of February; Oh, Mothers of a Mighty Race; Robert of Lincoln; Autumn Woods.

There was ice in his veins.—Read Lowell's Bryant in A Fable for Critics.

Bryant never wrote except in strict accord with his poetic conscience, and therefore what he gave us was of the very essence of his finest being, and more if it could well be spared.—*Abernethy.*

He is superior, also, in what may be called the power of condensed imagination, the art of presenting the greatest things in the finest words, and of suggesting the indescribable and the illimitable—*Ibid.*

In the spiritual depth of the inspiration of his nature-poetry and in its grave, majestic music, he has not been equalled by any American poet.—*Ibid.*

Of one hundred and seventy-one poems by Bryant, more than a hundred treat of some natural object, scene or phenomenon.—*D. J. Hill.*

He is not merely a worshipper at Nature's shrine, but a priest of her mysteries, and an interpreter of her symbolic language to men. Though he resembles Wordsworth in this bias of his genius, he resembles him in little else, and imitates nobody.—*Whipple.*

Compare :

Bryant's Oh, Fairest of the Rural Maids with
Wordsworth's Three Years She Grew in Sun and
Shade.

Bryant's The Fringed Gentian with
Wordsworth's Daffodil.

Bryant's To a Waterfowl with
Shelley's Address to the Flying Swan in Alastor.

Bryant's Bob-o-link with
Shelley's Skylark.

Bryant's morals are pointed so delicately and gracefully that they cannot offend, and cannot fail to please.—*Abernethy.*

Read : Our Fellow-worshippers, Deem not that they are blest alone, Thou whose unmeasured temple stands.

Among modern authors not one has shown a finer natural perception of the best qualities of blank verse, or has employed that simplest, yet most difficult of measures, with more distinguished success.—*Bayard Taylor.*

Compare :

Bryant's blank verse with Milton's, Shakspeare's, Wordsworth's ; Bryant's Monument Mountain with Byron's Storm in Alps ; Thanatopsis, with Darkness, in the opening of Byron's " Dream."

In the refining of his expression, Bryant was scrupulously nice, sometimes almost finical.—*Abernethy*.

In "The Land of Dreams," the atmosphere and movement are exquisite, the conception faultless, and the poet's imagination fuses into beauty all the elements of the conception. Criticism may rest before such a production.—*Hawthorne and Lemon*.

REFERENCES FOR BRYANT.

Bryant, by D. J. Hill, American Authors Series. Sheldon & Co., New York. Price, \$1.00.

Bryant, by Bigelow, American Men of Letters Series. Houghton, Mifflin & Co., Boston. Price, \$1.25.

Complete Poems, Household Edition. D. Appleton & Co., New York. Price, \$1.50; Cabinet Edition, price, \$1.00.

Bryant's Leaflets, compiled by Josephine E. Hodgson. D. Appleton & Co. Price, 40 cents.

Thanatopsis and Other Favorite Poems. Ginn & Co., Boston. Pamphlet.

Selections from Bryant's Poems, English Classic Series, No. 47. Effingham Maynard & Co., New York. Price, 12 cents.

EXERCISES.

1. Compare the poetry of the Revolutionary Period with that of prior date. Which has the more elements of true poetry?
2. What are the characteristics of Bryant's poetry?
3. Compare the poetry of the great English blank-verse writers.

LECTURE III.

**HENRY WADSWORTH LONGFELLOW AND
OTHERS.****HARBINGERS OF LONGFELLOW.****Joseph Rodman Drake (1795-1820).**

"The Culpit Fay" and "The American Flag"—The
American Keats—Compare his imagery with
Shelley's.

Fitz-Greene Halleck (1795-1867).

"Marco Bozzaris."

For a man who did so little, Halleck is well remem-
bered.—*Hawthorne and Lemmon.*

Edgar Allan Poe (1809-1849).

The Raven.

"Of his poems, not more than ten, or at most a dozen,
deserve study."

Henry Wadsworth Longfellow (1807-1882).

The warm, sympathetic, humane poet.

Biographical.

The Student—The Traveler—The Professor—The
Poet—His Home—His family—His Friends—
His Character: Kindly, religious, reverential, pa-
triotic—His Love for Children.

Autobiographical Poems.

Courtship of Miles Standish—Footsteps of Angels—
In the long and sleepless Watches of the Night
—To the River Charles—A Gleam of Sunshine
—The Two Angels—My Lost Youth—Three
Friends of Mine—From My Arm-Chair—Mor-
turi Salutamus—Killed at the Ford—The Village
Blacksmith.

In the character of the man himself could be found all that made his poetry delightful ; and his face was the mirror of his harmonious and lovely mind.
—*Hawthorne and Lemmon.*

Compare with Bryant.

If [Longfellow were] ever forced to paint the gates of the grave, he would be sure to plant some spring violet or anemone by the grim portals.—*Chamberlain in Literary World.*

The Psalm of Life

Is the appeal for sympathy of one who struggles and aspires.—*Hawthorne and Lemmon.*

The Arrow and the Song.

As many think, the most perfect of his smaller pieces.
—*Stoddard.*

The Wreck of the Hesperus.

Is deservedly admired, especially for the vigor of its descriptions.—*Underwood.*

The Skeleton in Armor.

Is perhaps the most purely imaginative of all our poet's compositions.—*Underwood.*

The Bridge.

The train of thought is tender, pathetic, natural !

The Building of the Ship

Is a better poem than "The Song of the Bell" [Schiller].—*Stoddard.*

The human interest in it just balances the ideal, and the whole is artistic and moving.—*Hawthorne and Lemmon.*

Belfry of Bruges.

Everything is clearly conceived and in orderly succession.—*Stoddard.*

Compare "Midnight Mass for the Dying Year" with
Tennyson's "Death of the Old Year."

"'Though old the thought and oft exprest,
'Tis his at last who says it best."

Songs.

Stars of the Summer Night.

Good Night! Good Night, beloved.

The Rainy Day.

Morituri Salutamus.

The grandest hymn to age that was ever written.—
Everett. He felt the poem; he made it; nor can
the keenest scalpel, by dissecting it into some-
thing else, prove it unpoetical.—*Hawthorne and*
Lemmon.

Even in subjects there is a greater and a less capac-
ity for what we may call the crystal treatment;
and Longfellow always selects those in which a
clear, still, pale beauty may be seen by a swift,
delicate vision, playing almost on the surface.—
London Spectator.

THREE AMERICAN POEMS.

Courtship of Miles Standish.

The lights and shades of the story use whatever
elasticity there is in the hexameter; crisp, varying
lines alternating with the steady pulse of the
dactyl."

"It is only Priscilla, the most natural and artless of
women, who fully charms us.—*Underwood*.

Hiawatha.

It has a unique beauty and fascination: as charming
as a fairy tale, there is a chord of wild melancholy
vibrating through it.—*Hawthorne and Lemmon*.

This song is a quaint chant, a happy illustration of
manners; but it lacks all the important elements
which go to the making of a poem.—*Blackwood's*
Magazine.

It has an inner beauty for those who know what poetry really is.—*Beers*.

His poem does not awaken one sympathetic throb; it does not teach a single truth.—*Boston Daily Traveller*.

The eight-syllable trochaic verse of *Hiawatha*, like the eight-syllable iambic verse of *The Lady of the Lake* and other of Scott's poems, has a fatal facility. . . . The recital of each line uses up the air of our natural expiration, so that we read, as we naturally do, eighteen or twenty lines in a minute without disturbing the normal rhythm of breathing, which is also eighteen or twenty breaths a minute.—*Holmes*.

Evangeline.

This is an American poem; . . . the first genuine Castalian fount which has burst from the soil of America.—*Fraser's Magazine*.

No one with any pretension to poetic feeling can read its delicious portraiture of rustic scenery, and of a mode of life long since defunct, without the most intense delight.—*Metropolitan*.

The *Evangeline* is the most perfect specimen extant of the rhythm and melody of English hexameter.—*King*.

With the sorrows of *Evangeline* a simpler rhythm would have been more in harmony.—*Athenæum*.

Imagine for one moment a story like this minced into octo-syllabics.—*Holmes*.

From the first line of the poem—from its first word—we read as we would float down a broad and placid river, murmuring softly against its banks, heaven over it, and the glory of the unspoiled wilderness all around.—*Holmes*.

REFERENCES FOR LONGFELLOW.

Biography, by F. H. Underwood. Osgood & Co., Boston, 1882.

Henry Wadsworth Longfellow—a Medley in Prose

and Verse, by R. H. Stoddard. Harlan & Co., New York, 1882.

Essays and Reviews (Longfellow), by E. P. Whipple. Houghton, Mifflin & Co., Boston.

Complete Poems, Household Edition. Houghton, Mifflin & Co., Boston. Price, \$1.50.

Biography, by W. S. Kennedy. D. Lothrop & Co., Boston, 1882.

Courtship of Miles Standish, Riverside Literature Series No. 2. Houghton. Price, 15 cents.

Longfellow Leaflets, Riverside Literature Series, Double Number. Houghton. Price, 30 cents.

Courtship of Miles Standish, Review by A. P. Peabody, *North American Review*, Vol. 88, p. 275.

EXERCISES.

1. Compare the lives of Bryant and Longfellow, and state the influence of the environment of each upon his poetry.

2. Compare Bryant's blank verse and Longfellow's hexameters.

3. Is there poetry in *Hiawatha*? Illustrate with quotations.

LECTURE IV.

EMERSON AND LOWELL—THE PROFOUNDER POETS.

RALPH WALDO EMERSON (1803-1882).

Biography.

Ancestry—Education—Teacher—Divine—Lecturer—Philosopher—The Friends of Emerson—Social, Political, and Religious Reformers.

Autobiographical Poems.

Good-bye—To Ellen—I grieve that better souls than mine, Walden, Dirge, Threnody, Terminus. His Hymn sung at the completion of the Concord Monument, in 1836, is the perfect model of an occasional poem.—*Beers*.

The strongest trait in Mr. Emerson's nature was his worship of the beautiful.—*Underwood*.

Emerson first appeared in print, as poet, on the banks of the Ohio. He contributed to the Western Messenger, *gratis*, Each and All, The Humble-bee, Good-bye, Proud World, and The Rhodora.—*Venable*.

Ernest in Hawthorne's "The Great Stone Facr" is said to be Emerson.

Poet and moralist, Emerson has beauty and truth for all men's edification and delight.—*Alcott*.

"Woodnotes" is full of lyrical ecstasy and lightsome tunes and graces. To assimilate such a poem of nature, or "The Problem," that masterpiece of religion and art, is to feed on holy dew.—*Stedman*.

His verse, in fact, is almost wholly void of the epic and dramatic elements which inform the world's great works of art.—*Stedman*.

The most popular of Emerson's poems are those devoted to nature and its manifestations. Some of these have a richness of expression, a wealth of meaning, a simplicity of style, and a depth of insight, seldom surpassed.—*Cooke*.

REFERENCES FOR EMERSON.

Poems, Household Edition, Houghton, Mifflin & Co., Boston. Price, \$1.50.

Ralph Waldo Emerson, by C. W. Cooke. James R. Osgood & Co., Boston, 1881.

Poets of America (Emerson), by E. C. Stedman. Houghton, Mifflin & Co., Boston. Price, \$2.25.

JAMES RUSSELL LOWELL (1819-1891).**Biography.**

The Boy—The Student—The Lawyer—The Editor—
The Minister.

Autobiographical Poems.

Threnolia, Irene, The Beggar, My Love, A Prayer, She
Came and Went, The Changeling, A Fable for the
Critics, The First Snowfall, After the Burial,
The Dead Home, Past my next Mile-stone waits
my Seventieth Year.

Poems on Lowell.

Longfellow's Herons of Elmwood, Holmes' Farewell
to Lowell, Whittier's Welcome, Holmes' Poem on
the Death of Lowell, October (1891) Atlantic.

He is a humorist, a writer of didactic verse, of songs
of freedom, and of majestic memorial odes.—
Smyth.

The poet is more concerned for the full expression of
his vigorous thought than for the melody of the
resulting lines.—*Underwood.*

Original he is not ; but the sum of civilized experience
and learning is in his words and gives them point
and impetus.—*Hawthorne and Lemmon.*

His verse, though without the evenness, instinctive
grace, and unerring good taste of Longfellow's, has
more energy and a stronger intellectual fibre.—
Beers.

Biglow Papers.

The point, vigor, wit, and perfect keeping of this satire
are admirable.—*Underwood.*

It is as unique as Longfellow's Hiawatha.—*Hawthorne
and Lemmon.*

Its grotesqueness—its utter lack of beauty—makes
one half regret its notoriety.—*Ibid.*

Never sprang the flower of art from a more unpromising soil; yet there are eclogues as true as those of Theocritus or Burns.—*Stedman*.

Lowell was under thirty at this time [of writing Biglow Papers], and fairly may be reckoned among poets who have done great work in youth.—*Ibid*.

Vision of Sir Launfal.

Owed its success quite as much to a presentation of nature as to its misty legend. It really is a landscape-poem of which the lovely passage, "And what is so rare as a day in June?" and the wintry prelude to Part Second, are the specific features.—*Stedman*.

A Fable for Critics.

Its selections are loosely united, the language and rhythm are at hap-hazard, and, on the whole, it is rather a careless production, however true to the time and tribe it celebrates.—*Stedman*.

A Nature Poet.

The charm of Lowell's outdoor verse lies in its spontaneity. . . . It does me good to see a poet who knows a bird or flower as one friend knows another, yet loves it for itself alone.—*Stedman*.

Read : The Indian Summer Reverie—To a Pine-Tree
—The Birch-Tree—To the Dandelion.

The opening phrase [of the last] ranks with the selectest of Wordsworth and Keats.—*Stedman*.

The Commemoration Ode

"Is strong, rich and massive, sparkling with gems of thought, and rising high in pinnacles of poetic beauty."

Another poet would have composed a less unequal ode; no American could have glorified it with braver passages, with whiter heat, with language and imagery so befitting impassioned thought.—*Stedman*.

When we read the tender story of *The First Snowfall*, the wise lessons of *Ambrose*, the prophetic strains of *The Present Crisis* and of *Villa Franca*, the wit and shrewdness of *Hosea Biglow*, the delicious humor of the garrulous *Parson*, the delicate beauty of *Sir Launfal*, the grandeur of *The Commemoration Ode*, the solemn splendor of *The Cathedral*, what can we do but wonder at the imaginative power that takes on these various shapes and moves in such diverse ways to touch our souls in every part?—*Underwood*.

REFERENCES FOR LOWELL.

James Russell Lowell, a Biographical Sketch, by F. H. Underwood. Houghton, Mifflin & Co., Boston. Price, \$1.50.

Poets of America (Lowell), by E. C. Stedman.

Poems, Household Edition. Houghton. Price, \$1.50. Riverside Literature Series, No. 15. Price, 15 cents.

James Russell Lowell, by Richard Henry Stoddard, *North American Review*, October, 1891.

An English Estimate of Lowell, by F. W. Farrar, *Forum*, October, 1891.

James Russell Lowell, by Geo. Stewart, *Arena*, October, 1891.

EXERCISES.

1. Compare Emerson's nature poetry with Bryant's.
2. Is Lowell's Estimate of Bryant (in *Fable for Critics*) correct?
3. Which is the more poetical—Lowell's *Commemoration Ode* or Longfellow's *Morituri Salutamus*?

LECTURE V.

JOHN GREENLEAF WHITTIER AND OTHERS.

The value of a literature is tested by the quality of its imaginative works. All works other than those of the imagination are of transitory interest, and, save as records, unimportant and unimportant to any except the special and temporary demand that calls them forth.—*Hawthorne and Lemmon.*

Walt Whitman (1819—).

Both instinct and judgment, with our Greek choruses in mind, and Pindar and the Hebrew bards, long since led me to number him among the foremost lyric and idyllic poets.—*Stedman.*

Those who are accustomed to associate the idea of poetry with regular classic measure in rhyme, or in ten-syllabled blank verse, or elastic hexameters, will commence these short and simple prose sentences with surprise, and will wonder how any number of them can form a poem.—*Underwood.*

Read *Leaves of Grass.*

Bayard Taylor (1825-1878).

He revelled in the effect of the broad English vowels, the "hollow æ's and œ's," and in the consonantal vigor of our language. . . . His art-method was simple and direct, obvious rather than suggestive. . . . He had the spontaneity of a born singer; but with it a facility that was dangerous indeed. His first draft was apt to be his best if not his only one.—*Stedman.*

Read *Love and The Masque of the Gods.*

T. B. Read—R. H. Stoddard—Julia Ward Howe—The Cary Sisters.

John Greenleaf Whittier (1807—).

Biography: The Barefoot Boy—The Academy—The Editor—The Abolitionist—A Friend among

Friends—A Pro-Slavery Mob—The Washington Era—The Atlantic Monthly—"The Wood-thrush of Amesbury."

Whittier has had no collegiate training, has not traveled out of his own country, and has never married.—*Hodgkins*.

See Lowell's "Fable for Critics" (Whittier). Read *Snow Bound* and *School Days*.

In War Time.

He often sacrificed art to opinion.—*Hawthorne and Lemmon*.

"Sincerity, charity, heroism and the spirit of human brotherhood breathe through his best verse."

If there is any Puritan strain in American poetry it is in the war-hymns of the Quaker. "Hermit of Amesbury."—*Beers*.

"His poems against slavery and disunion have the martial ring of a Tyrtæus."

The language of Whittier's war-like lyrics is Biblical.—*Beers*.

Compare Ichabod with Browning's *Lost Leader*.

He is the fiery apostle of human brotherhood, and has chanted anathemas against war and every form of cruelty and superstition.—*Underwood*.

We have in vain searched these poems to find one trace of base wrath or of any degenerate or selfish passion.—*Wasson*.

After the Struggle.

Those who from prejudice had failed to see the genius that shone in his fiery lyrics were, after a time, forced to admire the pensive beauty of "The Last Walk in Autumn," the pathetic grace of "Maud Muller," the intense realism of the winter idyl of "Snow Bound," the vivid picture of Skipper Ireson's Ride," and the bright and tender memories of "The Barefoot Boy."—*Underwood*.

What he has written is a product as natural and indigenous as our golden maize or our magnolia blossoms.—*Ibid.*

Snow Bound.

Recalls the "Winter Evening" of Cowper's "Task," and Burns' "Cotter's Saturday Night," but in sweetness and animation is superior to either of them.—*Beers.*

Compare portions with Goldsmith's Deserterd Village.

His muse is a country maid, with a free step, exuberant health and natural graces.—*Underwood.*

He loved the hills, valleys and coast of New England; he loved its legends and its history, and he has a happy power of graphically picturing the essence of their charm.—*Hawthorne and Lemmon.*

He is characteristically and almost exclusively American in his theme; and he reaches the heart of the people as a poet of higher culture might fail to do.—*Ibid.*

His touch, uniformly light and graceful, is sometimes too careless.—*Ibid.*

Religion of Whittier.

Many of his purely devotional pieces are religious poetry of a high order.—*Beers.*

Read: The Two Rabbis, The Hermit of the Thebaid, Mary Garvin, Eternal Goodness.

"The catholic mind of this writer and his instinct for discovering the pure moral in human action are disclosed by a number of poems drawn from a wide range of historical fact, dealing with a great variety of religious faiths and circumstances of life, but always pointing to some sweet and strong truth of the Divine life."

As a Poet.

When his true genius is in the ascendancy, Whittier is a simple, charming, original poet.—*Hawthorne and Lemmon.*

If there is one in our age whom all men will admit to have been born a poet, it is Whittier. He is less indebted to art, to scholastic culture, to influences of literary companionship and to other adventitious aids than any of his brethren.—*Underwood*.

He is not only a real poet, but he is *all* poet. The Muses have not merely sprinkled his brow; he was baptized by immersion. His notes are not many, but in them Nature herself sings.—*Wasson*.

As an artist in verse, Whittier is strong and fervid, rather than delicate or rich.—*Beers*.

Whittier is as profuse with gems as other bards are with imitations.—*Underwood*.

Read : From *Tent on the Beach*, *The Wreck of Rivermouth* and *the Maids of Attitash* : Also *The Singer* (Alice Carey), *The River Path*, *The Robin*, *Wordsworth* and other poems.

REFERENCES FOR WHITTIER.

Poems. Household Edition. Houghton, Mifflin & Co., Boston. Price, \$1.50.

Riverside Literature Series, Nos. 4, 5 and 41. Houghton. Price, 15 cents each.

Whittier Leaflets. Houghton. Price, 30 cents.

Poets of America (Whittier), by E. C. Stedman.

EXERCISES.

1. What are the characteristics of Whitman's poetry?
2. Point out the American elements in Whittier's *Snow Bound*, and compare with the English elements in *Goldsmith's Deserted Village*.
3. From a literary standpoint, what is the value of Whittier's "In War Time" poems?

LECTURE VI.

OLIVER WENDELL HOLMES AND OTHERS.

A single lyric is enough, if one can only find in his soul, and finish in his intellect, one of those jewels fit to sparkle on the outstretched forefinger of all time.—*Holmes*.

Francis Bret Harte (1839).

His poetry is, like the rhyming of his master, Thackeray, the overflow of a rare genius, whose work must be counted among the treasures of the language.—*Stedman*.

Joaquin Miller (1841).

Still has years before him, and often lyrics from his pen suggest that, if he would add a reasonable modicum of purpose to his sense of beautiful, the world would profit by the result.—*Stedman*.

John G. Saxe (1816-1887).

His good-natured satire does not cleave to the depths, nor is his humor of that quality which reaches to the sources of feeling, and which gives us the surprises of an April day.—*Underwood*.

Oliver Wendell Holmes (1809).

Ancestry—At Phillips-Andover Academy—At Harvard—"The Boys"—Lawyer—Doctor—Professor—Birthday Breakfast—Seventy-fifth Birthday.

Autobiographical Poems.

Parson Turell's Legacy—The Opening of the Piano—Dorothy Q.—A Family Record—The Iron Gate—The School Boy and others

"The earlier poems of Holmes are frequently written in the favorite measures of Pope and Hood."

Not at all like that ponderous and overbearing autocrat, Dr. Johnson, is our Yankee friend. He has more of Goldsmith's sweetness and lovability.—*British Review*.

He is as true a lover of elegance and high-bred grace, dainty fancies, and all pleasurable things, as was Leigh Hunt.—*Ibid.*

Holmes' poems are neat and witty and original. They are always happy and full of melody.—*Smythe.*

The intellect of Holmes, though manifesting many and strongly-marked attributes, eludes all tests, preserves its individuality, and remains unclassified among original elements.—*Underwood.*

Representative poems are, *The Constitution*, *The Wonderful One-Horse Shay*, and *The Chambered Nautilus*—the first illustrating his patriotic style, the next his comic humor, and the third his highest plane of sentiment.—*Hawthorne and Lemmon.*

The Chambered Nautilus is a graceful and artistic piece of symbolism.—*Ibid.*

His lyrics have the high spirit of the best pieces of Campbell.—*Underwood.*

His character-drawing is graphic, and he has a sharp ear for idioms and intonations of speech.—*Hawthorne and Lemmon.*

His resources in the way of figure, illustration, allusion and anecdote are wonderful.—*Beers.*

Holmes, the Humorist.

Wit, with glittering eye and assailing forefinger; Irony, with mouth awry, one side of the face severe, and the scornful tongue in the cheek of the other; Puns, like Siamese twins in harlequin suits, turning somersaults; grave figures in dominoes, with the port of Lord Bacon, or the mocking smile of Voltaire; and white-robed Sentiment, her tender bosom heaving, her dewy tears scarce brushed away, and she mortally afraid of being made ridiculous by some prank of the merry company.—*Underwood.*

EXERCISES.

1. Is there poetry in Holmes' occasional poems?
2. Who are the great American humorists?
3. Compare the humor of Harte, Saxe, and Holmes.

REFERENCES FOR HOLMES.

Life of Oliver Wendell Holmes, by E. E. Brown. D. Lothrop & Co., Boston.

Poems, Household Edition. Houghton, Mifflin & Co., Boston. Price, \$1.50.

Holmes' Leaflets, compiled by Josephine E. Hodgdon. Houghton. Price, 30 cents.

GENERAL REFERENCES.

History of American Literature, 1607-1763, by Moses Coit Tyler. Putnam's Sons, New York.

Poets of America, by E. C. Stedman. Houghton, Mifflin & Co., Boston. Price, \$2.25.

American Literature, by C. F. Richardson, 2 vols. Putnam's Sons, New York.

American Authors, by F. H. Underwood. Lee & Shepard, Boston.

American Literature, by Hawthorne and Lemmon. Heath & Co., Boston.

Any good recent English literature will be found to contain a department devoted to American authors.

Library of American Literature, by Stedman and Hutchinson, 12 vols.

Cyclopædia of American Literature, by Duyckinck, 2 vols.

Cyclopædia of American Biography. D. Appleton & Co., 6 vols.

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LECTURE I.

Geology is the history of the earth, as revealed by a study of its structure. Geology is the most comprehensive of the sciences, and makes use of all the others as auxiliaries.

In order to understand the changes which the earth has undergone in the past, it is necessary to examine all those agencies which are now modifying it. We must not assume cataclysms and unknown forces until it can be shown that causes now operative are insufficient to explain the facts. The study of these agencies constitutes *Dynamical Geology*.

A second department of the subject is *Structural Geology*, the study of the form, composition, and structure of the earth and the rocks which make up its crust.

Historical Geology is the study of the earth's development through past ages and the description of this development in chronological sequence.

DYNAMICAL GEOLOGY.

Dynamical agencies may be classified as destructive and constructive, or, without reference to the kind of work performed, may be divided into (1) igneous; (2) atmospheric; (3) aqueous; (4) organic. Matter is indestructible; these forces only change its position and chemical relations.

IGNEOUS AGENCIES.

These are all connected with the interior heat of the earth, and are of constructive tendency.

The earth's interior is at a high temperature. Proofs of this: mines, borings, thermal springs, etc.

Theories as to the internal constitution of the earth :
 (1) The thin-crust theory ; (2) theory of a solid earth ;
 (3) theory of a solid nucleus with interposed layer of fused matter.

HOME READING.

LeConte's Elements of Geology, pp. 1-2, 82-87.

Geikie's Class-book of Geology, pp. 1-9, 93-95.

HOME WORK.

1. State the problem which geology has to solve, and point out the methods by which the solution is attempted.
2. If we assume that past changes in the earth's structure have been caused by forces which are still in operation, why does it follow that the earth's history must be an enormously long one ?
3. State the theories as to the internal constitution of the earth, with the evidence for and against each.

LECTURE II.

IGNEOUS AGENCIES.

I. VOLCANOES.

Usual definition incorrect, no combustion involved.

Distribution of volcanoes along three main lines.
 Their numbers, arrangement and parallelism to the coast lines and mountain chains.

Phenomena of eruption. Their differences in different volcanoes and fundamental unity. Stromboli, Vesuvius, Mauna Loa, Krakatoa, Skaptar Jokul. In all cases steam the active cause.

Volcanic products : (1) Lava ; (2) fragmental products ; (3) gases.

Formation of volcanic cones ; their differences.

Fissure eruptions ; Idaho and Washington.

Submarine volcanoes. Volcanoes formed in historic times.

2. EARTHQUAKES.

Vibrations of the earth's crust produced by a shock in the interior.

Elastic waves propagated like sound-waves.

Mode of determining the seat of disturbance or *focus*.

Distribution and frequency of earthquakes and relations to volcanoes. Phenomena of shock.

Earthquakes in the sea-bed and accompanying waves.
Geological work.

HOME READING.

LeConte, pp. 87-97 ; 111-183.

Geikie's Class-book of Geology, pp. 95-111.

Geikie's Geological Sketches, p. 237.

HOME WORK.

1. State the laws of the distribution of volcanoes and earthquakes, and show how they are related to each other.

2. Point out the errors in the following statements :
"There is no evidence of a volcanic eruption on the continent of North America in past geological ages that surpassed recent ones in volume. . . . Electricity is a factor in all earthquakes and volcanic disturbances. Its action is manifest in the undulatory disturbances on the surface of the earth and in the speed with which the earthquake wave travels."

LECTURE III.

3. OSCILLATIONS OF LEVEL.

The land changes, not the sea.

Changes of level accompanying earthquakes ; *e.g.*, coast of South America ; Temple of Jupiter Serapis.

Changes of level not accompanied by earthquakes ; *e.g.*, Scandinavia, Greenland.

Method of determining changes of level.

4. MINOR VOLCANIC PHENOMENA.

1. Geysers, their distribution, mode of eruption and causes.

Thermal springs; two classes: *a.* Those due to the presence of uncooled lava. *b.* Those due to the folding of the strata, which allows water to reach great depths and return to the surface.

Distribution of thermal springs in the United States.

CAUSES OF THE IGNEOUS AGENCIES.

All igneous agencies are produced by the interior heat of the earth, and therefore theories about them will depend upon the view taken as to the internal constitution of the earth.

In volcanoes, two things to be accounted for: (1) High temperature; (2) presence of imprisoned steam. Internal fluidity theory; chemical theory; aqueo-igneous theory; mechanical theory.

Earthquakes clearly connected with volcanoes. Two causes: (1) Explosions of imprisoned steam; (2) yielding of the crust to secular contraction.

HOME READING.

LeConte, pp. 97-110, 138-9.

Geikie, pp. 112-114.

HOME WORK.

1. How can elevation or depression of land be proved in any given case?
2. Give an account of Bunsen's theory of geysers.
3. What are the special difficulties in the way of forming a tenable theory of volcanoes?

LECTURE IV.

ATMOSPHERIC AGENCIES.

These are destructive in tendency, the decomposition of rock and formation of soil being their work.

1. Rain destroys rock *chemically* by dissolving the soluble parts, and causing the rest to crumble; *mechanically* by washing away debris. Effects of maximum and minimum rain-fall. "Bad Lands" of the West. Effects of weathering upon different kinds of rock; *chemical* composition more important than hardness.

2. *Frost* very destructive, depends upon the expansive power of solidifying water.

3. *Wind* by driving sand erodes rock in dry regions.

4. *Changes* of temperature split up rocks by unequal expansion and contraction.

Atmospheric erosion the most important, because always and everywhere active.

AQUEOUS AGENCIES.

Springs, rivers, lakes, the sea, glaciers and icebergs. These do much work destructively, but transportation and construction their more important functions.

I. SPRINGS.

Mode of formation and varieties of springs. Chemical and mechanical work done by them. Underground waters, caverns, etc.

HOME READING.

LeConte, pp. 3-8, 74-79.

Geikie, pp. 10-22, 49-60.

Jukes-Browne, Handbook of Physical Geology, pp. 65-96.

HOME WORK.

1. Give a general account of the geological work performed by the atmosphere.
2. What determines the course of underground waters? Explain the bearing of this upon sanitary engineering.

LECTURE V.

2. RIVERS.

Action of running water. Laws of river erosion and transportation. Base-level of erosion. Simeto, Niagara, Colorado.

Combined work of river and atmospheric erosion.
River construction; shoals, islands, deltas and bars.

3. THE OCEAN.

The sea erodes the coast by means of waves and tides, cutting it back like a horizontal saw.

Marine construction. Arrangement into beds or strata; order of superposition.

Laws of stratification. Distinction between deep and shallow-water deposits.

4. LAKES.

How lacustrine formations differ from marine. Characteristic mechanical and chemical deposits in fresh and salt lakes.

5. GLACIERS AND ICEBERGS.

Conditions of glacier formation. Mode of forming ice from snow. Glacier motion.

Geological work of glaciers; characteristics of glacier erosion. Medial, lateral and terminal moraines.

Icebergs formed from glaciers which enter the sea. Their work as transporting agents.

HOME READING.

LeConte, pp. 9-73, 79-82.

Geikie, pp. 23-48, 61-80.

HOME WORK.

1. How and why do jetties at a river's mouth affect the formation of bars?
2. Criticise the following statement: "The greater number of valleys in North America have been carved out by the streams flowing in them at substantially the same rate of excavation that is now in progress."
3. Why are glaciers so rare in the Rocky Mountains? In the tropics?

LECTURE VI.

ORGANIC AGENCIES.

Protective effects of vegetation.

Destructive effects of vegetation.

Constructive work of animals and plants.

1. VEGETABLE ACCUMULATIONS.

Formation of peat and coal by accumulation of vegetable matter under water. Proofs that coal is of vegetable origin and that it was accumulated in ancient peat-bogs. Varieties of coal.

Iron ore formed by the agency of decomposing vegetable matter.

2. ACCUMULATIONS OF LIME.

Formed chiefly in the sea by the hard parts of animals:

(1) Molluscs; (2) crinoids; (3) foraminifera; (4) corals. Coral reefs, their varieties and mode of formation.

Chemically formed limestones.

Fresh-water limestones and marls.

3. ACCUMULATIONS OF FLINT.

Diatomes.

Radiolaria.

Tendency of the igneous agencies to increase inequalities of the earth's surface, of the aqueous agencies to diminish them. Circulation of matter in the world of rocks. Organic agencies the means of returning dissolved matters to the land.

HOME READING.

LeConte, pp. 140-161.

Geikie, pp. 81-92.

HOME WORK.

1. State the proofs of the vegetable origin and mode of accumulation of coal.

2. Criticise the following statement : " Coal consists of 90 parts pure carbon, 6 parts water, and 4 parts vegetable matter. The coal beds were formed out of vegetable matter which grew in the antediluvian seas, and not on the land."

3. Point out the errors in the ordinary view of coral reefs.

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Exercises for the lectures of each week will be found at the end of each lecture. All persons attending the lectures are invited to send written answers; they should be addressed to Mr. W. B. Scott, No. 56 Bayard Avenue, Princeton, N. J., and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. The papers will be returned, with comments, at the class, when further explanations on the general subject will be made. All are invited to the class, whether they have sent exercises to the lecturer or not.

Syllabi of all the courses, the *University Extension* journal, and all Extension literature can be obtained at all the leading book stores and at all Extension centres.

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STRUCTURAL GEOLOGY.

LECTURE VII.

The substances which make up the earth's crust are *rocks*; these are mechanical mixtures of *minerals*. A mineral is a natural inorganic substance which has a definite chemical composition and (usually) a definite crystalline form. Minerals are numbered by thousands, but only a few are sufficiently abundant to be of geological importance.

1. QUARTZ GROUP.

1. Quartz, Amethyst, etc.
2. Opal, Flint, Agate, etc.

2. FELSPAR GROUP.

1. Orthoclase, Albite.
2. Oligoclase, Labradorite, Anorthite.

3. HORNBLLENDE GROUP.

1. Hornblende.
2. Augite.
3. Olivine.

4. MICA GROUP.

1. Muscovite.
2. Biotite.

5. CALCAREOUS GROUP.

1. Calcite.
2. Dolomite.
3. Selenite.
4. Apatite.

6. IRON GROUP.

1. Magnetite.
2. Hæmatite.
3. Limonite.
4. Spathic iron.
5. Iron pyrites.

HOME READING.

Geikie, pp. 115-138.

Jukes-Browne, pp. 233-251.

HOME WORK.

1. What is the distinction between rocks and minerals? What is the most abundant mineral? Why?
2. What substances result from the decomposition of the felspars?

LECTURE VIII.

ROCKS.

Classified in accordance with mode of origin into (1) Igneous; (2) sedimentary; (3) metamorphic.

1. IGNEOUS ROCKS.

Classification. Mineralogical composition. Proofs of origin. Texture.

2. SEDIMENTARY ROCKS.

Mode of origin. Proofs of this. Mineralogical composition.

3. METAMORPHIC ROCKS.

Mineralogical composition. Classification.

Causes of metamorphism: (1) Heat; (2) water; (3) pressure, and (4) alkaline solutions.

Proofs of the mode of origin of metamorphic rocks. Relations of metamorphism to age.

Local and regional metamorphism.

HOME READING.

Geikie, pp. 139-170.*Jukes-Browne*, pp. 252-298.

HOME WORK.

1. Prove that metamorphic rocks were originally sedimentary.
2. How are quartzite, slate and gneiss formed?
How does the texture of an igneous rock show the rate at which it has cooled?

LECTURE IX.

IGNEOUS ROCKS.

1. Contemporaneous rocks. Volcanic rocks. Interbedded sheets.
2. Intrusive rocks. Dikes and veins. Intrusive sheets. Laccolites. Plutonic rocks.

SEDIMENTARY ROCKS.

Laws of the mode of formation and succession of sedimentary rocks.

Definition of terms layer, lamina, stratum, formation.

Displacements of strata. Folds: Anticlinal, synclinal, isoclinal, monoclinal. Outliers. Inliers. Outcrop. Dip and strike.

Dislocations of strata. Fissures. Faults. Law of faults. Effect of faults upon topography and outcrop.

Joints, cause of. Effect upon topography and outcrop.

Cleavage, cause of. Relation to axes of folds.

Causes of folding and faulting. Hypothesis of secular contraction.

Unconformity and overlap.

HOME READING.

LeConte, pp. 170-219.*Geikie*, pp. 171-211.

HOME WORK.

1. How can contemporaneous igneous rocks be distinguished from intrusive rocks?
2. Explain the causes of folding and faulting, and the evidence for the theory adopted.
3. What are the effects upon outcrop of strike and dip faults respectively?

LECTURE X.

MINERAL VEINS.

Classification and characteristics of.

Metalliferous veins, laws of. Surface changes. Theory of formation.

GEOLOGICAL MAPS.

Interpretation of. How constructed. Sections and how to construct them.

ORIGIN OF CONTINENTS AND MOUNTAIN CHAINS.

Surface features of the earth. Continents and oceans and their relations to each other.

Structure of mountain chains and their relations to the coast lines.

Thickness of strata in mountains and explanation of this. Evidences of compression; folding, faulting, metamorphism and cleavage.

DENUDATION.

Evidence as to the amount of material removed in any region.

How the position of valleys and hills is determined.

Why rivers so often cut through hills and mountain ranges instead of flowing around them.

Ways in which the final shaping of the earth's surface is produced.

Effects upon topography of the character and arrangement of the rocks.

HOME READING.

Le Conte, pp. 234-272.

Jukes-Browne, pp. 455-498.

HOME WORK.

1. State and explain the laws which govern the occurrence and richness of metalliferous veins.
2. How are geological maps and sections made, and what do they mean?
3. What has become of all the material removed from the land surface by erosion?

LECTURE XI.

FOSSILS.

What fossils are.

Degree and manner of preservation.

1. Preservation of the actual substance.
2. Pseudomorphs.
3. Moulds.
4. Casts.
5. Footprints.

Fossils occur only in sedimentary, and very rarely in metamorphic rocks.

Imbedding of organisms on land.

Terrestrial species in aquatic deposits.

Imbedding of aquatic species.

Conclusions to be drawn from the study of fossils:

1. Arrangement of strata into groups.
- Limitations of this method.
2. Mode in which any given stratum was accumulated.
 3. Conclusions as to former changes of climate may be drawn from fossils. Cautions as to such conclusions.
 4. Testimony of fossils to the uniformity of nature.

HOME READING.

LeConte, pp. 190-195.

Geikie, pp. 212-225.

HOME WORK.

1. What are fossils, and how did they reach the places where we now find them?
2. What precautions must be used in drawing inferences as to climatic changes from the study of fossils?
3. Criticise the statement that "no terrestrial animals or plants are found fossil in the rocks." Why are birds rare as fossils?

LECTURE XII.

GENERAL PRINCIPLES OF HISTORICAL GEOLOGY.

Primordial condition of the earth. Nebular hypothesis.

Succession of strata in any given locality. Grouping of strata by means of the contained fossils. Classification of geological time.

Analogy with the periods of human history.

How the strata of one continent may be correlated with those of others.

Divisions of time, Eras, Ages, Periods, Epochs, etc.

Effects of local changes of level, unconformities, etc.

The Eozoic Era, evidences of life.

The Palæozoic Era, characteristics of palæozoic life and special peculiarities of the Silurian, Devonian and Carboniferous Ages.

The Mesozoic Era.

The Cenozoic Era, including the Tertiary and Quaternary Ages.

Mode of growth of the North American Continent as compared with that of Europe.

General conclusions as to the permanency of the continental platforms and oceanic depressions.

HOME READING.

LeConte, pp. 279-295, 414, 497-502.

Geikie, pp. 226-236.

HOME WORK.

Criticise fully the following statement : " If there had been no submarine agencies at work in the antediluvian seas when the present continents were covered with water, the appearance of the chalk formation would have been unbroken. The interruptions in this uniform appearance were caused by the formation of the coal measures in one district, of the Silurian rocks in another, etc. ; . . . but all these operations were going on contemporaneously."

[Series A.]

UNIVERSITY EXTENSION LECTURES
UNDER THE AUSPICES OF
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FOR THE
EXTENSION OF UNIVERSITY TEACHING.

SYLLABUS
OF A
COURSE OF SIX LECTURES
ON
The Economic Condition of the People
of the United States Between
1789—1816.

BY
JOHN BACH MCMASTER,
PROFESSOR OF AMERICAN HISTORY, SCHOOL OF AMERICAN HISTORY AND
INSTITUTIONS, UNIVERSITY OF PENNSYLVANIA.

No. 18.

Price 10 Cents.

LECTURES ON THE HISTORY OF THE PEOPLE OF THE UNITED STATES.

COURSE I.

THE PERIOD OF ACQUISITION AND OCCUPATION OF THE PUBLIC DOMAIN.

- LECTURE I.—The Struggle for the Mississippi Valley.
“ II.—The Struggle for the Gulf Coast and the Northwest.
“ III.—The Movement of Population Westward.
“ IV.—Highways of Trade and Commerce.
“ V.—The Laborer and his Hire.
“ VI.—Civil and Political Rights of Man.

COURSE II.

THE STRUGGLE FOR COMMERCIAL INDEPENDENCE.

- LECTURE I.—Struggle for a Government with Power to Regulate
Trade, 1783-1789.
“ II.—Struggle for Neutrality, 1793-1801.
“ III.—Free Trade and Sailors' Rights, 1804-1807.
“ IV.—The Long Embargo, 1807-1809.
“ V.—French Decrees and British Orders, 1806-1812.
“ VI.—War for Commercial Independence, 1812-1815.

COURSE III.

PRESENT DAY LECTURES.

- LECTURE I.—Uses made of the Public Lands.
“ II.—“ Money and the Mechanisms of Exchange.”
“ III.—Rise of Manufactures, and the Tariff.
“ IV.—The Canadian Fisheries and Behring Sea.

EXERCISES.

Exercises for the lectures of each week will be found at the end of the syllabus. All persons attending the lectures are invited to send written answers; they should be addressed to Prof. John Bach McMaster, University of Pennsylvania, and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. The papers will be returned, with comments, at the class, when further explanations on the general subject will be made. All are invited to the class, whether they have sent exercises to the lecturer or not.

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COURSE I.

THE PERIOD OF ACQUISITION AND OCCUPATION OF THE PUBLIC DOMAIN.

LECTURE I.

THE STRUGGLE FOR THE MISSISSIPPI VALLEY, 1754-1803.

European title to American soil. Occupation of the Atlantic slope by the English, Spaniards, Dutch and Swedes. Occupation of the Mississippi Valley by the French. The first struggle for possession. The French expelled. The Spanish cession to England. The proclamation line. The Florida boundary. Louisiana. The war for independence. The second struggle for the valley. United States and England. Spain and England. Spain and the United States. The treaty of peace and the boundary line. The secret article. Spain secures Florida. The third struggle for the valley. United States and Spain. The river closed. The Spanish conspiracies. The treaty of 1795. The right of deposit. Louisiana given to France. Louisiana sold to the United States. Right of deposit withdrawn. The valley won.

READINGS.

MONETTE: *History of the Valley of the Mississippi.*

PARKMAN: *La Salle and the Discovery of the Great West.*

PARKMAN: *Montcalm and Wolfe.*

HINSDALE: *The Old Northwest*, Chaps. 2, 3, 4, 5, 10.

ADAMS (Henry): *History of the United States*, Vol. I, Chaps. 14, 15, 16, 17; Vol. II, Chaps. 1, 2.

LECTURE II.

THE STRUGGLE FOR THE GULF COAST AND THE NORTH-WEST, 1803-1850.

Our claim to West Florida. The offer to Spain. Attempt to fix a boundary for Louisiana on the west. Fall of the Spanish monarchy. Revolt of the Spanish provinces in America. The State of New Feliciana. United States takes possession of West Florida. Negotiations for the occupation of East Florida. The Spanish treaty of 1819. The United States of Mexico. Settlement of Texas. Offers to buy Texas. Independence of Texas. The question of annexation. Our three claims to Oregon. Dispute with England. Joint occupation. Monroe Doctrine. The treaty with Russia. The school books and $54^{\circ} 40'$. The Flathead Indians and the Bible. Whitman's Ride. The Webster-Ashburton treaty. The campaign of 1844. "Re-annexation of Texas. Re-occupation of Oregon." "Fifty-four-forty-or-fight!" "Give us Texas or divide the spoons." Texas annexed. Notices served on England. The Forty-ninth parallel carried to the Pacific. California, Utah, New Mexico, Arizona and Alaska.

READINGS.

ADAMS (Henry): *History of the United States*, Vol. II, Chaps. 3, 11, 12, 13; Vol. III, Chaps. 2, 3, 5, 6.

BARROW'S *Oregon*. (American Commonwealth Series.)

GREENHOW: *History of Oregon and California*.

IRVING: *Astoria*.

VON HOLST: *Constitutional History of the United States*. 1828-1846. Chap. 7.

LECTURE III.

THE MOVEMENT OF POPULATION WESTWARD.

The population of the English Colonies in America. The movement westward begins. The proclamation line. Population in 1783. Migration from the old States. The

Northwest territory. The plan for cutting it up. Population in 1790. The frontier ; the cities ; the States. The three great routes of migration. The rage for emigration, 1790-1800. The New England stream. The Middle State stream. The Southern stream. The frontier in 1810. Depopulation of the Atlantic slope. Economic effects. Legislative action. The three streams and the frontier in 1820. Effect of internal improvements. Migration checked. The frontier in 1830. Effect of manufactures and the railroads. The rush to the cities. The frontier in 1840. Discovery of gold. Settlement of the Pacific slope. Discovery of silver. Effect of the war. Interstate migration. Population distributed in bands. Economic effects. Distribution of the natives of Europe. Distribution of the sexes.

READINGS.

Tenth Census of the United States, Vol. I.

SMITH (R. M.): *Emigration and Immigration—a Study in Social Science*.

The First Century of the Republic (Harper & Bros.), Chap. 8.

LECTURE IV.

THE HIGHWAYS OF TRADE AND COMMERCE.

Effect of the rapid movement of population westward. Inability of the States to keep pace with it. Modes of travel in 1790. The stage-coach—the packet-boat. Condition of the roads. Lack of bridges. Dangers of the ferries. The era of turnpikes, bridges and canals. Government aid for internal improvements. The Cumberland Road. Gallatin's Report. Applications to Congress from 1806-1812. The steamboat. Fitch, Rumsey, Stevens, Fulton, etc. Fulton's monopoly. Quarrel between New Jersey and New York. Early steamboat companies. The canal era. The Erie Canal. Pennsylvania system. The railroad. Opposition to the railroad. The locomotive, the

roadbed. The difficulties of travel. Economic effect of the improvement of means of transportation, 1790-1830.

READINGS.

RINGWALT: *Development of Transportation System in the United States.*

W. H. BROWN: *History of the First Locomotives in America.*

PREBLE: *History of Steam Navigation.*

LECTURE V.

THE LABORER AND HIS HIRE.

Status of slavery in 1790. The Slave States. The Free States. States having gradual abolition laws. The slave trade. The slave code. The redemptioner. His contract, time of service, treatment, laws protecting. Fondness for running away. Advertisements for his recovery. Decline of the custom. The apprentice. The free laborer. The field of labor contracted. Hours of labor. Scarcity of skilled workmen. Wages. Labor organization. Early strikes. Hardships of the laborer's lot. Benevolent societies. Labor of women and children in the factories. Has the condition of the laborer improved?

READINGS.

STROUD'S *Slave Laws.*

LECTURE VI.

THE CIVIL AND POLITICAL RIGHTS OF MAN.

The citizen, the freeman and the elector. Provisions in the State constitutions concerning. The right to vote. The manner of voting. The right to hold office. Restrictions on office-holding. Religious tests. The spread of democracy. Nominating for office. The caucus. The gerrymander. The spoils of office. Duties of the citizen toward the State. Duties of the State toward the citizen.

READINGS.

POORE : *Federal and State Constitutions.*

JOHNSTON'S *Connecticut* (American Commonwealth Series),
pp. 331-337.

EXERCISES.

LECTURE I.

Write a summary of the claims of England, France and Spain to territory in North America. Explain the attitude of France and Spain toward the United States, at Paris, 1781-1783. Describe our relations with Spain from 1783-1800. Why did Louisiana pass from Spain to France and from France to the United States?

LECTURE II.

State the claims of the United States and Spain to West Florida, and describe the boundary line of 1819. Explain, fully, the way by which Texas and Oregon became involved in the campaign of 1844.

LECTURE III.

Describe the movement westward of the northern, middle and southern streams of population from 1790-1820. Describe the characteristics of interstate migration.

LECTURE IV.

Describe the rise of internal improvements in the United States. State some of the economic effects which followed: (a) the introduction of the turnpike system; (b) the Erie Canal; (c) the railroad.

LECTURE V.

Write a brief account of the condition of the slave, the redemptioner and the free laborer in 1800.

LECTURE VI.

Give a summary of the provisions in the State Constitutions regarding the right to vote, and the right to hold office, in 1800. How was citizenship acquired in the various States? What was the origin of "gerrymander"?

Publications of the American Society.

"University Extension: Its Definition, History, System of Teaching and Organization."

This pamphlet has especial reference to Extension Teaching in the United States. 10 cents.

"Report upon the University Extension Movement in England." By George Henderson, Secretary of the American Society. 10 cents.

The University Extension Movement in England. By R. G. Moulton. 10 cents.

A Lecturer's Notes on the Working of University Extension. By R. G. Moulton. 10 cents.

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"University Extension." By Sidney T. Skidmore. 10 cents.

(Reprinted from October Number of Lippincott's Magazine.)

General Circular (Free).

Home Study Circular (Free).

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PHILOSOPHY.

George S. Fullerton—Psychology.

HISTORY.

C. M. Andrews—Political History of Europe (1815-1849).

E. P. Cheyney—Central Europe in the Nineteenth Century (1848-1878).

F. N. Thorpe—American History—(a) The Civil Development of the United States.

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E. D. Cope—Geology. (47 pp.) 25 cents.

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Robert E. Thompson—English Literature.

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EXTENSION OF UNIVERSITY TEACHING.

SYLLABUS
OF A
COURSE OF SIX LECTURES
ON
AMERICAN LITERATURE.

BY
ALBERT H. SMYTH,
OF THE CENTRAL HIGH SCHOOL.

No. 19.

Price 10 Cents.

A LIST OF BOOKS RECOMMENDED TO STUDENTS.

1. BEERS, H. A., *A Century of American Literature*, Henry Holt, 1878.
2. BEERS, H. A., *Outline Sketch of American Literature*, 1887.
3. RICHARDSON, C. F., *American Literature*, Putnam's Sons, 1887; 2 vols.
4. TYLER, M. C., *History of American Literature, 1607-1765*, N. Y., 1887; 2 vols.
5. WHIPPLE, E. P., *American Literature*, Ticknor & Co., 1887.
6. *The Riverside Literature Series*, Houghton, Mifflin & Co.
7. *The American Men of Letters*, edited by Charles Dudley Warner.

Among the larger works may be mentioned Duyckinck's "Cyclopædia of American Literature" and "The Library of American Literature," by E. C. Stedman and Ellen Hutchinson, in eleven volumes.

EXERCISES

for each week will be found at the end of the syllabus. Any persons attending the lectures are invited to send written answers to these questions, which should be addressed to ALBERT H. SMYTH, 118 NORTH ELEVENTH STREET, PHILADELPHIA, and should arrive *two days* before the following lecture. Some signature, *together with the name of the lecture-center at which the exercise is to be returned*, should be given at the top of the first page. They will be returned (with marginal comments) at the "Class" at which further explanations will be made on the general subject. All are invited to this "Class," whether they sent exercises to the lecturer or not.

LECTURE I.

THE LITERARY MEMORIALS OF PHILADELPHIA.

- a.* What Philadelphia was at the beginning of the nineteenth century; its society, its scientific foundations, its college and library, its printing presses, its magazines and writers.
 - b.* How Philadelphia and the colonies in general were regarded by literary England.
 - c.* Literature in Philadelphia before 1800.
 - d.* Joseph Dennie and the Tuesday Club; welcome to Thomas Moore; Toryism in Philadelphia.
 - e.* Charles Brockden Brown, the first novelist and first man of letters in America.
 - f.* Alexander Wilson and John James Audubon studying the birds of America.
-

LECTURE II.

IRVING AND COOPER.

- a.* Dutch New York in 1783.
- b.* Irving, the pioneer in the literature of America.
- c.* European appreciation of American writers before 1800.
- d.* Irving in England, in Spain and at Sunnyside.
- e.* "Knickerbocker's History of New York" (1809), and "The Sketch Book" (1819).
- f.* Irving's subjects and style.
- g.* The Knickerbocker School.
- h.* Cooper's life in the wilderness and on the sea; his first novel; the "Leather Stocking Tales;" subjects and style.

LECTURE III.

HAWTHORNE AND POE.

- a. Hawthorne's life in Salem and at Brook Farm.
 - b. Concord in literature: "The Scarlet Letter," "The Great Stone Face," "The Marble Faun."
 - c. Poe, his erratic life, his sombre imaginings: "The Cask of Amontillado," "The Raven;" his mastery of poetic harmony.
-

LECTURE IV.

WHITTIER AND ANTI-SLAVERY.

- a. The last phase of the great humanitarian movement in America: Garrison, Sumner, Phillips, Mrs. Stowe. The eloquence of the time.
 - b. Whittier as the poet of New England.
 - c. Analysis of "Proem," "Barclay of Ury;" his landscapes, his characters and his ideals.
-

LECTURE V.

THE ARGONAUTS OF '49.

- a. The purchase of California; the realization of Eldorado; the picturesque and turbulent life in the gold fields.
 - b. The poets of the far West: Joaquin Miller and Bret Harte; their prose and their poetry; novel subjects and daring verse.
 - c. Piatt, the poet of the prairie and the farmstead.
 - d. How far Miller and Harte in the West, and Whitman in the East, deserve to be called the truly national poets of America. Longfellow on nationalism in literature.
-

LECTURE VI.

LOWELL AND AMERICAN CULTURE.

- a. Lowell our foremost living critic, essayist and poet.
- b. What America has contributed to exact scholarship.
- c. Lowell as literary critic compared with Coleridge, Matthew Arnold and Sainte Beuve.

- d. *The Atlantic Monthly*; Dr. Holmes's contributions.
- e. Lowell's verse; the "Cathedral" compared with the religious and philosophic poetry of England; "the Commemoration Ode" and its lessons of patriotism.
- f. Lowell's humor: "The Fable for Critics" and "Biglow Papers."
- g. What hopes for American authorship and culture? Are we now living in the Iron Age?

EXERCISES.

1. Contrast the literary spirit in Pennsylvania and in Massachusetts in the years before the Revolution.
2. In what way were the colonies regarded by literary England, and in what two ways was literary England regarded by the United States?
3. Illustrate the progress in printing in Philadelphia after 1800.
4. Discuss the character of Brockden Brown's works.

II.

1. How may the literary career of James Fenimore Cooper be said to illustrate the literary history of America?
2. What American writers before Irving had found favor in England?
3. Discuss Irving's style and choice of subject in the "Sketch Book."
4. What were the literary aims of Drake and Halleck, and what did they accomplish in American literature?

III.

1. What has Hawthorne symbolized in "The Great Stone Face"?
2. What was Poe's theory of poetry? Illustrate the theory by examples from his own work.

IV.

1. Where must we look for the beginnings of the anti-slavery movement in America?
2. How do Whittier and Longfellow differ in their treatment of slavery in poetry?
3. In which of his poems does Whittier express most fully the humbler features of New England life?

V.

1. Describe the miscellaneous civilization of California in 1850.
2. What are some of the chief merits as well as the principal faults of the verse of Miller and of Harte?
3. Why is Whitman more popular in England than in America? Contrast his popularity with that of Longfellow.

VI.

1. Illustrate what is meant by inductive criticism in literature.
2. Trace the history of criticism in America.
3. Comment on the ideas of "The Cathedral" and of Tennyson's "In Memoriam."

[Series A.]

UNIVERSITY EXTENSION LECTURES
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FOR THE
EXTENSION OF UNIVERSITY TEACHING.

SYLLABUS
OF A
COURSE OF SIX LECTURES
ON
ENGLISH LITERATURE
IN THE NINETEENTH CENTURY.

BY
HENRY W. ROLFE, A.M.,
LECTURER ON THE LATIN LANGUAGE AND LITERATURE, IN THE
UNIVERSITY OF PENNSYLVANIA.

No. 20.

Price 10 Cents.

THE CLASS.—At the close of each lecture a class will be held. All are urged to attend it and to take an active part. After the first evening the subject will always be the lecture of the previous week, or any considerations directly suggested by it. The freest criticism and discussion are invited. With the single exception of the weekly papers, the class is the most important feature of the University Extension work.

THE WEEKLY PAPERS.—Every student is earnestly advised to write a paper upon at least one of the questions that are given at the close of the lecture outline. From this work, if it is carefully done, more good can be gained than from any other feature of the Extension system. The papers should reach the lecturer's address at least two days before the following lecture. Each should have at the head of the first sheet the writer's name and the designation of the centre. These papers will be returned at the next class. A few of them may, from time to time, be read, in part, as a basis for class discussion; but in such cases no names will be given.

THE EXAMINATION.—Those students whose papers and attendance upon the class exercises have satisfied the lecturer of the thoroughness of their work, will be admitted to the examination at the close of the course. Each person who passes this examination successfully will receive from the society a certificate in testimony thereof. A graded series of such certificates, leading in the end to a diploma, is being arranged; and steps are being taken to secure recognition for these testimonials and important privileges for the holders of them.

READING.—It is thought that the larger part of the spare time available each week may be best spent in reading up the author and works treated in the preceding lecture, and thus making preparation for the class and the written papers. Anticipatory work is deemed of less importance. Hence the suggestions as to reading that are given at the close of the lecture outline will be found to be arranged in two divisions: one, the less essential, referring to preparation for the lecture to come; the other, to work that should be done in connection with the lecture just given.

Only a few books are recommended, for the reason that deep reading rather than wide is desirable. These few are such as should be owned and carefully studied by all who wish to gain any thorough acquaintance with the authors in question. It is strongly urged that they be bought, and the study of them continued after the course has closed.

The formation of Students' Associations, for reading and study before and after the Lecture Course, as well as during its continuance, is strongly urged. In every case where this is done, the lecturer would be glad of an opportunity to make special suggestions in advance about books and subjects. The reading suggestions printed in this syllabus are of too general a nature for the guidance of these associations. They are intended rather for the use of individual readers, whose time and previous knowledge vary widely, and to whom, therefore, no specific directions can be given.

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[THE following six authors are selected on the ground that they are especially interesting in their lives and work, and especially well adapted to exhibit the varied excellence and power of English literature. They will be studied both biographically and critically. The biographical material will consist in part of short extracts from the writings of the author under consideration. Each lecture will stand by itself; and yet it is hoped that, taken together, they will serve to develop certain fundamental principles concerning both the spirit and tendency of English literature in the present century, and the philosophy of literature in general.]

LECTURE I.

CHARLES LAMB.

"It is impossible to know whether we most admire the author or love the man."

Childhood.

His birth in the Temple (February 10, 1775). His father a lawyer's clerk. The effect of these early surroundings. (Read "The Old Benchers of the Inner Temple.") The appointment to Christ's Hospital, through the influence of Samuel Salt. History and character of this famous school. The youthful Coleridge. The friendship between the two boys, and its basis. (Read "Recollections of Christ's Hospital," and "Christ's Hospital Five and Thirty Years Ago.")

Youth and Heroism.

Removal from school. The reason therefor. The failure of the elder brother, John, to assist the

family. (Read "My Relations.") Mary Lamb, and the strong friendship between herself and Charles. (Read "Mackery End, in Hertfordshire.") Charles' position in the East India House. His work extremely uncongenial, but performed without complaint. His salary at first but £70. The poverty at home, yet Charles and Mary happy. Fate, however, would not leave them so. Mary's insanity. The tragedy (1796, aged 21). Mary's imprisonment; and her release, upon Charles' heroic promise to care for her through life. Mary's courage and resignation. The burden, however, sometimes heavier than they can bear. Charles' renunciation of literature. This proves unnecessary. The sacrifice of his love for Alice W.

Literary Activity.

"Rosamund Gray" (1798, aged 23). Newspaper paragraphs. Tragedy of "John Woodvil," and its failure (1802, aged 27). The farce, "Mr. H.," a failure (1806). "Tales from Shakespeare" (1807). "Specimens of Dramatic Poets" (1808). Lamb's love for Hester Savory and verses on her death (1803). Twelve unproductive years (1808-1820). The "London Magazine" and the "Essays of Elia" (1820, aged 45). Their unique character. The origin of the name.

Last Years.

The death of John Lamb (1821) and the grief of Charles. (Read "Dream Children.") Coleridge's death (1834) proves to be Lamb's own death-blow. The accident of December, 1834, and its fatal result. Mary survives her brother thirteen years. Personal appearance of Lamb: "A compound of the Jew, the gentleman, and the angel." His portraits. The lessons of his life.

READING.

In addition to the essays cited in the outline, read "The South-Sea House," "New Year's Eve," "Mrs. Battle's Opinions on Whist," "A Quaker's Meeting," "The

Old and the New Schoolmaster," "Modern Gallantry," "A Dissertation upon Roast Pig," "Blakesmoor in H—shire," "The Superannuated Man," "Old China." To these all the other essays should be added from time to time. No one, finally, can know Lamb without an intimate acquaintance with his letters. In all cases use Ainger's editions, with the notes. Ainger's *Life of Lamb* should be carefully studied from the very first (the larger form, published by Macmillan). Martin's "In the Footprints of Charles Lamb," fully illustrated, is of great interest.

Preparatory Reading for the Wordsworth Lecture.

Macmillan's late one-volume edition of the complete works is the best. In preparation for the lecture, read the preface of Matthew Arnold's selection from Wordsworth's poems (Macmillan; published in the *Golden Treasury* series), and as many as possible of the lyric poems in that selection, together with some of the narrative poems and some of the reflective and elegiac, especially "Influence of Natural Objects" and "Tintern Abbey." Read slowly and thoroughly, rather than widely.

EXERCISES.

1. Describe Lamb's childhood and its surroundings.
2. Write a description of the life at Christ's Hospital, drawn from the two essays.
3. What, in your opinion, gives Lamb's writings their peculiar charm?
4. To what extent is it true that literature is always, as in the case of Lamb, self-revelation?

LECTURE II.

WORDSWORTH.

"There was nothing, from the daisy's 'star-shaped shadow on the naked stone' to the vast landscape seen at sunrise from the mountain top, that he did not describe, that he has not made us love."

Introductory.

No two writers should be studied from exactly the same point of view. It would especially be wrong to approach Wordsworth in the same spirit as Lamb, a poet in the same way as a writer of prose. The essential difference between poetry and prose: in outward form; in inward spirit. Matthew Arnold's statement, "poetry is thought and art in one," not sufficiently exact. Poetry is rather the *highest* thought combined with the *highest*, most perfect, artistic form. High thought is thought upon high subjects, such as human life and man's relations to God. Poetry, therefore, since it deals with the highest thought, must deal with life and its relations, must be "a criticism of life." Illustrations of this doctrine.

Wordsworth's Outward Life.

An almost unbroken record of quiet and happiness. Birth at Cockermouth, April 7, 1770. Beauty of this early home. Its influences and pleasures, as described in "The Prelude." The mother's death (1778). School at Hawkeshead, among lakes and hills. Free outdoor life and increasing intimacy with nature. These the true formative years; the university of less importance. Cambridge (1787). His idleness there. Vacation in Hawkshead. Determination to be a poet, "a dedicated spirit." Vacation in France and interest in the Revolution (1790). Years of indecision. Second visit to France. Revolutionary ardor. Disappointment, as France sank into violence and anarchy. Loss of faith in man, and then in nature. Restoration through his sister's companionship amid familiar scenes, and through contact with simple, natural men and women. Enabled by the legacy of Raisley Calvert to devote himself unreservedly to poetry (1795). Friendship with Coleridge. Their life together. The "Lyrical Ballads" (1798). House in the lake region of northern England. Marriage (1802)—"She was a phantom of delight." Long and peaceful life. Gradual recognition and honor. Death in 1850.

Wordsworth's Poetry and its Value.

The purifying, uplifting influence of nature, as experienced occasionally by every one. This influence transitory. But Wordsworth's poetry will enable one to make it permanent. The reason of this, as explained by the poet himself: God speaks through nature to man, and whoever brings one into closer communion with nature brings him nearer to God. Illustrations, from "Lines composed a few miles above Tintern Abbey" and from "Hart-leap Well."

The belief that each natural object has a distinct divine life of its own. Illustrations, from the "Lines written in early Spring."

Wordsworth's confidence in human nature and its essential goodness. (Read "The Leech-Gatherer," "The Brothers," "Michael.") The lesson for us.

The artistic side of Wordsworth's poetry. The value of a poet's criticism of life greatly increased by his poetic art, whereby he clothes truth in such beauty that it becomes irresistible.

EXERCISES.

1. Describe Wordsworth's school days at Hawkshead. (See "The Prelude" and the biographies.)
2. Sketch the history of Dorothy Wordsworth and her relations to her brother. (See the biographies.)
3. The influence upon Wordsworth of the French Revolution.
4. What good may one gain from a study of Wordsworth's poetry, and why?
5. Explain the doctrine that literature is a criticism of life, and comment upon it.

READING.

Finish the careful reading of Arnold's selections. Then turn to "The Prelude," "The Recluse," and "The Excursion," as given in the Macmillan edition of the complete works, already referred to, or in any other *recent* complete edition. To those who wish to study "The Prelude" with especial care Professor George's annotated edition (Heath & Co., Boston) is recommended. W. J. Rolfe's illustrated

and annotated edition of some seventy selected poems is excellent. Myers' biography of Wordsworth, in the English Men of Letters series, is good, but requires careful study in parts. (Published in cloth, and also in a satisfactory paper form, in Harper's Handy Series.) A better biographical sketch for general reading is to be found in Shairp's "Studies in Poetry and Philosophy." Rev. Stopford A. Brooke's "Theology in the English Poets" (D. Appleton & Co.) should be read by whoever would study Wordsworth deeply.

Preparatory Reading for the Scott Lecture.

The Globe Edition of the *poetical* works of Scott is recommended (Macmillan). Read "The Lay of the Last Minstrel" and "Marmion." A good, inexpensive edition of each of these poems, with notes, is to be found in the Macmillan series called Globe Readings.

LECTURE III.

SCOTT.

"All the spirits of the river and the hill, all the dying refrains of ballad and the fading echoes of story, all the memory of the wild past, each legend of burn and loch, seem to have combined to inform his spirit, and to secure themselves an immortal life in his song."

Ancestry and Childhood.

The Scottish Lowlands : their associations ; their wild life in the past ; the consequent character of their people. From these people Walter Scott was in part descended, and he inherited their traits.

His ancestry and parentage. His birth in Edinburgh, August 15, 1771. His fever and lameness. Sent to his grandfather, at Sandy-Knowe. The life there and the influences surrounding him. His return to Edinburgh and school life.

Youth and Early Manhood.

Further education and vacation wanderings. Law studies. Invasion of Scotland feared; his enthusiasm over the volunteer cavalry. His first love. Marriage in 1797.

The Poems.

Ballads of his country collected in "Border Minstrelsy." His imagination fed by his researches, until he makes for himself a world in the past. A wild, rude legend is heard, the suggestion of a friend, and the creation of the ancient harper, the "Last Minstrel" starts to life. The "Lay" published in January, 1805. "Marmion" follows in 1808: "composed in great part in the saddle, and the stir of a cavalry charge seems to be at the very core of it." "The Lady of the Lake" (1810). The "Bridal of Triermain."

From Ashestiel to Abbotsford.

To fulfil the duties of a Selkirkshire sheriff he takes up his summer residence at Ashestiel. Beautiful surroundings. Edinburgh, with its law duties, his winter home. The Ballantynes. Abbotsford: small beginnings; development.

The Novels.

From poetry to prose. "Waverley" resumed and finished. His *incognito*. "Guy Mannering:" sources from which he drew his material. "Old Mortality:" a different origin. "The Heart of Midlothian:" how the Scotch received it, and why. "The Bride of Lammermoor:" circumstances of its composition. "Ivanhoe." An account of the Jews in Germany first suggests its theme. Rebecca, and Scott's view concerning her fortunes. "St. Ronan's Well:" its inferiority, and the reason thereof.

Adversity and Death.

Business troubles. Scott's resolution to write off his debt. His labors and their result. Broken health. The journey to Italy. His pathetic return and death (1832).

Criticism.

The Poems.—Vivid description, spirited narrative, abundance of stirring incidents. Is Scott Homeric, as is frequently declared? His poetry gives great pleasure, but does not attempt to "wrestle with the mystery of life;" that is, to offer direct "criticism of life." Is it for that reason inferior art? Can a work of art teach while seeming to entertain merely? The great service of the poems in removing the hatred between the Highland and Lowland Scotch.—Illustrative passages from "The Lady of the Lake."

The Novels.—In certain respects superior to the poems. They afford scope for all Scott's powers. "The most brilliant and most diversified 'spectacle of human life' which we have had since Shakespeare." Goethe's praise. Unfavorable criticism: by Carlyle; by Howells. Scott's style.

EXERCISES.

1. Describe Scott's character.
2. Criticise, both favorably and unfavorably, the poetry of Scott.
3. Criticise, in the light of your knowledge of Wordsworth and Scott, Dr. Johnson's statement that a book should teach us either to enjoy life or to endure it.

READING.

Lockhart's life of Scott is one of the greatest of biographies. Every reader should know it. It is to be had in an inexpensive form in the "Chandos Classics." Hutton's briefer biography, in the English Men of Letters series (and Harper's Handy Series), is also good. W. J. Rolfe's editions of the principal poems, with notes and illustrations, are excellent. The novels are to be obtained in countless editions.

Preparatory Reading for the Carlyle Lecture.

Read with care "Heroes and Hero Worship." An excellent cheap edition of Carlyle's works is published by Chapman & Hall, of London.

LECTURE IV.

CARLYLE.

" . . . his almost bewildering affluence of thought, fancy, feeling, humor, pathos, his biting pen, his scorching criticism, his world-wide sympathy with everything but the commonplace"

Early Life.

Puritan ancestry, and its results as seen in his life. Born in Ecclefechan, in southern Scotland, December 4, 1795. His humble parents. Early schooling. Edinburgh University.

The Period of "Storm and Stress."

Theology; doubts arise; declines to enter the ministry. Becomes a schoolmaster. His first love. Literary life in Edinburgh. His dyspepsia and despair. The "Everlasting No." Study of German and its great influence upon his thought and work. "Life of Schiller" (1823). Correspondence with Goethe. Acquaintance with Jane Welsh and their marriage (1826). Their life together; its success and its failure.

Entire Devotion to Literature.

The *Edinburgh Review* and the Burns Essay. Removal to Craigenputtock, the Welshes' manor. "Sartor Resartus" ("The Tailor Re-tailored") written in 1831. Its subject and importance; its defects; its reception. Emerson's visit; the long friendship and beautiful correspondence. The "French Revolution" (1834-7). Manuscript of the first volume accidentally destroyed. The character of this book to be considered later, as also that of "Heroes and Hero Worship" (1841). "Oliver Cromwell" (1845). The peculiar plan of the work and its great value. "Frederick the Great" (1858-65). The method very different from that of the "Cromwell."

The Closing Years.

Election as Rector of Edinburgh University (1865). The inaugural address. His wife's sudden death (1866). His intense grief and the "Reminiscences." His object in writing these, and the impropriety of publishing them. Honors in his last days. Death, on February 5, 1881, at the age of eighty-five. Bequests to Harvard College and the University of Edinburgh.

Carlyle's Importance as a Man of Letters.

1. General considerations. His wide range of thought. Value of his literary criticism. His political philosophy; attitude toward democracy. His conception of religion. Blending of realism and idealism in all his work. Humor. His style; its strength and its weakness. His influence upon this century.
2. Carlyle's philosophy of life, with illustrative passages from "Heroes and Hero Worship." He exalts the imagination and the spiritual nature far above the understanding as means for ascertaining truth. His wonder and sense of mystery; Carlyle in this respect akin to Shakespeare.
3. Carlyle as an historian, with illustrative passages from the "French Revolution." His dramatic power: the intense reality of his scenes, events, persons. Carlyle a poet, though without the faculty of verse; his histories epic poems. The "French Revolution" one of the great histories of all time.

EXERCISES.

1. A study of Carlyle's early life at Ecclefechan.
2. Write a criticism of "Sartor Resartus."
3. Carlyle as an historian.
4. What are the essential features of Carlyle's philosophy of life?

READING.

After "Heroes and Hero Worship" study "Sartor Resartus," "The French Revolution," then some of the

essays. The "Revolution" should not be read until one has some knowledge of the elementary facts, for Carlyle takes these for granted. A good volume for the purpose of such preparation is published in the series called *Epochs of Modern History*. The thorough student of Carlyle should use Froude's biography, correcting its mistakes by constant reference to Prof. Norton's two volumes of Carlyle's general correspondence. The little biography in the *Great Writers* series is excellent and inexpensive. The correspondence between Carlyle and Emerson is of great interest. Birrell's essay on Carlyle, in the first volume of "Obiter Dicta," is strongly recommended to all. It is to be had in Alden's "Elzevir Library" for two cents!

Preparatory Reading for the Thackeray Lecture.

"Arthur Pendennis is the one of his creations in which he unquestionably put most of himself." Therefore "The History of Pendennis" should be read first. A very satisfactory edition is that of Smith, Elder & Co., in two pocket volumes.

LECTURE V.

THACKERAY.

"Fiction in his hands was not simply a profession, like another, but a constant reflection of the whole surface of life; a repeated echo of its laughter and its complaint. . . . With his whole wide world of fops and fools, of good women and brave men, of honest absurdities and cheery adventurers, he must survive with Shakespeare and Cervantes in the memory and affection of men."

Childhood and Education.

His dislike of fulsome biography and request that no detailed account of his life should be published. Our consequent ignorance of all but his public career. This lack of definite information partly

remedied by the many anecdotes concerning him. These, together with the letters that have been published, will be drawn upon freely in the course of the lecture.

The Thackeray family. The birth of William Makepeace Thackeray in Calcutta, July 18, 1811. His father's death. At the age of five he is sent to England. Charterhouse School, 1822-28. His unhappiness there. The result of these years. Intimate acquaintance with Horace. Thackeray and Horace strikingly alike. Description of the school. "The Newcomes." Cambridge life; it ceases after little more than a year, "for reasons." The Cambridge experiences described in "Pendennis."

Seeking a Career.

Idle study on the continent. Paris and Weimar, and their influence upon him. The law. Politics. Journalism, and the consequent loss of part of his fortune. The study of art in Paris. Marriage (1836) and brief happiness.

Literature as a Profession.

Fraser's Magazine. Bohemian life. Connection with *Punch*. *Vanity Fair* (1847) and fame. "Pendennis" (1849). The lectures on the English Humorists (1851). "Henry Esmond" (1852), a novel of the age of Queen Anne. It is not at once appreciated. The lecturing tour in America (1852-3). "The Newcomes" (1853-5). America again, and the lectures on the "Four Georges" (1855-6). Attempts to enter Parliament, but is defeated (1857). Editor of *The Cornhill Magazine*. The "Roundabout Papers." Sudden death on Christmas Eve, 1863.

Thackeray's Characteristics as a Writer and as a Man.

The construction of his novels. His style. His literary art in general, and the criticism of Mr. Howells. Verses. Humor. Alleged cynicism; Shirley Brooks' memorial lines in *Punch*: "He was a cynic!" His attitude toward women. His place in English literature.

EXERCISES.

1. Write a criticism of one of Thackeray's novels.
2. Compare and contrast the fiction of Thackeray and that of Scott.
3. Was Thackeray a cynic?
4. Did he fail to appreciate women?

READINGS.

After "Pendennis" read "The Newcomes," for its autobiographical interest. Do not neglect the minor writings, such as the "Roundabout Papers," the "English Humorists," and the letters. The best biographical sketch is that of Dr. John Brown (in volume 9 of Houghton & Mifflin's Modern Classics). The somewhat longer biography in the Great Writers series is excellent. The reminiscences of Thackeray in Fields' "Yesterdays with Authors" are very entertaining.

Preparatory Reading for the Arnold Lecture.

Gain a thorough acquaintance with as many as possible of the poems in the Golden Treasury selection (Macmillan).

LECTURE VI.

MATTHEW ARNOLD.

"Hardly a page can be opened without the eye lighting on verse which at one time or another has been, either to you or to some one dear to you, strength or joy."

His Life.

The son of the famous Dr. Arnold, head master of Rugby. Born at Laleham, on the Thames, in 1822. Dr. Arnold a man of affairs, with a tendency toward a life of thought. The tendency realized in the son.

In 1828 the Arnolds moved to Rugby. The character of the school under Dr. Arnold. (See "Tom Brown's School-days.") The "moral thoughtfulness" of the boys. The effect upon Matthew Arnold. The country about Rugby uninteresting. Consequently the summer is passed in a mountain home in the lake region. The friendship of Wordsworth, and its influence upon the young poet. (Read the "Memorial Verses.") Oxford (1840). A scholarship at Balliol College. Undergraduate pleasures. Friendship of Arthur Hugh Clough. (Read "Thyrsis.") The Tractarian movement. The influence of it upon Clough and Arnold. Graduation. Fellowship at Oriel College. Arnold's life-work as inspector of schools. First volume of poems (1849, aged 27). The poetical period lasts about twenty years. Appointment to Chair of Poetry at Oxford. Result of this the "Lectures on Translating Homer" (1861-2). The "Essays in Criticism" (1865). The theological writings. Visit to America. Criticism of American life and institutions. Sudden death in April, 1888, at the age of sixty-two.

His Prose Writings.

The nature and value of his literary criticism. Its great and lasting influence. His criticism of the English people. Their "Philistinism:" "on the side of beauty and taste, vulgarity; on the side of morals and feeling, coarseness; on the side of mind and spirit, unintelligence." Their need of "sweetness and light;" of culture, which consists in knowing the best that has been thought and said and done in the world. His theological criticism; "an attempt to restore the Bible to those who cannot believe in its miracles." His prose style.

His Poetry.

His unrest. His resignation. His attitude toward nature; like that of Wordsworth, and yet different. The simplicity of his verse. Its music and beauty. Its Greek spirit. Illustrative passages from various poems.

Conclusion.

The general spirit and tendency of English literature in this century, as illustrated by the authors that have been passed under review, and especially by Wordsworth, Carlyle, and Arnold.

EXERCISES.

1. Arnold's criticism of the middle classes: is it just?
2. Wordsworth and Arnold: their likeness and their difference.
3. What broad general characteristics distinguish the literature of the nineteenth century?
4. What is the Greek spirit in art?
5. Criticise, in the light of your knowledge of these six authors, the two doctrines, "literature is self-revelation," and "literature is a criticism of life."

READING.

The recent complete edition of the poems (Macmillan) uniform with the complete Wordsworth, is recommended. Of the prose works read first the "Essays in Criticism" (two volumes) and the "Discourses in America." No biography has been published.

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LECTURE I.

HOW PLANTS GROW.

I. ALL PLANTS COME FROM ONE OR TWO PARENT PLANTS.

- (a) This proposition is as true of the smallest, most unimportant plants as it is of the largest.
- (b) It does not follow that each generation is like the previous one. On the contrary, there may be several unlike generations; but, sooner or later, there will be a return to what may be called the parent or type form of the species. This is alternation of generation.
- (c) In such species as show this production of unlike forms in succeeding generations, life flows in a more or less regular cycle.
- (d) So far as is proved, there is no known form of plant which comes by spontaneous generation—that is, without the agency of parent plants.
- (e) As a rule, irregularity of descent and the intervention of unlike generations are most common among the lower orders of plants. They also show the greatest diversity in methods of production of similar offspring.

II. THE STARTING POINT OF ALL PLANTS, LARGE OR SMALL, SIMPLE OR COMPLICATED, IS A HIGHLY-VITALIZED, COMPLICATED SUBSTANCE, CALLED PROTOPLASM.

- (a) This substance has been more discussed, more investigated, more doubted, than any other substance in nature; but bear in mind, its existence is beyond cavil. It can be weighed, measured and examined in all conditions, and its growth and history followed in the laboratory and under the microscope. The fact that such a statement is yet required, shows how hard it may be for a scientific fact to overcome a popular prejudice.

- (b) Living protoplasm is most generally seen and studied when enclosed in a wall of plant substance known as cellulose. The protoplasm, not the wall, is the important part. Together, they constitute what is known as a perfect plant cell.
- (c) Plant cells are usually so small as to be invisible to the naked eye; but out of them the diversified forms of the vegetable kingdom are built up. They are the units of plant structure. A plant may have but a single cell, or it may have myriads. As from bricks of a single shape the builder produces structures of the most diverse forms, so out of cells of a single shape any plant shape may be produced.
- (d) Protoplasm does not always, or of necessity, have an enveloping wall. It may be found in a naked condition in minute granules, or in masses several inches in diameter. Cells may or may not have direct openings from one into the other.
- (e) This naked protoplasm has the power of motion, and at times of locomotion, though the latter appears to be without evident purpose, but is simply a result of physical conditions which are often external to the mass.
- (f) Protoplasm is susceptible to the action of narcotic poisons, to anæsthetics and to extremes of heat and cold.
- (g) In a word, we may say, it is essentially the same substance as that to which all animals, man included, owe their origin. This fact leads naturally to the conclusion, which observation also teaches, that between animal and plant life there is no necessary, absolute distinction.

III. THIS VEGETABLE CELL, OR PLANT UNIT, MAY TAKE MANY SHAPES DUE TO EXTERNAL FORCES, OR TO INHERITED LAWS OF GROWTH.

- (a) It is more commonly round or oblong, though it may become long and narrow, or hexagonal, or even stellate.
- (b) When young, all cells contain protoplasm, and have thin walls when these are present. As they

grow older, the protoplasm disappears (or dries up), and the walls may become thicker; the cell is practically dead. This thickening gives strength and solidity and fits the cells for their permanent work and place in the plant structure. The differences between the nut kernel and the nut shell are those of growth and development, not of original character, for both start alike.

- (c) The necessities of growth lead to great differences in the shape, conditions and functions of the cells. Thus they grow into epidermis and belong to the protective system, or into breathing cells, surfaces and spaces, and belong to the ærating and assimilating systems, or into longer tubes and become parts of the conducting system, or into hard fibre, and render mechanical support to the whole organism; or, as root hairs, they become the channels through which substances absorbed from the soil go into the plant; or in the seeds, bulbs, etc., cells do duty as storehouses of food for the next period of growth.

IV. AMONG FLOWERING PLANTS THERE ARE POPULARLY RECOGNIZED TWO METHODS OF GROWTH.

- (a) Dicotyledonous plants. Those in which we find the embryo plant has normally two seed leaves. There are concentric rings usually on the stem (shown in cross-section); counting from the centre outwardly, one for each year of growth. The bark thickens on the other hand from the outside inward. Thus between the wood in the centre and the bark on the outside, there is a neutral zone in dicotyledonous plants (of more than a year's growth) which is strictly neither wood nor bark, but is the formative, vitalized part out of which both are formed. This neutral zone is called the cambium layer or cambium ring. The leaves of dicotyledonous plants are as a rule netted-veined, and the parts of the flower are generally in fives or fours, or occasionally in multiples of these numbers; they are seldom in threes. Owing to the cambium layer, the bark (especially in spring) is readily

separable from the wood. The oaks, pines, roses, etc., are familiar types of dicotyledonous plants, which were known also as Exogens.

(b) Monocotyledonous plants are, as a rule, in such strong contrast with the dicotyledonous that their recognition is generally easy. Thus, there is but one seed-leaf to the embryo plant. There are no concentric rings on the stem, but instead (on a cross-section) one finds bundles of woody fibres, the ends of which show as small dots, as seen in the rattan and in the corn stalk. There is no cambium layer. Hence, there is no distinctly separable bark. The parts of the flowers are usually in threes or in multiples of that number, and the leaves are conspicuously parallel-veined; that is, the veins run from the base toward the apex of the leaf in a nearly parallel direction. The lily is a good example of a monocotyledonous plant, which type was once recognized as an Endogen.

(c) Those plants which produce no true flowers (ferns, mosses, toad-stools and the like) differ in mode of growth, not only from the above, but from each other, so much that we may not here enter upon a statement of their peculiarities, though they are in general of much simpler organization.

V. ROOT, STEM AND LEAF ARE EVOLVED FOR SPECIAL PURPOSES FROM THE GROWING EMBRYO PLANT. EACH HAS ITS SPECIAL MODE OF GROWTH AND ITS PARTICULAR FUNCTIONS, THOUGH AT TIMES ONE MAY DO IN A MEASURE THE WORK OF ANOTHER.

(a) The root grows only from behind its extreme tip. It serves to anchor the plant, and the root-hairs serve as absorbing organs, to whose activity the growth of the plant is largely due.

(b) The stem serves to elevate (usually) the leaves into the sunshine and into space, where more vigorous growth is possible. The branches are merely outward extensions and repetitions of the stem.

- (c) The stem grows throughout its entire length. The leaf, unlike the branch, is of superficial origin. When young, the leaf usually grows from its tip. Later growth may occur in the body of the leaf, or even near its base.

VI. THE FLOWER IS THE HIGHEST PRODUCT OF THE PLANT.

- (a) It is that for which the plant has grown. But in the formation of the flower no new anatomical element has been introduced. The parts of the flower may be regarded as having essentially the structure of the leaf, but as modified by inheritance and by external forces to such forms and colors as are best adapted in each instance for a special work. Whilst it is true that the familiar plant forms we have about us have probably been much changed in their long course of descent to us, it is especially true that the flower is the very best product time has been able to develop in each particular species. This might almost be supposed to follow from the fact that the flower is the most specialized part of the plant, and on its perfection the perpetuity of the species depends.

HOME READING.

Bessey's Botany, to page 89, omitting pages 50 to 64. Read also in same volume from page 185 to page 201.

EXERCISES.

1. Explain the doctrine of Alternation of Generation.
2. Give as fully as you can the composition and peculiarities of protoplasm.
3. What relation does cellulose bear to protoplasm?
4. What do you mean by a dicotyledonous plant? Give all the examples you can among our common wild plants. Name, also, what monocotyledonous plants you know in our native flora.
5. What do you call the lines reaching from the centre out to the bark in an exogenous stem?
6. Why and how is the flower the highest product of the plant?

7. When one speaks of a plant organ as modified by inheritance and by external forces, what is meant?

8. How is the flower the most specialized part of the plant?

LECTURE II.

HOW FLOWERING PLANTS ARE PERPETUATED.

I. WHETHER A PLANT BE OF THE SO-CALLED FLOWERING, OR OF THE SO-CALLED FLOWERLESS GROUP, REPRODUCTION BY UNION OF TWO PROTOPLASMIC MASSES IS KNOWN TO BE, OR MAY BE SUPPOSED TO BE THE NORMAL AND NECESSARY CONDITION UPON WHICH THE PERPETUITY OF THE SPECIES DEPENDS, EXCEPT IN THE VERY LOWEST DIVISION.

(a) It is not, however, to be supposed that this union is requisite for each generation. On the contrary, among the lower groups, it may occur less frequently than other methods, but there is reason to think it is an essential some time in the life-history of most species. Analogy would seem to lead to this conclusion, even where the exact facts of the case are not known.

II. REPRODUCTION AMONG THE HIGHER PLANTS SEEMS TO OBSERVE A MORE REGULAR COURSE, AND ITS ANOMALIES TO BE LESS STRIKING THAN AMONG THE LOWER FORMS, THOUGH, AS A RULE, THE PROGENY OF THE HIGHER IS LESS NUMEROUS THAN THE PROGENY OF THE LOWER GRADES OF PLANT LIFE.

(a) In the stamen and the pistil are the usual starting points of the flowering plant, and the union of the products of these two organs gives the impetus to the production of a new individual plant, or to more than one.

(b) The pollen grain contained in, and produced by, the anther, places its contents in contact

with or in association with the young ovule contained in the closed ovary, or the pollen may fall directly on the young ovule, when it is on an open scale like that of a pine cone. Such a union leads to the formation of an embryo plant.

III. THE FLOWER EXISTS FOR THE SOLE PURPOSE, SO FAR AS THE PLANT IS CONCERNED, OF PERPETUATING THE SPECIES. ALL ITS PARTS, SHAPES, COLORS AND ODORS HAVE DIRECT REFERENCE TO THAT END.

(a) We may divide the complete flower into two parts, essential and protecting.

1. The protecting parts are the calyx, which is the outer circle, and the corolla, which is, when present, next within.
2. The essential parts are the stamens and the pistil or pistils, the latter being the central organ or organs of a perfect flower. It should be noted that the function of the stamens ends when the act of fertilization is done. That of the pistil ceases only when the seed and its contained embryo are fully perfected. Hence the position of the pistil in the very centre of the flower, where most protected, would seem to imply an adaptation to the special importance of the seed-producing parts.

IV. STAMENS AND PISTILS ARE, IN THE VAST MAJORITY OF FLOWERING PLANTS, NOT ONLY IN THE SAME INDIVIDUAL PLANT, BUT IN THE SAME FLOWER.

(a) This might be regarded as a design to insure that each pistil should be fertilized by pollen from its own adjacent stamens. This, however, is now known not to be the case. It has been proved in some instances that pollen placed on the stigma of the flower from which it (the pollen) came is impotent. In other cases, the stamens and pistils in a particular flower do not mature at the same time, so that union of the products of the same flower (close fertilization) is not possible. From multiplied instances of such

difficulties we conclude that close fertilization is not the rule, even when the proper organs are contiguous. Yet there are cases where close fertilization seems intended.

V. THERE ARE PLANTS, BY NO MEANS A MAJORITY, WHERE THE STAMENS AND PISTILS ARE NOT IN THE SAME FLOWER. AS MEETING ALL THE CASES IN FLOWERING PLANTS, THE FOLLOWING DISTINCTIONS ARE REQUISITE.

- (a) Hermaphrodites, where the stamens and pistils are found in the same flower.
- (b) Monœcious plants have (on the same individual plant) some flowers which have stamens but no pistils, and other flowers which have pistils but no stamens.
- (c) Dioecious plants have (on a given individual plant) flowers of but one kind. Thus, the flowers are wholly staminate, or wholly pistillate. In other words, the staminate plants are entirely male, and the pistillate plants are entirely female, and both sexes, on two different plants, are essential to the perpetuation of the species.
- (d) Hermaphrodite flowers sometimes may be close-fertilized, usually they are not. Though anatomically perfect, they are often functionally unisexual. Monœcious plants necessitate that the pollen for a particular pistil shall at least come from another flower, so that here a genuine close fertilization is not possible. Dioecious plants necessitate *cross-fertilization*—that is, the embryo is the product of two wholly distinct and separate plants of the same species.
- (e) On the principle, now so generally accepted, that differentiation in structure means elevation in grade, the dioecious plants may be regarded as higher than the monœcious, and these higher than the hermaphrodite. Analogy might lead one to conclude that all hermaphrodite flowers were on the road to dioecism. There exist some plants (as the maples) where separation of pistils and stamens is only partially illustrated in each flower.

VI. THE REGULAR ORDER OF EVENTS IN THE PRODUCTION OF AN EMBRYO IS:

The pollen grain is brought on to the top (stigma) of the pistil; the inner coat of the pollen pushes through the outer, and begins a growth into a tube which penetrates the stigma, follows down the style and enters the cavity of the ovary (*base of the pistil*), there it comes in contact with the sac in the ovule containing the small body which is to develop into the young embryo or future plant.

- (a) The above proposition concerns such plants as have a closed ovary. An important modification of the method occurs in the cone-producing plants, where the pollen grain falls directly upon the naked ovule. The pollen tube then, sooner or later, comes in contact with the sac containing the minute body out of which the embryo is produced. It should also be stated here that these embryo cone-bearers have usually several seed-leaves.

VII. WHILST WE ALL RECOGNIZE THAT THERE IS A REGULAR FORM FOR MOST FLOWERS, WE ALSO KNOW THAT THERE MAY BE SUCH A MODIFICATION IN SHAPE OF THE PARTS THAT THE FLOWER BECOMES IRREGULAR. THIS CHANGE FROM WHAT WE RECOGNIZE AS A TYPICAL FLOWER MAY EXTEND TO A REDUCTION IN SIZE, OR TO A TOTAL SUPPRESSION OF THE PROTECTIVE PARTS, AND EVEN TO REDUCTION TO ONE SET OF THE ESSENTIAL ORGANS.

- (a) Thus the apple blossom is a regular flower. The violet is an irregular one. The pea or the bean flowers are also irregular.
- (b) In some of the buttercups the corolla may be almost gone. In the willows both calyx and corolla are wanting, and the essential organs are reduced to one kind for each particular plant of the species. In *Hippuris*, or the mare's tail, the flower may be reduced to at most one stamen and one pistil.

VIII. ON THE CONTRARY, CERTAIN PARTS OF THE PLANT OR FLOWER MAY BECOME MORE THAN USUALLY CONSPICUOUS.

- (a) In the flowering dogwood, the white or reddish flower-like parts are in reality but leaves, outside the flowers, increased in size and brightened in color.
- (b) In the sunflower, the conspicuous yellow rays on the margin of the head of flowers are modified enlargements of the central flowers.
- (c) It should also be stated that such an overgrowth of parts is apt to be associated with a reduction in size or function of parts, which are anatomically or physiologically related to them.

IX. THE CHANGES IN SIZE AND THE OBLITERATION OF PARTS, ALLUDED TO IN VII AND VIII, ARE GENERALLY SUPPOSED TO BE RELATED TO METHODS OF CROSS-FERTILIZATION OF FLOWERS BY MEANS OF INSECT VISITATION, CURRENTS OF WIND, OR OTHER EXTERNAL AGENCIES.

- (a) It has been stated by some leading authorities that when a flower has bright color, distinct odor, secretion of desirable juices, or unusual form, these are in some way associated with cross-fertilization.
- (b) The following examples may serve to illustrate common methods of cross-fertilization :
 1. Examine a just-opened bud of common laurel, and you will find the stamens bent back, the anthers stowed away in pockets in the tube of the flower. Irritate these stamens, and they will release themselves with a spring, which throws the pollen out of that flower. The possibilities are in favor of its alighting upon the stigma of another flower on the same shrub, or even on a stigma of another laurel shrub.
 2. Examine the larger insects frequenting a wild milkweed (*Asclepias*) when in bloom, and you will probably find attached to them minute yellow masses (usually in pairs) which are pollen, and which the insects can be seen to carry from one head of flowers to another.
 3. It has been shown that the lines of color in a flower frequently (not to say usually) point to the place where the nectar is secreted, and that insects visiting the flowers pass the anthers and stigmas where they

receive and deposit pollen when they are on their way to the nectar-secreting parts. The colored lines are guides to the insects.

4. Among orchids, whose colors and strange forms make them striking objects, it can be shown by actual observation that there exists a special adaptation of the floral parts to insect visitations, and, further, the insects may readily be seen to receive pollen from one flower and to deposit it on the stigma of another.
5. Such plants as have not attractive flowers are frequently fertilized by the wind which carries pollen from one plant to another of the same species. The absence of calyx and corolla, while it diminishes the probability of attracting insects to fertilize the ovules by direct means, increases the possibility of chance fertilization by wind, as there exists less covering to the ovary. But at the same time as the perpetuity of the species depends on chance winds, there are two protections against total failure: first, the pollen is frequently secreted in vast quantity; and, second, such species as are wind-fertilized usually are long-lived, and failure one year may be succeeded by fertilization in another.

X. THERE ARE UNDOUBTED INSTANCES WHERE, AS IN SOME OF THE VIOLETS, OVULES ARE FERTILIZED IN THE BUD, AND THE FLOWER CAN NOT BE SAID TO HAVE OPENED.

- (a) The anthers of such flowers often produce pollen of unusual size and vigor. Clearly, such and other cases may be regarded as designed specially for close fertilization where pollen from a flower shall be placed on its own stigma.

XI. These very plants, whose unopened flowers are close-fertilized, have often other flowers (more conspicuous) which are cross-fertilized by insects. The probability is that thus, directly or indirectly, even those plants which illustrate close fertilization are strengthened by the occasional crossing which they thus receive.

XII. It may readily be concluded from all the above that the term sexual reproduction is properly applied where the union of two living elements is concerned. *It is a conjunctive method.* With perfect propriety, one might apply the term *disjunctive method* to those illustrations of non-sexual reproduction which follow.

XIII. The non-sexual methods of reproduction among flowering plants are, production of new individuals by growth from buds, by layering, by cuttings, and partly also by grafting.

XIV. Variations from the type of parents occur most frequently as the result of sexual reproduction, probably partly because there are two plants to inherit from. Non-sexual reproduction encourages stability of specific form from the fact that there is but a single plant to transmit character. *The term conjunctive reproduction will be substituted for sexual reproduction, and disjunctive for non-sexual.*

HOME READINGS.

1. *Bessey's Botany*, chapter xx to page 426.
2. *Lubbock*, British Wild Flowers in Relation to Insects.

EXERCISES.

1. What may be regarded as the common method of reproduction among Flowering Plants?
2. Draw a perfect flower and name all the parts.
3. The flower exists for the purpose of perpetuating the species, and all its parts and peculiarities have reference to that end. Explain this statement fully.
4. What is cross-fertilization? What other method of fertilization is there?
5. How may a flower be anatomically perfect and physiologically imperfect?
6. What conclusion would you draw from the answer to Question 5?
7. When flowers are to be fertilized by wind, what precautions are taken to guard against failure?

LECTURE III.

HOW FLOWERLESS PLANTS ARE PERPETUATED.**I. METHODS OF REPRODUCTION ARE MORE VARIED AND LESS EXACT AMONG FLOWERLESS THAN AMONG FLOWERING PLANTS.**

- (a) The methods are so varied that we cannot give one satisfactory statement which shall embrace in any detail a general plan for the different divisions.
- (b) There appears to be almost nothing like insect agency, in cross-fertilization of flowerless plants. Wind and water with all the accompanying uncertainty are the agencies depended upon to perpetuate the species.
- (c) To guard against this uncertainty, the reproductive bodies appear usually in vast numbers.
- (d) In proportion as plant life has advanced from lower to higher forms, we can trace an evident simplification of reproductive processes, and a clear converging to one settled plan.

II. SEXUALITY EXISTS AMONG MOST OF THE FLOWERLESS PLANTS AS WELL AS AMONG THE FLOWERING, THOUGH IT IS OFTEN LESS CLEARLY EXPRESSED.

- (a) It would be safe to say that among flowering plants the progeny resulting from conjunctive reproduction exceeds in number that from disjunctive. On the other hand, the flowerless plants produce a larger number of individuals by disjunctive than by conjunctive reproduction.

III. FLOWERING PLANTS USUALLY COME FROM A SEED WHICH CONTAINS AN EMBRYO.

There is nothing like an embryo in any reproductive body of a flowerless plant.

- (a) It has been the custom to say that the seed of the flowering plant is analogous in function to the spore from which the flowerless plant comes. This is true in a general way, but we must be

careful not to allow this idea to lead to error, as it may, if pushed too far.

IV. Among both flowering and flowerless plants, there are parasitic species, which, in proportion to their degree of parasitism, are devoid of the green color, common to other plants, and on which the power of producing plant material out of air, earth and water depends.

- (a) The green plant makes and consumes food. The colorless plant consumes but does not make food for itself.
- (b) Inasmuch as no one thinks of separating flowering parasitic plants from the orders into which their structure indicates that they belong, simply because they are colorless, there can exist no good reason why such a separation should be made among the flowerless plants. This leads to:

V. THE MOST NATURAL BASIS OF CLASSIFICATION OF FLOWERLESS PLANTS IS STRUCTURE, AND ESPECIALLY THE STRUCTURE OF THE REPRODUCTIVE ORGANS.

Mere habit of life should go for little. We accordingly divide flowerless plants into:

- (a) Ferns and their allies (Pteridophyta).
- (b) Mosses and their allies (Bryophyta).
- (c) Fungi and Algæ which produce a sporocarp, *i. e.* a fertile portion enveloped by a sterile protecting part (Carpophyta).
- (d) Fungi and Algæ whose fertile body is not surrounded by a special protective part, and which is fertilized by a slender protoplasmic body from the same or another plant (Oöphyta).
- (e) Fungi and Algæ whose conjunctive reproduction is effected by the union of protoplasm from two similar bodies which produce a third reproductive body (Zygophyta).
- (f) Plants whose structure is of the simplest sort, and in which no conjunctive reproduction has been traced (Protophyta).

VI. Following out the details as indicated in V, it will be observed, as we proceed, that from the Ferns down to Protophyta, the methods of reproduction become more and more simplified and evince less regard for reproduction by union of different bodies, allowing at same time a corresponding increase in reproduction by mere division of the parent forms. Alternation of generation as we descend from higher to lower flowerless plants is clearly shown until it almost or quite ceases from the very simplicity of structure, and because of the practical obliteration of sexuality in the plant.

- (a) In Ferns and their allies the spore produces a body known as the prothallus. This when fertilized produces what we recognize as the Fern, or a corresponding conspicuous body. The Fern (or its ally) produces a vast number of spores without fertilization. Disjunctive reproduction in ferns, etc., is also shown by the various methods of budding. To the group of Ferns and their allies belong the plants commonly known as scouring rushes, ferns, club mosses, etc.
- (b) Mosses and their allies produce also from the spore a body known as the prothallus or protonema. This grows into the moss-like plant which being fertilized, once for all, produces in the neutral spore-case a multitude of spores. These spores, in turn, produce the sexual generation or moss-like plant again. Mosses and their allies have vast capacity for increase by the budding method, which is disjunctive reproduction. To this group belong Mosses proper and Liverworts.
- (c) Carpophyta are flowerless plants which have their fertile, spore-producing part protected by a sterile surrounding, developed from the fertile part. This group is divided naturally into
 - 1. Algæ, green, self-sustaining plants.
 - 2. Fungi, which are colorless, and more or less parasitic, or saprophytic.

The Carpophyta produce also vast numbers of reproductive bodies in a short time, and which are so light and so minute as to be carried readily by the wind. This explains the speedy spread of plant diseases, such as ergotized or spurred rye. They, in some cases, readily reproduce from mere fragments of the plants. Familiar representations of the group are found among the green, fresh-water algæ and the stoneworts, and also the bright-red seaweeds. Of the colorless division, the mushroom is a good example; so also the puffball. The Carpophyta is, of all the great groups, the most varied in character, and hence is the hardest to give a brief description of. Lichens belong here, but they are compound bodies having green, food-producing algæ on the one hand, and colorless, food-consuming fungi on the other.

(d) Oöphyta are flowerless plants which do not have their fertile reproductive part surrounded by any special protection. This fertile part is usually a round or roundish cell which eventually contains one or more round protoplasmic bodies capable of reproducing the plant. The fertilizing organs are slender bodies derived from cells on the same or other plants than those which produce the fertile bodies. This group is also divided into

1. Algæ, green, self-sustaining plants.
2. Fungi, which are colorless, and more or less parasitic, or saprophytic.

The Oöphyta are also capable of reproduction by means of self-division and by minute cells which come without any direct previous fertilization.

Familiar representatives of this great division are found in many of the green, thread-like masses so common in our slow-flowing, fresh-water streams, in the large olive-green sea-weeds, and in the white mould seen on the bodies of insects lying in water.

On the whole, the division is uniform and easy of recognition.

(e) Zygomphyta are flowerless plants whose conjunctive reproduction is accomplished by a union of two

bodies so nearly resembling each other that it is impossible usually to distinguish them. From these two bodies comes a third round or oval body which develops into new plants. This division contains also

1. Green Algæ.
2. Colorless Fungi.

Familiar examples of the former are readily found as thread-like masses in our streams. Examples of the latter are only too common among the moulds, with which every housekeeper is familiar.

Minute disjunctive reproductive bodies are also most abundantly produced.

(f) Protophyta are flowerless plants in which there is the utmost simplicity of structure. Conjunctive reproduction is not certainly known, and the increase and perpetuation of the species occur by division of the parent plant. Some of the representatives of this division have the power of locomotion to a limited extent; thus the masses of slime, which one finds about tanyards or under decaying logs. Bacteria, which play so important a part in decay and in production of disease, belong to this group; so also do the red snow and the "green mould" found in damp flower-pots. The yeast plant belongs here.

There are certain generalizations which follow from the facts of the First and Second Lectures and which should be now more clearly expressed.

1. There are well-marked gradations in structure shown, so that the classification of plants into higher and lower rests upon observed facts.
2. As these gradations are clearly marked in the methods of reproduction, and as this is the starting point of plant life, it is natural that classification should rest very largely upon the reproductive processes and organs.
3. Amid all the apparent diversity a unity of plan is more or less apparent.

4. Disjunctive reproduction is the rule in the lowest forms of plants. Then alternation of generation becomes more pronounced until the higher, fern-like plants are reached, after which it becomes less conspicuous. In the flowering plant it is less marked, and conjunctive production becomes the rule.
5. The plan of plant life has, then, been clearly tending toward perpetuation of the species by means of two individuals. This, as we have seen, is the common source of variation as associated with specialization of parts.
6. "To specialize is to elevate." Hence the whole course of plant life has been toward elevation. This fact is also borne out by the observed order of succession of plants in geological time.
7. In proportion as we ascend from lower to higher forms of plant life we see increase of care in the production of spores and seeds, and in the protection accorded to the body from which the new plant is to come.

HOME READINGS.

Bessey's Botany, chapters xiii, xiv, xv, xvi, xvii and xix.

Cooke and Berkeley on Fungi. Portions of the text on Reproduction.

EXERCISES.

1. Why do we infer insect agency plays a less conspicuous part in fertilization of flowerless than of flowering plants?
2. Why are the reproductive bodies, "spores and the like," so numerous among flowerless plants?
3. Can you draw any conclusion as to the place of origin (land or water) of plant life from the fact that flowerless plants depend more than flowering, for reproduction, upon the presence of water?
4. How does a spore differ from a seed?
5. Why do colorless plants make no plant food?
(See *Bessey*, under head of Assimilation.)

6. What flowering parasitic plant can you name?
What flowerless one?

7. What is the meaning of the word Protophyta?
What does it suggest?

8. Do we derive any article of food from the Carpo-
phyta?

9. State briefly methods of reproduction from Proto-
phyta to Pteridophyta.

LECTURE IV.

HOW PLANTS ARE DISTRIBUTED.

I. It is evident to an observer who passes from one end of our country to the other that the character of the plants changes as he goes. Thus the plants of Maine are markedly different from those of Florida. If he continues his travels from temperate to tropical regions the change will even be more marked. The science which teaches of this aspect of plant life is designated as the Geographical Distribution of Plants.

(a) Notwithstanding these changes, they are not so great but that in contiguous areas a general resemblance will be traced between certain groups of plants. Thus in Eastern North America there will be found many oaks and hickories of different species, but which have a resemblance to each other. On the western coast of North America large pines and other allied cone-bearing trees will be noted.

(b) This resemblance in the main will be greater or less in proportion to the proximity of the regions, so that, on the whole, we may say the transition from one flora to another is a gradual one.

(c) To a certain extent this resemblance may be traced to a similarity of climate and surroundings, but

it also raises the broader question as to whether these related plants may not have descended one from another.

- (d) It also raises the question as to whether plants were originally created where we find them.

II. Plants are known to avail themselves of natural and human agencies afforded for travel. They are also known to change somewhat in character as they spread over wider areas.

- (a) Thus the common chestnut is found from the Caspian Sea to Portugal, and also grows both in Japan and in Eastern North America. It seems to be the same species; but there are many varieties, some of which have been produced naturally and others under cultivation.

- (b) The cocoanut can be traced spreading among tropical islands at the present time.

III. Isolated islands, or even a continent like Australia, have plants which differ much from the plants of the other parts of the globe. Where distant regions have floras which resemble each other markedly, we usually can show a probable communication between these regions in past or in present time.

- (a) Australia is characterized by the presence of many species of acacia, and by the abundance of many hard-leaved plants known as the Proteaceæ.

- (b) Northeastern Asia and Northeastern America have plants in large numbers which are either identical in kind or so closely resemble each other that we may suppose they came from the same ancestors. Yet in spite of the vast distances between these regions, there is good reason to believe there were means of communication in former times; thus the magnolia group is almost peculiar to Northeastern Asia and to Eastern North America. The same may be said of the mayapple (*Podophyllum*) and of the group to which the Florida savin belongs.

- (c) We can also trace scattered colonies of northern plants from the sea-level in northern regions

southward, finding them in cool spots, on mountain tops, as we approach warmer regions. Thus a form of houseleek, known to botanists as *Sedum Rhodiola*, is found on the seashore in Labrador and on the top of Roan Mountain in North Carolina. This can be shown to be connected with the glacial period in earlier geological time.

The land areas of the old and new worlds are nearer in northern latitudes than in southern. So we find the flora clear around the world in Arctic regions is almost identical, but it becomes more and more different as we go south.

- (a) As further illustrative of this same proposition, we may say, in general terms, that the animals of the high north are more like each other than are those of corresponding latitudes (of the old and new worlds) as we go south.

IV. It appears reasonable to conclude that most plants have had a single starting point, and that from this they have migrated, and often changed in character in proportion to the distance they have wandered from their original homes.

- (a) It should be said that a distinguished authority (Alphonse De Candolle) considers that of the common cultivated plants "no species was common to the tropical and austral regions of the two hemispheres before cultivation," though "a great number of species originated at once in Europe and Western Asia, in Europe and Siberia, in the Mediterranean basin and Western Asia, in India and the Asiatic Archipelago, in the West Indies and Mexico, in these two regions and Columbia, in Peru and Brazil, or in Peru and Columbia." That is, they may have been in use as food, from earliest knowledge, over these regions, but that still leaves the actual origin in doubt unless settled by arguments which antedate human history. It is now well known that some, at least, of our living plants are of extreme antiquity, as far as the human race is concerned.

V. Whether or not natural means have been sufficient to cause the wide dispersion supposed by the previous proposition, it is certain that such and other causes are operative in a more limited degree, as the following illustrations will show :

- (a) Ocean currents are known to carry plants and seeds in viable condition from one point to another and often to great distances ; thus the cocoanut and the mangrove.
- (b) Wind-storms or even ordinary currents of wind carry seeds. We have all seen seeds floating in the air.
- (c) River currents frequently transport seeds in living condition to great distances. A recent illustration of this is the scattering of the seeds and subsequent growth of the honey locust along the Juniata Valley.
- (d) Birds aid in carrying seeds often to very remote distances. Thus wild pigeons could disseminate over a wide area. And fruits, where a bright pulp encloses a hard stone with embryo (as the cherry) are specially fitted for scattering by birds. Blue jays, crows and woodpeckers are frequently seen carrying seeds from point to point.
- (e) Among the seeds and nuts hidden away in the ground by such rodents as squirrels, mice, etc., some few escape destruction and grow.
- (f) Seeds are often carried by animals to considerable distances in their hair or feathers. Almost any domestic animal will give illustrations of this in autumn.
- (g) Railroads serve to scatter seeds accidentally, first by actual transport in packages of merchandise and subsequent scattering of matured seed in the air by passing trains. An example of this is the red poppy, now found growing along the line of the railroad from Downingtown to Lancaster.
- (h) Ships from foreign ports carry, both in their cargo and in their ballast, seed to the ports where they discharge or load. Thus the ballast

grounds of Girard and Kaighn's Points, near Philadelphia, have shown at least 300 species so introduced from remote regions within a few years.

- (i) As an indication of the rapidity with which a plant, once introduced, may spread, take the common toadflax (*Linaria vulgaris*). In less than two centuries it has extended over nearly or quiet one thousand miles.

VI. Plants from one region may gradually accustom themselves to life in another, where within certain limits there is a different climate.

- (a) Corn from Kentucky may be brought to endure Canadian winters, if it be allowed to produce a crop or two at an intermediate point, and this seed be used.
- (b) It is well known that some species of the giant pines found on the Pacific Coast will not endure our winters here, whereas, if we take the seed of the same species from cooler Colorado, it is much more likely to grow here.

VII. Weeds introduced into our country may not only thrive and multiply, but may grow so vigorously as to crowd out our native flora.

- (a) The reason is that our eastern native flora has been produced in the shade of our forests, whereas the foreign weeds have been long used to open grounds. By the removal of our forests we place the native flora under adverse conditions, which the incoming weeds are specially prepared to take advantage of.

VIII. The conditions most important in determining the geographical limits within which a particular species can live, are heat and moisture.

- (a) There is a maximum, minimum and optimum temperature for each species to grow and produce seed. If the thermometer remains below the minimum point, the plant will never begin growth. If the temperature exceed the maximum point, the growing plant may be killed.

If a plant fail to receive a certain quantity of heat, it will not flower, and it requires an increase in hours of heat (not in intensity) to produce fruit.

- (b) The influence of moisture in production of vegetable growth is seen in the luxuriance of the tree flora on the Pacific Coast.
- IX. Flowerless plants will often endure greater extremes of heat and cold than flowering.
- (a) It is no uncommon thing to see fungi in active growth and reproduction in midwinter, when all higher forms of plants are in their winter rest.
- X. There is abundant evidence that the distribution of plants in earlier times has not been just as we see it to-day, and that it can not be explained by the temperature as existing now. Hence we infer there have been great changes of climate in portions of the globe since existing types of plants appeared.
- (a) In no other way can we explain the presence of the redwood of California in polar regions, or of palms as far north as Dakota and Vancouver Island.

HOME READING.

EXERCISES.

1. What is meant by a change in the character of the flora?
2. What one fact in the present distribution of plants most strongly suggests the descent of one species from another?
3. Can you give, from your own observation, any instances of the travels of plants?
4. In what respects does the flora of the frigid zone differ from that of the equatorial regions when we follow a parallel of latitude around the globe?
5. How has proximity of continents in the high north affected distribution of plants?

6. Name such plants as you think would be disseminated by wind, also by water, also by birds.

7. What plant-seeds adhere to your clothing in your walks?

LECTURE V.

SOME PLANTS THAT ARE USEFUL TO US.

I. OUR MOST USEFUL PLANTS COME TO US FROM THE HIGHER GROUPS—*i.e.*, WE DERIVE MORE FROM THE FLOWERING THAN FROM THE FLOWERLESS PLANTS.

(a) This is due probably to the fundamental fact that the lower plants contain more water in their organization, and are therefore less permanent in character and of softer structure, and hence less strong and fitted to withstand use and strain.

(b) The flowerless plants, so-called, produce less edible tissue, fewer fruits and less starch, albumen-like matter and fats.

II. THERE ARE SOME ORDERS OF FLOWERING PLANTS WHICH CONTAIN NO POISONOUS REPRESENTATIVES.

There are some orders whose representatives are usually open to suspicion. There are others which have both useful and noxious qualities, each well marked. There are still other orders whose prevailing character may be said to be neutrality; that is, they are neither markedly useful nor injurious to man.

(a) The Mustard family (Cruciferae) contains no poisonous plant. Many of its members possess an acrid, biting juice, but none are poisonous. The order is recognized by usually having *four* sepals, *four* petals, *six* stamens, of which two are somewhat shorter than the remaining four, and a two-celled pod, which, when ripe, readily

splits on either side of the central partition. You will find no poisonous plant with these characters. It may be biting and pungent, but so far as taste allows it may be used as a food. The order is well represented in polar regions, forming a large part of the vegetation, and is of the greatest value as a remedy for and preventive of scurvy. From it we have cabbage (including kale, cauliflower and broccoli), turnip, radish, mustard and horse-radish.

- (b) The order of the Hollyhock (Malvaceæ) is in many respects a remarkable one. Its chief value lies in the blandness of its edible products and in the strength of its fibre. Recognize family by lobes of calyx being valvate, petals convolute, and stamens united into a sheath around the pistil. Cotton comes from this family; is found around the seeds; native of tropics, but gradually becoming acclimated in temperate parts. Its history is that of civilization. Several species. Found in both old and new worlds. It has decided fate of empires—the war of the rebellion was simply a war in the interest of “King Cotton.” Cotton-seed oil is largely used as a substitute for olive oil, and as an adulterant in manufacture of lard.
- (c) Flax (*Linum*) belongs to an order which, like the Hollyhock family, possesses both mucilaginous properties and strength of fibre. The researches of De Candolle show both its wide and ancient use. Its cultivation is associated with the migration of the Aryan races in Europe, and with the early history of this country. Cottonwool is a term familiar in Europe. In this country *Linum* (flax) and wool gave rise to the term linsey-woolsey, a mixture of flax and wool, out of which the clothing of most of our ancestors was made. The term linsey-woolsey passed into a proverb, and became a synonym for American strength, courage and love of freedom.

Flax is of unknown origin. There are four well-marked varieties in use. It has never yet been discovered

in an absolutely wild state. The seed is used not only to produce oil, but also as a nutritious food, especially for cattle. The ancient Egyptians and Hebrews wove linen. The lake-dwellers of Switzerland had cultivated flax long before hemp, and used it in the age when they had no other than stone weapons. It seems not only to have been brought into Europe by the Aryans and thence distributed to the whole south of Europe, but even earlier than this, the Finns, who are of the Turanian stock, had it in use in the north of Europe. Its introduction into Europe may be placed at from 2500 to 2800 years B.C. De Candolle asserts that it has been cultivated for from four to five thousand years in Mesopotamia, Assyria and Egypt. A study of the origin and distribution of the word *Linum* in all its forms might lead to important conclusions concerning the migrations of the Aryan race.

- (d) The Orange, though not cultivated here, is one of our common fruits and merits a word. Authorities accept two more or less distinct varieties, the bitter or sour and the sweet. Both came originally from Asia, probably. The earliest names indicate that it was sour or bitter. The Sanskrit word *Nagrunga*, and the Latin *Aurantium* are the sources from which our word Orange was derived. From the sour or bitter form the sweet orange came, as there is not only etymological reason for the belief, but also a form known as the bitter-sweet orange. It is likely that the sweet variety came from China and Cochin China into India about the first of the Christian era. It is noteworthy that the first oranges received here from Florida and from California were much less sweet than those now received. Cultivation the cause.

- (e) The Pea family (*Leguminosæ*) furnishes one of the strongest series of contrasts. It appears almost to be without neutrality, and to furnish either food or poison.

The order, though plainly marked in its typical representatives by an irregular corolla, as that of the pea and bean, stamens with nine in one group, and one standing unconnected with the rest, and by having its fruit in a pod,

is, nevertheless, one of considerable diversity in structure. We could enumerate about one hundred species of plants in the Pea family which furnish either food for man, forage for domestic animals, or drugs. It is remarkable that the poisons come from groups of this order which are very closely allied to the tribe which produces peas, beans, etc. The bean is another of those plants which came into Europe with the Aryans. It reached China and Japan still later. The family of the Fabii, famous in Roman history, received their name from faba (bean). It was used in the sacrifices to Carna. Among the excavations from ancient Troy some beans have appeared.

- (f) The Rose family (Rosaceæ) may usually be recognized here by the large number of stamens inserted on the calyx and by its five colored petals, which are separate from each other. It furnishes a vast number of species, which are useful as food, and, as we well know, for ornament. Horticulture has in this family brought about some of its most signal triumphs. As the Pea family is remarkable for its seeds, the Rose family on the other hand is remarkable for its fruits, popularly so called, and for its flowers. Thus from the Rose family we have the strawberry, cherry, plums of several species, apricots, almonds, peaches, pear, apple and quince.

The fruit-producing portion of the Rose family is a native of and almost confined to the north temperate zone. The elements of hydrocyanic acid are present in some of the species of Rosaceæ. The pear came from the region between "North of Persia and the western temperate coast of Europe."

So far as we can see, the apple is indigenous in Europe, and from it the cultivated varieties have been produced. Apples have been in common use there from the earliest times. The quince is wild in the mountains of Persia, and was introduced into Europe probably before the Trojan war. Cultivation seems to have done but little for it.

The peach is a native of China. It is not

descended from the almond, as the latter comes from Syria and Anatolia. The apricot comes from China and grows wild in the mountains near Pekin.

Plums and cherries are native in the regions bordering on the Caspian Sea. Rosaceous fruits may thus be regarded as closely associated with our civilization.

- (g) There is an immense order known as that of the compound flowers (the Compositæ of botanists) which furnishes almost no food or forage for man or beast. It embraces about *one-tenth* of the flowering species of the globe, yet strangely enough one of the very few food plants that North America has furnished the world, and which De Candolle regards as having any promise of value for the future, is the Jerusalem artichoke (*Helianthus tuberosus*) of the family of the compositæ.

Of the Potato family (Solanæ) and of the products we derive from it there might be much said. Three members merit special attention :

1. The potato itself has long been known to exist wild in South America, especially on the shore of Southern Chili, and thence north along the Andes. It also occurs in Mexico. It may now be affirmed that it grows in the mountains of Arizona, and seems to be a native there. The vines contain a poisonous principle, solanine, and the tubers themselves when exposed to the sun become green, bitter and more or less poisonous.

It furnishes an instance of a plant which (as in Ireland) has, after long trials in introduction, become the chief food of a people, and where the failure of the crop leads to a national famine, as that caused in 1847, by the disease known as the potato rot.

2. Tobacco. (It is a matter of doubt, whether we should class it with useful plants.) It is now conclusively settled that this plant (or rather the two or three species used) came from America, and that its use in the old world

dates from the discovery of the new. Besides the species in common use, there was a second species, smaller, coarser and stronger, which was used by the Indians here, at the period of the discovery of the new world, from the Eastern States certainly as far south as Mexico.

3. The Tomato. It is a native of South America, and for years was grown simply as an ornamental plant under the name of love apple. It has not been widely adopted as an article of food, even in countries where it would grow. It is more used here than abroad. Almost all the changes in size, smoothness and flavor have been produced by cultivation *in the last half century*. It was originally quite sour.
- (h) The Mint family (Labiatae) is readily distinguished; square stems, leaves opposite, flowers with an upper and a lower lip, stamens two, or when four, two longer than the others, with four small seed-like bodies in the bottom of the calyx. So far as appears, there is no really poisonous member in the group. The mint, thyme, savory, lavender, sage and balm are all representatives of the group, and so characteristic that from these one may almost infer the qualities of all.
- (i) The Grass family (Gramineae), one of the most inconspicuous in our latitude, is, of all others, the one most important. The cereals are the product of this family, besides which might be enumerated plants of such vast service to man, as the sugar-cane and the bamboo, which, though not ranked as cereals, are still of the grass family. We can allude to but a few, with which we are most familiar.
1. Wheat was cultivated in "Egypt earlier than before 3359 B.C., and it is also mentioned in the Hebrew Scriptures." Found also among the remains of the Swiss lake-dwellers. Used in China 2700 B.C. It was cultivated, De Candolle thinks, before the birth of our most ancient languages. Its original home is not certainly known. It

was probably cultivated earliest in the valley of the Euphrates and spread thence east and west. The so-called mummy wheat is a delusion.

2. Barley was in cultivation prior to the building of the Pyramids of Egypt. In one form or another it has been able to adapt itself to climates as different as those of India, Arabia and Norway.
3. Rye most likely originated north of the Daube.
4. The wild form of Oats is not known. It came, De Candolle thinks, from the region between "Tartary and Eastern temperate Europe."
5. Our Indian Corn has, time and again, been spoken of as originating in the old world. It is true, no one has ever certainly seen it in its original wild condition. But the arguments in favor of its American origin are so overwhelming that one can hardly accept any other conclusion, especially since, quite recently, a plant has been discovered, growing wild in Mexico, which is nearly enough related to the Indian corn to be placed in the same genus. The possibility is that this may prove to be the ancestral form.

De Candolle studied with the utmost care ²⁴⁷ of the most important cultivated plants. Of these, "the old world has furnished 199, America 45, and *three* are still uncertain." Our own region, the United States, does not seem to have been the point of distribution of any new cereal. The wild rice of our Lake regions, and on which the Indians originally subsisted, he thinks too inferior to be largely cultivated.

HOME READING.

De Candolle, Origin of Cultivated Plants.

EXERCISES.

1. How would you recognize a plant of the order Cruciferae? What qualities would you expect to find in it?
2. What can you say of the representatives of the Pea family?

3. What can you say of the relationship between the Peach and the Almond?

4. Under what circumstances may potatoes develop a poisonous principle? Where can you find illustrations?

5. What species of grass are reputed poisonous?

6. Grasses usually have hollow stems. Do you know any with solid stems?

LECTURE VI.

SOME PLANTS THAT ARE INJURIOUS TO US.

I. We may fairly infer from the facts of the previous lecture that our most valuable food plants have been introduced from other countries. It is probable that our most injurious weeds have had a similar origin. In other words, the chief value of our botanical resources would seem to lie not in the herbaceous food-producing plants, but in the forest growth which is peculiar to the country. Among the injurious plants, we may enumerate the following:

- (a) The Buttercups (*Ranunculus*) have more or less acrid juice, which is in some species strong enough to cause a blistering of the skin. Heat and drying dissipate this acridity. Some species growing here are natives, some are introduced, and some probably belong both here and in Europe. None of them have any special value.
- (b) The Corn Poppy may be seen in parts of Chester, Delaware and probably Lancaster counties. It should be banished at once. Introduced from Europe, and largely scattered by railroads.
- (c) Of all the species of Saint John's Wort (*Hypericum*) which we have, the only one which promises to be a nuisance, or is already so, is the species (*Hypericum perforatum*) with the acrid juice. It was introduced from Europe.
- (d) The Sumach (*Rhus*) group contains plants which are not only actively poisonous, but some which are bland and harmless. This is the

more strange because the poisonous ones do not always require contact to cause trouble; mere proximity is enough.

Of our species, native to this Eastern slope, none which have red hairy berries are poisonous. Those whose mature fruit is smooth and greenish, or yellowish-green, are either suspicious or known to be poisonous.

The California species, resembling our poisonous ones, is not less actively injurious. The Japanese lacquer comes from a poisonous species of Sumach, and fresh lacquer-work is frequently a cause of poisoning to those exposed.

Our Virginia Creeper (*Ampelopsis*) so closely resembles the Poison Ivy that to some the distinction may be difficult. It will be of service to remember that.

AMPELOPSIS has ordinarily *five* leaflets on the end of its leaf stalk. The vine in climbing, attaches itself by means of tendrils which have small flat disks on the end. Its mature berries are black. In autumn its leaves turn red.

POISON IVY, or **POISON OAK**, as it is variously called, has ordinarily but three leaflets. It climbs over fences or trees by means of rootlets, which have no disks. Its berries are whitish, or yellowish-green. Its autumn leaves are yellow.

POISON SUMACH is an erect shrub, from two to eighteen feet high; is found in damp places, and has berries resembling those of the poison ivy. It does not climb.

(e) The Pea and Bean family (*Leguminosæ*) has already in a previous lecture been alluded to as having both nutritious and poisonous representatives; among the latter should be mentioned:

1. Several species of Milk Vetch (*Astragalus*) in the West, and Rattle Box (*Crotalaria*) in our own region, which are reputed (on apparently good grounds) to be capable of slowly poisoning and destroying horses by producing a disease resembling in some respects that from the prolonged use of opium.
2. The Coral Bean of Texas (*Sophora speciosa*) is well known to contain an active poison.

3. The Golden Chain (*Laburnum*), a beautiful garden shrub, has also the reputation of being poisonous.
- (f) The Parsley family (*Umbelliferæ*) may be fairly regarded as suspicious, unless we know the individual species with which we are dealing; though it does contain such useful plants as the carrot, parsnip and celery, along with the aromatics, caraway, coriander, cummin, fennel, anise-seed, etc.

The Poison Hemlock (*Conium maculatum*) and the Water Hemlock (*Cicuta maculata*) and the Fool's Parsley (*Æthusa cynapium*) are all to be considered as virulent poisons. The root of the so-called Wild Parsnip (*Pastinaca sativa*) has been considered poisonous, though Prof. Power asserts it is not, and that the alleged instances of poisoning by this plant are to be charged to the Water Hemlock. There is a popular idea that the Wild Parsnip is poisonous by proximity, just as the Poison Ivy is known to be.

- (g) In the Sunflower family (*Compositæ*) attention should be drawn to the so-called Canada Thistle. It is not a native of Canada, or of any part of North America, but comes from Europe. It is none the less a most troublesome weed. When it occurs on lawns, the persistent use of the lawn mower will destroy it.

The Ox-eye Daisy (*Chrysanthemum Leucanthemum*) which is so prized in bouquets, and so detested in the fields, is also an introduced plant.

- (h) Indian Tobacco (*Lobelia inflata*), easily recognized by its small, irregular, blue flowers and its inflated seed-vessels filled with small seeds, is a well-known virulent poison. A possible danger from this plant lies in its common name.
- (i) Our common Laurel (*Kalmia latifolia*) and the Lambkill (*Kalmia augustifolia*) are both reputed poisonous; but more exact observation is required. It is supposed the plants that produced the poisonous honey "which maddened Xenophon's soldiers during the retreat of the ten

thousand," were either an Azalea or a Rhododendron, or both.

Our Laurel is not to be regarded as the same plant as the Victor's Laurel of the ancients. That belonged to quite another family of plants. Our shrub receives its name from a resemblance of its leaf to that of the Classic Laurel.

- (j) The Oleander (Apocynaceæ or Dogbane family), introduced from the Levant and cultivated for its flowers, is reputed poisonous in wood, bark, foliage and flower. It is even stated that the use of its wood for meat skewers has been a cause of death.
- (k) Jamestown Weed or Thorn Apple (Datura Stramonium), a well-known, large, ill-odored, herbaceous weed belonging to the Potato family, introduced probably from Asia, is, like its relative, the Common Nightshade (Solanum nigrum), to be avoided. The fact that these plants are found most commonly around dwellings, makes them the more dangerous.
- (l) Toadflax, or Butter and Eggs (Linaria vulgaris), of the Figwort family, furnishes a striking illustration of the rapidity with which a foreign plant may spread. This was introduced from Wales by a Mr. Ranstead, of Philadelphia, as a garden flower. Within less than two centuries it has spread widely, and is now, *as a weed*, a thorough pest.

In the same manner, however, a water plant (Anacharis), taken from our own waters into those of England, has spread until it is said to choke up the streams and impede navigation.

- (m) Pokeweed (Phytolacca decandra) too common to need any description, is probably introduced. Its root is certainly poisonous, and the juice of its berries, formerly used as an adulterant and coloring matter in Portugal, is in so bad repute that that government has forbidden the cultivation of the plant. Its young shoots are eaten as a salad, in the early spring. Care should be taken that these be used only when young, as their injurious properties increase with age.

- (n) Early spring brings a white flower with a greenish stripe on the outside of the petal. It is most common in meadows, lawns, etc. Star of Bethlehem (*Ornithogalum umbellatum*) is the name by which it is commonly known. This is one of the most troublesome to exterminate of all the plants introduced from Europe.
- (o) The White Hellebore (*Veratrum viride*) of our swamps is most actively poisonous, and is liable at all times to become a source of danger to those not familiar with it.
- (p) The vast order of the grasses, from which we derive all our cereals, contains but few poisonous species. There are some which have so much silica as to be unfit for forage.

We have made no enumeration of valuable and injurious plants, but merely called attention to a few with the desire of leading to

SOME GENERAL CONSIDERATIONS.

A large proportion of the plants alluded to in the Fifth and Sixth Lectures, originated elsewhere than in North America. Hence one might be led to conclude either that we are poor in plants having great value as food-producers, and also in those having active remedial properties or which are aggressive as weeds; or that we are as yet quite unacquainted with the resources and character of our own flora. For various reasons we should more likely adopt the latter alternative. We do know that there are large numbers of plants possessing valuable fibres which would long since have been utilized but for the fact that there were other fibres more available, and also from want of proper machinery. It was the invention of the cotton-gin which gave cotton its place in the markets of the world.

We are also assured that there are many plants capable of producing large quantities of valuable grain, if properly cultivated and improved. What might we not hope for from the various species of chenopods which now flourish on our desolate Western plains if these plants had been under cultivation anything like as long as rice, wheat or Indian corn!

That our flora is not wanting in plants having active properties is proved by the increasing number of species

which are coming into use as drugs. The first conclusion we reach is, that under proper stimulus and in due time our native flora is destined to play a more important part than it now does.

Of the plants enumerated as foods, many have been under cultivation at least two thousand years, some probably as much as five or six thousand years. Of this there is strong historical probability. But among these plants are many weeds coming without man's consent, under his care, and tolerated simply because their removal involved labor on his part. Indeed, there is certainty in some instances, and probability in others, that many of these plants now so obnoxious to us were, in the earlier, less critical ages, cultivated as remedies or as food. The High Mallow is such an one. In course of time these plants came to thrive in cultivation to such an extent that we can hardly avoid their presence. Hence those cosmopolitan weeds, which we have in common with all the agricultural nations, may have been associated with man as long as the cereal grains.

The discovery of America gave a fresh start to interchange of both cereals and weeds.

De Candolle has called attention to the fact that the "earliest husbandmen employed chiefly annuals or biennials." They desired immediate returns for their labor. The same author states that "plants cultivated for less than two thousand years are chiefly artificial fodders, which the ancients hardly knew." This statement may be said to mark a point in human history, where pastoral life was becoming fixed into agricultural.

De Candolle also concludes that "at the end of the nineteenth century, men will probably cultivate, on a large scale, and for use, about three hundred species. This is a small proportion out of the one hundred and twenty, or one hundred and forty thousand in the vegetable kingdom."

It is, however, much more likely that other plants capable of thriving in drier or rougher soil may be added to the list as the population becomes more dense, and the "struggle for existence" more severe.

How have men learned to utilize plants as food? For many species of plants any answer to this question would involve an answer to the circumstances of human origin; but for other species two answers may be given: first, ob-

servation of the habits of the lower animals. This would be an unsafe guide sometimes, as the horse, for example, can and does eat and relish "Poison Ivy," which would probably act as an irritant poison to man. The second answer is an obvious one. In times of famine (which come frequently to savage races) anything that will appease the pangs of absolute starvation will be seized upon as an article of food. Thus, out of disasters came a knowledge that some plants *were*, and others were *not*, available as food. Some would be taken as a very last resort, for example, the lichen, known as Rock Tripe. Others would be taken eagerly at all times, as the various berries of the Rose family. The knowledge that some plants, which uncooked are violent poisons, become, when cooked, delicious, nutritious foods, involves a long advance from an absolutely primitive condition.

HOME READING.

None available.

EXERCISES.

1. When do Buttercups bloom, and where do they grow? What prevents them from being injurious when found in dry forage?
2. How would you distinguish between Virginia Creeper and Poison Ivy? Can you recognize a case of ivy poisoning? If so, how?
3. Describe the Jamestown Weed?
4. The White Hellebore (*Veratrum viride*) is common in this region. Can you indicate an exact locality? What other plants do its leaves most resemble?
5. It is an old question, but what is a weed?
6. What special facts would make you suspect a particular weed came from some foreign country?
7. If you were lost amid dense vegetation and without food, what kind of plants would you resort to for support?

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EXERCISES.

1. What was Socrates' definition of Justice?
2. Give a biographical sketch of Sir Thomas More.
3. Outline one feature of the social system of Looking Backward.
4. What did George Ripley do for American literature?
5. What was the object of the Brook Farm Community?

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The Republic of Plato, Davies and Vaughn's translation. Macmillan & Co., N. Y. Price, \$1.25.

Ideal Commonwealths in Morley's Universal Library No. 23. Routledge & Sons, N. Y. Price, 35 cents.

Looking Backward—2000—1887—by Edward Bellamy. Tichnor & Co., Boston, 1888.

See chapter on Brook Farm in American Men of Letters series (Margaret Fuller Ossoli).

Years of Experience, by Mrs. G. B. Kirby. Copies can be purchased of Miss Ora B. Kirby, Home Haven, Santa Cruz, Cal. Price, \$1.00.

LECTURE II.

AT BROOK FARM.

Charles A. Dana.

Birth—At Buffalo, N. Y.—At Harvard—At Brook Farm, 1842—Mr. Dana, the Editor; the Harbinger, the Chronotype, the New York Tribune—

Assistant Secretary of War—The Chicago Republican—The New York Sun—The American Cyclopaedia—Influence and writings of Mr. Dana.

George William Curtis.

Birth—Education—Life in New York—At Brook Farm—Concord farming—Abroad—New York Tribune—Putnam's Monthly—The "Editor's Easy Chair"—Harper's Weekly—Mr. Curtis, the Politician—"Potiphar Papers"—"Prue and I."

Margaret Fuller Ossoli, the visitor.

Birth—Education—At Dr. Park's School—At the Misses Prescott's—The Teacher—Brook Farm—Her Conversations—The Dial—The N. Y. Tribune—Abroad—Marriage—The Italian struggle for independence—Refugees—Passage to America—Shipwreck—I. Period of Self-culture—II. Period of Literary Production—III. Period at Rome.

EXERCISES.

1. What has Charles A. Dana written ?
2. What has George William Curtis written ?
3. Read some number of Editor's Easy Chair, Harper's Magazine, written by Mr. Curtis, and write a brief paper about its style, thought, etc.
4. Compare Margaret Fuller with Zenobia, a character in Blithedale Romance.

READINGS AND REFERENCES.

Prue and I, by George William Curtis. Harper & Brothers, New York.

Summer on the Lakes, by Margaret Fuller.

Life of Margaret Fuller, by Emerson, Clarke, and Channing.

Life of Margaret Fuller, by T. W. Higginson, Amer-

ican Men of Letters series. Houghton, Mifflin & Co., Boston.

Blithedale Romance, by Nathaniel Hawthorne.

LECTURE III.

NATHANIEL HAWTHORNE.

I. Biography.

Ancestry, Puritanic—Early life in Salem—Hawthorne's youth—His early education—At Bowdoin College—His classmates—The Peabody sisters—Custom-house life—At Brook Farm—The "Way-side"—Consul at Liverpool—Life in Italy—Attitude during the Civil War—His friends.

II. Autobiographical.

The Gentle Boy—The Seven Vagabonds—Little Annie's Ramble—Preface to Snow Image—The Devil in Manuscript—Prologue to the Scarlet Letter.

III. The Author.

Hawthorne, the recluse—Failure of early publications—The sources of his stories—The influence of his friends—His style—Bryant's "coldness"—Hawthorne's "gloom"—The Great Stone Face—American Note-Book—Mosses from an Old Manse—The Scarlet Letter—The Marble Faun.

EXERCISES.

I. What was the influence of college friendships upon Hawthorne's life and writings?

2. How did Hawthorne's life abroad affect his writing?
3. Was Hawthorne justified in writing his Prologue to the *Scarlet Letter*?
4. Read "The Great Stone Face" and write a synopsis of it.
5. What was Hawthorne's experience at Brook Farm?

REFERENCES.

Hawthorne's Complete Works. Houghton, Mifflin & Co., Boston.

Yesterdays with Authors, by J. T. Fields. Houghton.

Hawthorne, by Henry James. English Men of Letters series.

Nathaniel Hawthorne and his Wife, by Julian Hawthorne.

Modern Classic Series, No. 28 (Essay by Fields and two or three stories by Hawthorne). Houghton, Mifflin & Co. Price, 40 cents.

LECTURE IV.

SOME CONCORD WRITERS AND OTHERS.

A. Bronson Alcott.

Birth—A farmer boy—A peddler—A teacher, and his methods—Life at Concord—The lecturer—At "Fruit lands"—The philosopher—His conversations—His home—"Concord Days."

The Channings.

William Ellery, the elder—The Anthology Club—The North American Review—Christian Examiner—

His "Character of Napoleon"—William Ellery, the younger—Nephew of the above—His teacher, Charles Sumner—In the West—Relation to Margaret Fuller—His "Thoreau, the Poet and Naturalist"—William Henry—His eloquence—In America—In England—His children.

Theodore Parker.

Birth—Ancestry—Education—Preacher—At West Roxbury (1837-1845)—Influence of the Brook-Farmers—Abolitionist—"Less a thinker than a doer."

Boston Transcendentalism.

EXERCISES.

1. Write a biography of Bronson Alcott.
2. What was the influence of the Channings?
3. What can you say of Concord as a literary centre?
4. What is your opinion of the literary merits of Channing's Life of Thoreau?

LECTURE V.

HENRY DAVID THOREAU (1817-1862).

I. Biography.

Birth—Education—His early limited circumstances—He teaches—"Never left Concord except upon a lecturing tour or a pedestrian excursion"—Dislike for cities—At Walden—In prison for a principle—Disposition and habits.

II. Thoreau, the Poet.

- III. Thoreau, the Naturalist.
- IV. Thoreau, the Essayist.
- V. Thoreau's Works, published by Houghton, Mifflin & Co., Boston. Price, \$1.50 per vol. *Walden*; or, *Life in the Woods*—A week on the Concord and Merrimack Rivers—Excursions in Field and Forest (biographical sketch by Emerson)—The Maine Woods—Cape Cod—Letters to various Persons, and a few Poems—A Yankee in Canada, with Anti-Slavery and Reform Papers. (Only the first two appeared before the author's death.)

EXERCISES.

1. What was Thoreau's object in living at Walden?
2. Read "*Walden*" and write a short paper on Thoreau's style.
3. Point out the poetical in Thoreau's prose.
4. Write a brief biography of Thoreau.
5. Was Thoreau justified by the results in living a solitary life?

READINGS AND REFERENCES.

- The Poet-Naturalist, by William Ellery Channing.
- Life, by F. B. Sanborn, American Men of Letters series. Houghton, Mifflin & Co., Boston. Price, \$1.25.
- Short studies of American Authors, by T. W. Higginson.
- Lowell's Criticism in *My Study Windows*.

LECTURE VI.

RALPH WALDO EMERSON (1803-1882).**I. Biography.**

Ancestry, Puritanic—His youth—His education—At Harvard — Enters the Ministry — Emerson's friends.

II. Emerson, the Preacher.

III. Emerson, the Orator.

IV. Emerson, the Essayist.

V. Emerson, the Poet.

VI. Emersonian philosophy—Emersonian ethics.

Read : The Fortune of the Republic and other American Addresses (Riverside Literature Series, price 15 cents) —Essays on The Poet, Character, Nominalist and Realist, and New England Reformers—Poems entitled The Problem, Woodnotes, Threnody, and May-Day.

EXERCISES.

1. What was Emerson's reason for resigning his pastorate in Boston ?

2. Write an abstract of Emerson's Fortune of the Republic.

3. What are Emerson's requirements for the poet ?

4. Read the Sphinx, and point out the poetical expressions.

5. Was Thoreau a disciple of Emerson ?

REFERENCES.

"Ralph Waldo Emerson, his Life, Writings, and Philosophy," by G. W. Cooke (Boston, 1881).

Ralph Waldo Emerson, by Oliver Wendell Holmes, American Men of Letters series (Houghton).

The Genius and Character of Emerson, by F. B. Sanborn, Boston, 1884.

An Estimate of his Character and Genius, by A. Bronson Alcott.

GENERAL REFERENCES.

Cyclopedia of American Biography, 6 vols., D. Appleton & Co.

Transcendentalism in New England, by O. B. Frothingham, Putnam's Sons, N. Y., contains chapters on "The Seer—Emerson," "The Mystic—Alcott," "The Critic—Margaret Fuller," "The Preacher—Theodore Parker," "The Man of Letters—George Ripley."

[Series A]

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SYLLABUS
OF A
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ON
ELECTRICITY.

BY
ARTHUR W. GOODSPEED, PH.D.,
ASSISTANT PROFESSOR OF PHYSICS, UNIVERSITY OF PENNSYLVANIA.

No. 23.

Price 10 Cents.

INTRODUCTION.

Quoting from "Modern Views of Electricity," by Oliver J. Lodge, we may say that "the whole subject of electricity is divisible for purposes of classification into four great branches.*

"(1) Electricity at rest, or static electricity: wherein are studied all the phenomena belonging to stresses and strains in insulating or dielectric media brought about by the neighbourhood of electric charges or electrified bodies at rest immersed therein; together with the modes of exciting such electric charges and the laws of their interactions.

"(2) Electricity in locomotion, or current electricity: wherein are discussed all the phenomena set up in metallic conductors, in chemical compounds, and in dielectric media, by the passage of electricity through them; together with the modes of setting electricity in continuous motion, and the laws of its flow.

"(3) Electricity in rotation, or magnetism: wherein are discussed the phenomena belonging to electricity in whirling or vortex motion, the modes of exciting such whirls, the stresses and strains produced by them, and the laws of their interaction.

"(4) Electricity in vibration, or radiation: wherein are discussed the propagation of periodic or undulatory disturbances through various kinds of media, the laws regulating wave velocity, wave-length, reflection, interference, dispersion, polarization, and a multitude of phenomena studied for a long time under the heading '*Light*.'"

* The present course will consider only three of these branches.

EXERCISES.

Exercises for the lectures of each week will be found at the end of the Syllabus. All persons attending the lectures are invited to send written answers: they should be addressed to Prof. A. W. Goodspeed, University of Pennsylvania, and should arrive fully forty-eight hours before the following lecture. Some signature, together with the name of the lecture-centre to which the exercise is to be returned, should be placed at the top of the first page. The papers will be returned, with comments, at the class, when further explanations on the general subject will be made. All are invited to the class, whether they have sent exercises to the lecturer or not.

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LECTURE I.

ELECTROSTATICS.

ELECTRIFICATION.

Bodies may be electrified in a variety of ways. The principal methods are by contact, conduction and induction.

(a) ELECTRIFICATION BY CONTACT.

Experiments with amber, sealing-wax, glass, etc., illustrating simple properties. Property of electrification by contact is universal, except when the two bodies are identically alike.

Definition.—The electrification found on glass when rubbed with silk is called *positive* or *vitreous*. That found on sealing-wax when rubbed with flannel is called *negative* or *resinous*.

Method of Detecting Electrification.—Gold-leaf electroscope shown and explained. Electrifications of like kind repel each other ; electrifications of opposite kind attract each other. These facts enable us, by means of the electroscope, to distinguish between positive and negative electrification. Experiments with the electroscope.

(b) ELECTRIFICATION BY CONDUCTION.

A *silk* thread held in the hand does not discharge the electroscope. A *cotton* thread discharges it slowly. A *copper* wire discharges it instantly. Copper is said to be a good conductor ; cotton, a poor conductor ; silk, a very poor conductor.

Air and gases, in general, are poor conductors.

A partial vacuum, however, is a good conductor; a nearly complete vacuum, a non-conductor.

Liquids, in general, conduct very much better than gases, but seldom well. They present a great variety among themselves; mercury conducts excellently; turpentine, hardly at all.

Bodies well-nigh impermeable to electricity are called dielectrics.

Conduction gives a charge of the same kind as that of the charging body.

Experiments in charging by conduction.

(c) ELECTRIFICATION BY INDUCTION.

Cylinder charged without contact with any other body. Tested with the electroscope. Positive charge on one end, negative on the other.

Any insulated conductor, brought into the neighborhood of a charged body, will become electrified. On the side next the charged body the electrification will be of the kind opposite to that of the charged body. But on the side of the conductor which is away from the charged body the electrification will be of the same kind as that of the charged body.

Faraday's "Ice-Pail" Experiment.—Whenever any given quantity of electricity is produced, an equal amount of the opposite kind is produced at the same time. Experiment explained.

The Electrophorus.—A simple instrument for producing electrification by induction. (Diagram and experiment.) Experimental method of increasing indefinitely the induced charge without diminishing the original charge.

The Holtz Machine.—A mechanical device for doing this; the modern substitute for the old cylinder, or plate machine.

Induction gives a charge of the opposite kind to that of the charging body.

A Remarkable and Important Fact.—A closed conductor shields all within it from any electrical action on the outside. Experimental proof of this.

This suggested to Maxwell that the best form for a lightning-rod is one which approximates a network covering the entire house.

For instantaneous discharges, such as those of lightning or of a Leyden jar, the form of the conductor is more important than the thickness or the substance in determining the ease with which electricity will pass through it.

Definitions.—Charge = quantity of electricity in a body.

Unit quantity is that which, in a vacuum, will act upon an equal quantity placed at unit distance with unit force.

Potential = electrical pressure.

Potential is a condition *at a point* in space, and is measured by the amount of work required to bring a positive unit of electricity from infinity to that point.

By infinity, we here mean a point so far distant as not to be affected by any of our electrified bodies.

The earth is so large that we cannot detect any change in its electrification. We take it, therefore, as our standard of potential, and call its potential zero.

Electricity always tends to flow from places of higher potential to those of lower potential. This tendency is called *electro-motive force*, and is measured by the difference of potential between the two points.

CONDENSERS.

An electrical condenser is an appliance for increasing the charge without increasing the potential.

The Leyden jar a familiar example.

The fact of condensation noticed first by Cuneus in 1746. Cuneus was a pupil of Muschenbroeck, a phil-

osopher of Leyden. The principle explained and illustrated.

Experiments *ad lib.* for the general illustration of the subject.

REFERENCES.

Deschanel's *Natural Philosophy*, Chapters XLI-XLIX.

S. P. Thompson's *Elementary Lessons in Electricity and Magnetism*, Chapter I.

LECTURE II.

ELECTRIC CURRENTS.

THEIR PRODUCTION.

The production of currents may take place in three ways :

- (a) By chemical action.
- (b) By the expenditure of heat.
- (c) By induction.

(a) THE VOLTAIC CELL.

Short historical sketch giving the progressive changes from the time of Volta and Galvani to the present time.

The units to be considered first are the volt, ohm, ampère and coulomb.

Definition.—The volt is the unit of electro-motive force (E. M. F.) and is about that between zinc and copper in a solution of sulphuric acid.

The ohm is the unit of resistance and is about that of a column of mercury of 1 mm. cross-section and 106 cm. long.

The ampère is the unit of current strength and is that which flows when the electro-motive force is 1 volt and the resistance 1 ohm.

The coulomb is the unit of quantity and is the amount of electricity that passes any given point of a conductor in 1 sec. when the current strength is 1 ampere.

Consideration of Special Forms of Cell.—The great objection to the simple copper and zinc element is its rapid polarization. Methods for obviating this difficulty—mechanical and chemical.

The Daniell cell, composed of copper and zinc in solutions of sulphate of copper and sulphuric acid. Its chemical action.

The Grove cell, composed of platinum in strong-nitric acid and zinc in dilute sulphuric acid. Stronger than the Daniell cell, but not as durable.

Open circuit cells, of which the Leclanché is an example.

The "Storage Battery," composed of two lead plates immersed in dilute sulphuric acid. The plates are coated with red lead, and the charging current reduces to spongy lead the coating on the negative plate, while that on the positive plate is oxidized to PbO_2 .

(b) THE PRODUCTION OF CURRENTS BY HEAT.

This is effected by applying heat to one of the junctions in a circuit composed of two different metals. First shown by Seebeck, of Berlin, in 1821. The efficiency not great.

The thermopile, a very useful instrument for detecting small quantities of heat. *Bismuth* and *antimony* are desirable metals to use together for this purpose, as they are quite far apart in the *thermo-electric series*.

(c) PRODUCTION OF CURRENTS BY INDUCTION.

This field was first entered upon by Faraday in 1831, and his investigations constitute an epoch in the history of electrical science.

Laws.—When a current begins to flow, or receives

a sudden increase in strength, it induces an inverse current in a neighboring conductor ; when it ceases or is suddenly decreased, it induces a direct current. The induced currents are only instantaneous.

When two conductors—one conveying a current—are made to approach each other, an inverse current is induced in the other conductor ; if the conductors are made to separate, the induced current is direct. The induced currents continue only as long as does the relative motion.

Any relative motion of a conductor and a magnet, or any change of strength of the latter when in the vicinity of the former, induces a current in the conductor.

Lenz's Law. In all cases of induction the direction of the *induced* current is such that the mutual action between the two currents—viz., attraction or repulsion—opposes the motion.

(These laws explained and illustrated. For their application, see subsequent lecture.)

REFERENCES.

Deschanel's *Natural Philosophy*, Chapter LIII, §§ 768–774, 799–805.

LECTURE III.

ELECTRIC CURRENTS.

THEIR MEASUREMENT.

Electric currents may be measured by their mechanical, chemical or thermal effects ; *i.e.*, with a galvanometer, a voltameter or a calorimeter.

GALVANOMETERS.

These instruments depend for their action upon the principle discovered in 1819 by Oersted, a Danish

philosopher, that a magnetized needle could be deflected by an electric current.

(Illustrative experiments.)

Ampère's Rule. Imagine an observer to be so placed, facing the needle, that the current passes through him from his feet to his head, then the north pole of the needle will be deflected to his left.

Discussion of various forms of instrument; *e. g.*, the astatic, the tangent and Thomson's mirror galvanometers.

Formula for the tangent galvanometer:

$$C = \frac{H r}{2 \pi n} \tan \theta = k \tan \theta$$

where $\left\{ \begin{array}{l} C = \text{strength of current.} \\ H = \text{horizontal intensity of earth's magnetism.} \\ \theta = \text{angle through which magnet is deflected.} \\ r = \text{radius of coil.} \\ n = \text{number of turns.} \\ \pi = 3.1416. \\ k \text{ is called the reduction factor.} \end{array} \right.$

The Thomson Galvanometer used as a receiving instrument on submarine cables.

VOLTMETERS.

The power of a current to decompose chemical compounds is the property which is sometimes taken advantage of, especially in the laboratory, for standardizing current-measuring instruments.

Voltmeter and Edison house-meter described.

The essential principle here involved is the fact that the amount of metal deposited is strictly proportional to the quantity of electricity which has passed through the liquid. (First Law of Faraday.)

Formula—

$$C = \frac{W}{e t}$$

$$\text{where } \left\{ \begin{array}{l} C = \text{strength of current in ampères.} \\ t = \text{time, in seconds, during which current} \\ \quad \text{is passed through the cell.} \\ e \left\{ \begin{array}{l} = \text{a constant.} \\ = \text{amount of metal deposited by one} \\ \quad \text{ampère in one second [for copper} \\ \quad \text{it is 0.000326 grammes].} \end{array} \right. \\ W = \text{weight of metal deposited.} \end{array} \right.$$

Use of the voltameter for determining the reduction factor of a galvanometer.

Application of electrolysis to electroplating.

THE CALORIMETRIC METHOD.

Heating effect—proved by Joule to be proportional to the square of the current ; hence available for both alternating and direct systems.

Principle of the Cardew Voltmeter.

Formula—

$$C = \sqrt{\frac{J H}{R t}}$$

$$\text{where } \left\{ \begin{array}{l} C = \text{strength of current.} \\ R = \text{resistance of wire in which the heat } H \text{ is} \\ \quad \text{developed.} \\ t = \text{time in which the heat } H \text{ is developed.} \\ J = \text{mechanical equivalent of heat} = 42000000. \end{array} \right.$$

Practically useful only for large currents, and only when R can be measured.

The ammeter and voltmeter—practical measuring instruments for current and electro-motive force.

OHM'S LAW.

In any closed circuit the current strength is equal to the ratio of the electro-motive force to the resistance, or

$$C = \frac{E}{R}.$$

Ohm's law enables us to arrange a battery of any given number of cells so as to obtain the greatest effect.

Consideration of this point in detail with numerical illustrations.

Simple methods for comparing resistances.

REFERENCES.

Practical Physics, Glazebrook and Shaw, pp. 395-430.

LECTURE IV.

MAGNETISM.

GENERAL PRINCIPLES.

Definition.—A magnet is any body that will attract iron.

This property was first discovered in a certain kind of iron ore, found in Magnesia, a province of Asia Minor; this gave rise to the term *magnet*. Bars of hard steel artificially magnetized make the best magnets.

The magnetic force is strongest at the ends of the bar, while there is none at all near the middle.

Diagram showing the distribution of magnetism. Exhibition of magnetic spectra formed with iron filings, and showing the arrangement of the lines of force in various cases. The ends of a magnet are called its poles. A freely suspended magnet takes up a position nearly north and south, and is then called a magnetic needle.

Various ways of naming the poles. We shall call the end pointing north, the *marked* pole; the other, the *unmarked* pole.

Law.—Two like magnetic poles repel, while two unlike poles attract each other. Also, the magnitude of

the force is proportional to the product of the strengths of two poles and inversely proportional to the square of the distance between them.

If a magnet be broken, two others similar to the first will be formed.

Experiment showing how a bar magnet may be made.

MAGNETIC INDUCTION.

This phenomenon is similar to that of electrostatic induction; *e. g.*, if a piece of iron or steel be brought near a magnet it becomes magnetized, the iron temporarily, but the steel permanently. In this case the adjacent poles of the neighboring magnets are unlike.

TERRESTRIAL MAGNETISM.

As a magnetic needle free to move takes up a definite position, the earth acts as if it were a controlling magnet, with its unmarked pole north and its marked pole south.

The angular deviation of the movable needle from the true north and south meridian is called *magnetic declination*.

The angular deviation of the needle from a horizontal plane is called *inclination* or *dip*. In the northern hemisphere the marked pole is depressed.

Exhibition of diagram showing the isogonic lines (equal declination) and the isoclinic lines (equal dip).

Variation of the magnetic constants. Construction and use of the mariner's compass explained.

ELECTRO-MAGNETISM.

If a coil of insulated wire be wrapped about a bar of iron or steel, the latter becomes a magnet on passing current of electricity through the wire. Such a magnet is called an electro-magnet. Electro-magnets are usually made of soft iron and retain their magnetism only while the current is flowing.

APPLICATIONS OF ELECTRO-MAGNETISM.

Short historical sketch of the telegraph. The use of the relay explained. The same principle of electro-magnetism is employed in the construction of call-bells used in houses, and the battery usually employed is an open circuit battery.

The Telephone.—Another application of Faraday's great discovery of induced currents. Bell telephone exhibited and explained. Also Hughes' microphone and the Blake transmitter.

The phonograph not an electrical instrument.

REFERENCES.

Deschanel's *Natural Philosophy*, Chaps. LI and LII §§ 858–860.

Speaking Telephone, etc., by Prescott.

LECTURE V.

INDUCTION MACHINES.

THE "INDUCTION COIL."

A device for transforming an ordinary current from a battery into one of greatly increased potential though reduced quantity. It consists of two coils of insulated copper wire, one long and fine (the secondary), the other short and comparatively coarse, within this (the primary). Within the primary coil is a soft iron core. An intermittent battery current passed through the primary induces a similar current in the secondary coil of very high pressure.

Sparks many inches in length may be obtained in this way.

Use of the induction coil for producing discharges in rarified gases.

THE DYNAMO.

The induction of currents discovered by Faraday

(1831) is the fundamental phenomenon involved in the construction of all dynamo-electric machinery. Faraday's experiment repeated. A coil of wire and a permanent magnet used as an alternating-current dynamo.

A commutator introduced, and the currents all made to flow in one direction, thus giving a direct-current dynamo.

The two essential features of the dynamo are: (1) the *field*, and (2) the *armature*, *i. e.*, (1) a region filled with lines of force, and (2) an insulated movable circuit so arranged as to cut these lines of force.

Magnetic Field.—A magnetic *field* may be defined as a region in which there are lines of magnetic force; or better, as a region in which work is, in general, required to move a magnetic pole from one point to another.

We live in a field of this kind—the “earth's field,” as it is called—due to the earth's magnetism.

A coil of copper wire, in the earth's field, turned about an axis in its plane, acts as a dynamo. A *permanent magnet* may be used to furnish the field. Such a machine is called a “magneto.”

Or the field may be furnished by an *electro-magnet*. If some external source is used to magnetize the iron core of the magnet, the machine is said to be “separately excited.”

Such are the Westinghouse and Thomson-Houston incandescent lighting dynamos.

A dynamo is said to be “self-exciting” when a part of the current which it itself produces is used to magnetize the iron in the fields.

Such are the Edison incandescent machines.

Since an alternating current does not produce a constant magnetic field, alternating dynamos, in general, are “separately excited.”

Direct-current machines are, in general, "self-exciting."

The maintenance of a magnetic field *by means of an electric current* requires a constant outlay of energy.

This is measured by C^2Rt , where C is the strength of the magnetizing current, R the resistance of the magnetizing coil, and t the time during which the field is maintained.

Hence the necessity for using in the field iron through which a given current can induce the largest possible number of lines of force.

The Armature.—The armature is that part of the electric circuit in which the number of lines of force is made to vary. It may, therefore, be considered as the source of the current. It corresponds to the battery in an ordinary galvanic circuit. The number of lines of force passing through a circuit may in general be changed in two ways: either (1) by moving the circuit to a part of the field in which the lines of force are not so thickly distributed; or (2) by rotating the plane of the circuit so as to change the angle which it makes with the lines of force, thus increasing or diminishing the number which the circuit encloses.

The former of these methods is the one used in the Thomson-Houston and Westinghouse alternate current dynamos. The latter method is employed in the Edison and Weston systems.

An armature requires much soft iron to allow the lines of force to pass through it easily.

Commutator shown and explained.

THE ELECTRIC MOTOR.

The principles of its construction essentially the same as those of the dynamo.

The armature turns when a current is passed through, simply because a conductor carrying a current tends so to place itself as to include the largest possible number of lines of force.

REFERENCES.

Dynamo-electric Machinery, S. P. Thompson.
 Deschanel's *Natural Philosophy*, §§ 815-828.

LECTURE VI.

ELECTRIC LIGHTING.

Distinction between arc and incandescent lamps.
 Both based on Joule's law regarding the heating effect of
 an electric current, viz. :

$$JH = C^2Rt. \quad (\text{See Lecture III.})$$

THE ARC SYSTEM.

When two pointed pieces of conducting carbon are connected with the poles of a powerful current-generator of any kind, a brilliant light is obtained by bringing them together and then separating them a short distance.

First arc light produced by Sir Humphrey Davy at the beginning of the present century, with a battery of 3,000 cells.

On account of its great cost then the electric light did not become of practical use till the invention of the dynamo.

As the air-space between the carbons offers great resistance to the current, the electro-motive force must be very high in this system. Exhibition of carbons, showing difference between the positive and negative pole. Some methods of regulating the length of the arc explained.

Exhibition of diagrams of various regulations.

THE INCANDESCENT SYSTEM.

Exhibition of a lamp, and its construction explained.

Differences between lamps of various companies.

The most efficient lamps are those of high resistance, for the heating effect in any part of a circuit is proportional to the resistance; hence, by concentrating a large part of the total resistance of the circuit at convenient points, *i. e.*, in the lamps, we are able to localize at these points the consumption of a large part of the electric energy, and thus make use of it for light.

Consideration of the other extreme, *i. e.*, when the lamp is of no higher resistance than the rest of the circuit.

DISTRIBUTION.

Method of distribution under direct system. "Three-wire" system of Edison.

Method of distribution under alternating system. Theory of the transformer.

The use of electric light in surgery.

Dangers of electric lighting. Precautions used to avoid them.

REFERENCES.

Arc and Glow Lamps, by Julius Muier.

Thompson's *Lessons*, pp. 328-340.

EXERCISES.

I.

1. Explain the action of the electrophorus.
2. Why is electrification found only on the surface of conductors, and what prevents it escaping from the surface?
3. Explain the condensation of electricity.
4. How would you charge a Leyden jar with its inner coating connected with the earth?
5. Explain the action of lightning-rods.

II.

1. Explain in what respect 'Volta's theory differed from Galvani's.
2. Name two of the causes of the rapid enfeeblement of a simple copper-zinc cell.
3. Explain the action of the Daniell cell.
4. What is meant by a thermo-electric combination?
5. Show how the production of a current by induction is consistent with the law of "Conservation of Energy."

III.

1. Explain an astatic system.
2. What principles are involved in the measurement of currents?
3. Derive the formula for the tangent galvanometer.
4. What is an electrolyte?
5. Is pure water capable of being decomposed by the current? Why?

IV.

1. How are the poles of a magnet distinguished?
2. Why ought a permanent magnet to be made of hard steel?
3. Give three useful applications of electro-magnetism.
4. Explain the confusion of sounds often heard on a telephone line.
5. Why is the Blake instrument better as a transmitter than the Bell instrument?

V.

1. What is the difference between a dynamo and a magneto?
2. What are the two essential parts of a dynamo?
3. Why might not an Edison meter be used for an alternating current?
4. Give diagram of the connections for a series-wound machine. Same for a shunt-wound machine.

5. How may the efficiency of a dynamo be determined practically ?

VI.

1. Which system of lighting requires the higher E. M. F.?

2. Why is it necessary to exhaust an incandescent lamp of air ?

3. Give diagrams showing the arrangement of lamps in both systems.

4. Explain the important features of the three-wire system of Edison ?

5. Give the requirements of an efficient incandescent plant.

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1. The relative importance of this branch of literature not to be seen either in the position it actually holds or in that which it is popularly supposed to occupy.

2. The growth of fiction from its earliest forms into its most popular development in the novel.

3. The laws in accordance with which this growth has taken place, and the reasons for the appearance of the novel in England in the eighteenth century.

4. The evolution of the English novel and the successive types as found in the writings of Scott, Dickens, Thackeray and Eliot.

5. The early conditions in America as affecting literary productions.

6. Charles Brockden Brown, the first American novelist.

LECTURE II.

WASHINGTON IRVING.

1. The spirit of the times.

2. Irving, the real beginner of American fiction.

3. His early life ; "Jonathan Oldstyle" and the "Salmagundi Papers."

4. The Knickerbocker period.

5. England and the "Sketch Book."

6. Spain and the Alhambra.

7. Irving of a distinctly literary nature.

8. The essentials of a true art of fiction ; how far was Irving a novelist ?

LECTURE III.

JAMES FENIMORE COOPER.

1. The novel of incident and the novel of character ; is this a valid distinction, and what is its application to Cooper ?
2. The American Scott.
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7. His literary and personal characteristics.
8. Cooper, the controversialist.

LECTURE IV.

HAWTHORNE AND POE.

1. The romance and the novel.
2. Puritanism in literature, Hawthorne and Cooper.
3. The essential Americanism of Hawthorne.
4. The artist and the moralist.
5. Plot, incident and character in Hawthorne.
6. The resemblances of Hawthorne and Poe.
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1. Its real oneness with the Romanticism of 1830.
2. The naturalism of the French and the realism of the American school.
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1. The growth of national consciousness.
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EXERCISES.

I.

1. Describe the earlier forms of fiction.
2. To what influences is due the development of the novel?
3. Give the principal characteristics of three leading English novelists.

II.

1. What are the literary qualities of Irving's work?
2. How far is he to be considered "American," and what is the proof of "Americanism."
3. Indicate the elements of the novel that exist in Irving's writings.

III.

1. What claims has Cooper to originality?
2. Indicate the sources of his literary strength.
3. Give an account of his controversial writings.

IV.

1. Describe briefly the influences that moulded Hawthorne's genius.
2. How far was Hawthorne's use of allegory an aid in his literary work?
3. Give the common characteristics of Hawthorne and Poe.

V.

1. What is realism?
2. In what countries has this principle been adopted, and who are its leading exponents?
3. Give the true test of a good novel.

VI.

1. What influences have led to the "short story?"
2. Indicate the variety of subjects in contemporary fiction.
3. Is the novel a permanent form of literature?

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Strength of Materials.

LECTURE I.

TENSION AND COMPRESSION.

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Compression, C, 260 and 429. Crushing and buckling, C, 429. Determining size to prevent crushing, C, 265. Factors of safety. Bodies alternately in tension and compression. Breaking stress for materials in compression, U, 40. Safe values for materials in compression, U, 43. Compression of tubes, U, 84.

EXERCISES.

1. A cylinder head is held on by 8 standard 1-inch bolts. The area acted on by the steam-pressure of 100 lbs. per square inch is 108.8 square inches. What is the factor of safety of the bolts if the material stands 48,000 lbs. to the square inch before breaking?

C refers to Cotterill & Slade's "Lessons in Applied Mechanics," 1891 edition.

U refers to Unwin's Machine Design, Part I, 1891, 11th edition.
Strength of Materials.

2. A 3-inch pipe-joint is made by flanges having 4 half-inch bolts. What pressure must be in the pipe to load the bolts to 8,000 lbs. per square inch?

3. An engine of 45 horse-power uses a belt 10 inches wide by $\frac{5}{8}$ thick, on a pulley 54 inches diameter, making 270 turns per minute. What is the difference in tension between the tight and the slack sides per square inch, and if the greatest tension is $1\frac{1}{2}$ times this, what is the factor of safety if the leather used breaks at 4,500 lbs. per square inch?

4. Boiler-stays 1 inch in diameter at their least section are spaced 7 inches apart. If the material stands 7,500 lbs. per square inch safely, what should be the maximum pressure carried?

5. What will be the stress in direct compression for a connecting rod $1\frac{3}{4}$ inches in diameter when the piston is at the end of its stroke? If the piston is 12 inches in diameter and the steam pressure is 100 lbs. per square inch?

6. A three-inch tube of wrought iron, .22 inch thick and 10 feet long, is subjected to 150 lbs. per square inch external pressure; what is the factor of safety?

LECTURE II.

SHEARING.

Corrugated tubes, U, 88. Shearing, C, 387. Difference between shearing and tension or compression, C, 388. Method of determining the area necessary to resist shear, C, 388. Safe and breaking stresses of materials subject to shear, U, 40, 43. Riveted joints, C, 391. The strength of the sheet and of the rivet, C, 394. Other considerations in riveted work. Reduction of strength in riveted plates, U, 109-111. Double shear, U, 101. Pin joints, C, 390.

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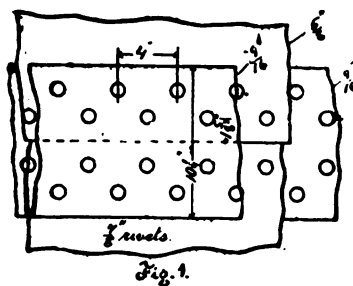
EXERCISES.

1. A corrugated furnace tube 41 inches in diameter and $\frac{1}{2}$ -inch thick is made of steel of proper quality. What is the allowable working pressure?

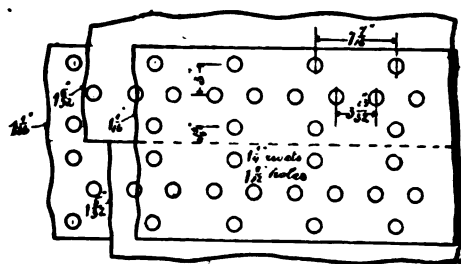
2. A rod in tension, 3 inches in diameter, of iron of 49,000 lbs., is held in place by a key in double shear, the material breaking with 45,000 lbs. per square inch shearing stress. What should be the area of cross-section of the key that it may have the same strength as the rod?

3. Two plates 7 feet long are joined by $\frac{3}{4}$ -inch rivets spaced $3\frac{1}{2}$ inches apart. What load will the rivets safely carry if the allowable load per square inch in shear is 7,000 lbs.?

4. A joint is made up as shown in Fig. 1. If the rivets are iron in punched iron plates, what is the safe load on the rivets in shear per foot of length of the joint?



5. A riveted joint is made up as shown in Fig. 2. Iron rivets are used in drilled steel plates. Which is the stronger, the sheet or the rivets, and by what per cent. of the weaker?



6. A fly-wheel 7 feet in diameter is secured to a shaft 5 inches in diameter by a key 10 inches long by 1 inch wide. If the safe load of the material is 4,000 lbs. per square inch, what should be the maximum load applied to the rim of the wheel?

LECTURE III.

BENDING.

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EXERCISES.

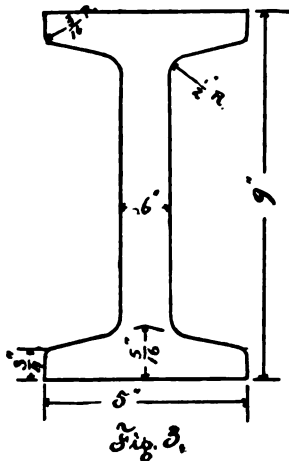
1. Several forces act on a shaft—one of 1,000 lbs. at a distance of 4 feet—one of 250 lbs. at a distance of $2\frac{1}{2}$ feet, both tending to cause rotation in one direction—one of 300 lbs. at a distance of 2 feet, and one of 600 lbs. at a distance of $1\frac{1}{2}$ feet, both tending to cause rotation in the opposite direction. What is the resulting moment, and in what direction?

2. What is the moment of inertia of a square 4 inches on a side, about one side?

3. What is the moment of inertia of a figure composed of a square 4 inches on a side having on one of its sides an equilateral triangle 4 inches on a side, the axis being through the centre of the square and triangle?

4. A 15-inch I-beam has a moment of inertia of 430 about an axis through the centre of shape and perpendicular to the web. The area of the section is 12.5 square inches. What is the moment of inertia about the bottom of the lower flange?

5. What is the moment of inertia of the I-beam shown in Fig. 3 about an axis through its centre of shape and perpendicular to the web?



LECTURE IV.

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Data required in determining the size of a beam. Equality of the moment of the external forces and the resistance of the beam, C, 364. Beam secured at one end and loaded at the other, supposing the beam itself to be without weight, C, 288. The shearing forces acting in a beam, C, 281. Graphical representation of the bending moment and of the shearing stresses, C, 285. A beam uniformly loaded. Determination of the bending moment, C, 298. Superposition of loads, C, 303. Combined bending moments and shearing stresses, C, 304. A beam supported at both ends and loaded in the centre, C, 281. Graphical representation of the stresses, C, 286. Conventional method of representing changes in the shearing stresses, C, 287. A beam supported at both ends and uniformly loaded, C, 298.

EXERCISES.

1. What is the maximum tensile stress brought on an 8-inch I-beam secured at one end, having an area of cross-section of 8 square inches and a moment of inertia of 77.0, if it is loaded 6 feet from the support with a load of 3,000 lbs.?

2. In the above beam, what is the greatest shearing stress per square inch of cross-section?

3. A 12-inch I-beam, weighing 170 lbs. per yard, is secured at one end. The area of its cross-section is 17 square inches, and its moment of inertia is 367.0. If the overhanging portion is 15 feet long, what is the tensile stress due to its own weight?

4. A floor of 20 feet span is to be carried on 12-inch steel beams spaced $6\frac{1}{2}$ feet apart. The area of cross-section

tion of the beam is 9.46 square inches, the moment of inertia of the cross-section is 229.2, and the beam weighs 96 lbs. to the yard. What is the maximum load per square foot that should be allowed on the floor if the safe tensile stress is 16,000 lbs. per square inch?

LECTURE V.

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A beam uniformly loaded and having also loads at different points, C, 307.

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EXERCISES.

1. A 10-inch iron beam, 99 lbs. per yard, spans 16 feet and carries the load on 10 feet of the floor. If the total load is 16,000 lbs., what is the maximum tensile stress on the material? The cross-section of the beam is 9.67 square inches, and the moment of inertia is 161.3.

2. If, at 200 revolutions per minute, a three-inch shaft is used to transmit 67.5 horse-power, what is the stress on the material?

Strength of Materials.

3. The hollow steel shaft of one of the new cruisers is $13\frac{3}{4}$ inches outside diameter and 6 inches inside. If 8,000 lbs. is the safe load for the material per square inch, and the maximum turning moment is 1.4 the mean, what horse-power can be transmitted at 120 revolutions per minute?

4. The shaft of a 30 horse-power engine making 90 revolutions per minute is 5 inches in diameter at its smallest section. If the maximum turning moment is 1.6 the mean, what is the fibre stress on the material?

LECTURE VI.

COMBINED STRESSES.

Combined stresses. Superposition or combination of stresses, C, 303. Combined tension and bending. The case of a tie-rod or bolt loaded out of centre. Compression by bending or buckling, C, 429. The usual method of determining the strength of long columns. Stresses due to change of temperature. Stresses due to the inertia of moving parts.

EXERCISES.

1. A 1-inch bolt, .837 inch diameter at the bottom of the thread, if loaded axially, is safe for a load of 5,500 lbs. If the head and nut are $2\frac{1}{2}$ inches across corners, and the bolt is so fitted that the head and nut bear only the corners, what load will be required to bring the same stress on the fibres as when loaded axially?

2. If the connecting rod referred to in Exercise 5 of the First Lecture is 50 inches long, what is the maximum compression stress?

Strength of Materials.

3. A wrought-iron beam, 7" light, weighing 55 lbs. per yard, has an area of 5.5 square inches and a moment of inertia of 44.22, and is 13 feet long. This beam is so secured at the ends that it can not expand lengthwise. If the temperature of the beam increases 60° , what is the compression stress? Take the coefficient of expansion of wrought iron as .00000677 per degree, and the modulus of elasticity as 28,000,000.

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AUTHORITIES.

References are made in the Syllabus to the following works by numbers, except in the case of the first five books, which are recommended for general study and to which reference is made by the abbreviations given. The others are of interest to students of special subjects. Corresponding sections of other texts may easily be found by use of index.

- (A.) Andrews, E. Benj., Institutes of Economics.
- (C.) Clark, J. B., The Philosophy of Wealth.
- (Ma.) Marshall, A. and M. P., Economics of Industry.
- (Mi.) Mill, John Stuart, Principles of Political Economy.
- (W.) Walker, Francis A., Political Economy.

-
- (1) Adams, H. C., Relation of the State to Industrial Action.
 - (2) Atkinson, Edward, The Distribution of Products.
 - (3) Bilgram, Hugo, Involuntary Idleness.
 - (4) Boehm-Bawerk, E. von, Capital and Interest, and Positive Theory of Capital.
 - (5) —, The Austrian Economists, in (54) Vol. I, pp. 361-384.
 - (6) Bastiat, Frederic, Sophisms of the Protectionists.
 - (7) Burns, Dawson, Basis of the Temperance Reform.
 - (8) Carey, H. C., Manual of Social Science (abridged by McKean).
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 - (10) Dawson, W. H., The Unearned Increment.
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 - (12) —, The Labor Movement in America.
 - (13) —, Past and Present of Political Economy.
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 - (15) George, Henry, Progress and Poverty.
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 - (17) Gunton, George, Economic and Social Aspects of Trusts, in (56) September, 1888.

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- (19) James, E. J., Relation of the Modern Municipality to the Gas Supply.
- (20) Jenks, J. W., The Michigan Salt Association, in (56) March, 1888.
- (21) Jevons, W. S., Money and the Mechanism of Exchange.
- (22) —, Theory of Political Economy.
- (23) Maine, Sir H., Village Communities in the East and West.
- (24) Mallet, Lewis, Reciprocity.
- (25) Malthus, T. R., Essay on the Principle of Population.
- (26) Marshall, Alfred, Principles of Economics.
- (27) Marx, Karl, Capital.
- (28) Patten, S. N., Consumption of Wealth.
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- (30) —, Fundamental Idea of Capital, in (57) Vol. III, pp. 188-203.
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- (32) —, Principles of Rational Taxation.
- (33) —, Theory of Dynamic Economics.
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- (36) Proceedings of the National Conference of Charities and Corrections.
- (37) Ricardo, David, Principles of Political Economy.
- (38) Report of Connecticut Bureau of Labor Statistics.
- (39) —, Massachusetts Bureau of Labor Statistics.
- (40) —, U. S. Commissioner of Labor.
- (41) Smith, Adam, An Inquiry into the Nature and Causes of the Wealth of Nations.
- (42) Smith, R. M., Emigration and Immigration.
- (43) Summer, W. G., What Social Classes Owe Each Other.
- (44) Thompson, R. E., Elements of Political Economy.
- (45) —, Protection to Home Industry.
- (46) Walker, Francis A., Land and Its Rent.
- (47) —, Money.
- (48) —, The Wages Question.

- (49) Webb, Sidney, and Harold Cox, *The Eight-hour Day*.
- (50) Weeden, W. B., *Economic and Social History of New England*.
- (51) Wells, David A., *Recent Economic Changes*.
- (52) Wood, Stuart, *A Critique of Wages Theories*, in (54) Vol. I, pp. 426-461.
- (53) Wright, C. D., *Industrial Conciliation and Arbitration*.
- (54) *Annals of the American Academy of Political and Social Science*.
- (55) *The British Economic Journal*.
- (56) *The Political Science Quarterly*.
- (57) *The Quarterly Journal of Economics*.

LECTURE I.

DEVELOPMENT OF INDUSTRY AND RISE OF ECONOMIC SCIENCE.

A rapid review of the industrial history of society will emphasize certain contrasts:

Between ancient and modern forms of industry.

Between society with slavery and one in which labor is a commodity to be disposed of by the laborer.

Between an industrial organization which includes only a few industries and a limited population, and one which for practical purposes includes both hemispheres.

Between the man of the earlier and of the later stage.

Primitive Man.

Kind of Wealth desired (W.) 294-301. Character of the Consumption in this period. Productive processes of Nature. Modifications in Consumption. Organization of Industry (Ma.) Book IV Ch. VIII-X.

The Ancient World. Lack of Geographical Knowledge. Lack of Machinery. Lack of Means of Transportation. The prevalent Contempt for those engaged either in manual labor, or in the direction of labor (18) pp. 6, 7-10.

The Political Economy of the ancients (18) Ch. II.

The Middle Ages (18) Ch. III.

Changes in Economic Conditions. Feudalism. The Mediæval Church. The Crusades. Enfranchise-

ment of the Working Classes. Rise of the Capitalist Class. Trade Guilds. Growth of Navigation. Discovery of America and of the New Route to the East. Establishment of Colonies.

The Mercantile System (A.) Intro. § 7, (18) Ch. IV, (40) Book IV Ch. I, (16).

Modern Industrial Society.

The Rise of the Captain of Industry. The Fierceness of Modern Competition. The Growth of Monopolies. Disturbance of the Stability of Prices. Increased possibilities of Enjoyment. Waste in Production and in Consumption.

The Political Economy of Adam Smith and his School (40), (36), (Mi.).

The New Political Economy (13). The Nationalist School (8), (43). The German Historical School (18) pp. 200—215. The Austrian School (5). Influence of the New Political Economy in France, in England, in America (18) pp. 218—239. Is there an American school?

LECTURE II.

THE FRAMEWORK OF ECONOMICS.

Production.

The Factors of Production: Land, Labor, Capital, Intelligence.

The "orthodox" political economy recognizes but three. There is no general agreement as to the term to be used for the fourth factor, though

its presence is tacitly assumed by modern writers. In (W.) p. 74, it is spoken of as "mastership." Some economists deny productivity to capital, and socialists generally recognize only labor as productive in the economic sense.

Division of Labor (41) Ch. I, (Mi.) Book I Ch. VIII, (41), contains an admirable discussion of its advantages. (Mi.) calls attention to certain evils, and (Ma.) properly considers Division of Labor as only one phase of the Organization of Labor. Other phases are Combination, Localization and Diversification.

Law of Diminishing Returns (Mi.) Book I Ch. XII, (8), (31) Ch. VI.

After a certain point, additional applications of labor or capital to land yield a less than proportional additional return. *Mill* makes this law the basis of his entire theory of production and distribution.

Law of Increasing Returns (1), (Ma.), (31) Ch. VI, (26) Book IV Ch. XIII.

In certain industries, and even in agriculture, up to a certain point, additional applications of labor and of capital yield a more than proportional additional return. (1) classifies industries as those which yield increasing, those which yield constant, and those which yield diminishing returns, and considers that those which belong in the first class should be managed by the State or the municipality. *Marshall* considers that nature's activity is usually subject to the law of diminishing returns, man's activity to that of increasing returns, and that the law of constant returns comes into operation when these two balance. *Patten* points out that the law of limited returns is of at least equal importance with the other two. The application of the law

of limited returns to fishing and hunting is especially clear.

Margin of Cultivation (37), (46) pp. 9-26, or (W.) pp. 35-38.

Land is said to be at the margin of cultivation when it yields ordinary wages and interest and profits, but not rent. It is the zero point of the scale on which rent is measured.

Value.

The Orthodox or Objective View (Mi.) Book III Ch. I, (W.) pp. 78-81.

Value has ordinarily been explained as power in exchange, as a ratio between two quantities. It is said to depend on cost of production, by which is meant either that the two commodities will exchange in quantities which bear to each other the same ratio as their costs (37), or that the value of a commodity is to be ascertained by adding the various items of its cost (W.).

The Newer or Subjective View (C.) Ch. VI, (A.) Part II Ch. III § 62, (22), (33).

Value may be regarded as measured utility. Defined as the importance which a commodity acquires for us in that we recognize the satisfaction of a desire to be dependent on our possession of it. Value is thus subjective. The value of a commodity is measured by its marginal utility, *i. e.*, by the extent of the loss to the individual owner if he were deprived of it, remembering that it is usually possible to substitute for an article of which we are deprived, some other which will take its place entirely or in part, so that we are not deprived of the entire utility residing in the original article. If the first of these two explanations be accepted, value becomes a part of the theory of

exchange. If the second be accepted, value becomes the basis of the entire system of economics, and Consumption should be studied before Production; but see (A.) p. 90.

Exchange of Commodities (35) Ch. III.

But guard against *Perry's* tendency to limit economics to the science of exchange. If we assert that "the field of the science is the field of value," we cannot define value as the "relation of mutual purchase established between two services by their exchange."

International Exchange (Mi.) Book III Ch. XVII-XVIII.

A special theory of international exchange is needed only on condition that we accept the cost of production as a basis for the values of goods of domestic production.

Consumption (A.) Part V, (28).

Productive Consumption is merely one form of Production.

Consumption, in the proper sense, is the enjoyment of utilities that have been produced. It is subject to certain primary laws which are investigated in (28).

Waste, which cannot be included in either of the above, frequently accompanies the processes of Production, of Exchange and of Distribution, as well as those of Consumption.

LECTURE III.

THE DISTRIBUTION OF WEALTH.

The Sources of Income :

Utilization of natural agents, Utilization of human experience and skill, Capital, and Labor.

The income of society which springs originally from these four sources cannot be distributed in exact accordance with its sources. Each portion loses its identity. It is impossible to distinguish in any product, for example, how much of its value is due to land and other natural agents, or how much is due to the skill and experience acquired in the course of generations. It is consequently necessary to seek other principles of distribution.

The Law of Rent (37) Ch. II, (46), (31) Ch. I-II, (44).

The *Ricardian* Doctrine of Rent (46) p. 21, finds the cause of rent in the varying degrees of fertility of land. Rent and the increased price of agricultural produce are traced in (31) to social causes. Writers of the *Henry C. Carey* school (8), (44), have attacked the statement of facts on which the *Ricardian* doctrine is based. They hold that the share which the landlord receives is continually diminishing.

The Law of Profits (W.) Part IV Ch. IV.

On the theory of business profits proposed by *Walker*, there has been a most valuable and interesting discussion running through the five volumes of the *Quarterly Journal of Economics*. Those

who have participated directly in the discussion are *Walker, Macvane, Marshall, Patten, Hawley, Hobson* and *Clark*.

The Law of Interest (8) Ch. XXXIV, (2), (3).

Except in the most recent discussions, the English economists have usually treated interest as a part of profits. The tendency is now, both in actual business and in economic discussions, to distinguish the share of the capitalist from that of the employer, even where these are the same person.

The Law of Wages (52), (C.) Ch. VII, (15) Book III Ch. VIII, (34) Section IV.

The Iron Law. (37) Ch. V.

The iron law of wages is that laborers will get just such a share of the product as will enable them to maintain the usual standard of life and to perpetuate the race.

The Wage Fund Theory (Mi.) Book II Ch. XI, (8) Ch. XXXIV, (48).

That at any one moment wages are determined by the relation between that portion of the national wealth "destined to the support of laborers" and the number of the laboring population. This theory is attacked in (W.), (15), and (48).

The Residual Claimant Theory (W.) Part IV Ch. V.

Orthodox English economists have held that all the gain from improved production, inventions, etc., is appropriated by profits, that "profits are the leavings of wages;" *George*, that this gain is appropriated by the landlords; *Walker*, that the laborers if they seek their interest may secure the entire benefit of an increase of productivity; *Patten*,

that such gains go to that factor of production of which the supply is increased at the slowest rate. *Carcy* believes that the "economic harmonies" secure to the laborer an ever-increasing share of an increasing product.

LECTURE IV.

UNSOLVED ECONOMIC PROBLEMS.

The Unearned Increment (10), (15), (W.) pp. 407-433, (32).

The first question to settle is whether the gains of the landlord are essentially different from those of the merchant or of the factory-owner. Does the landlord derive an income due to other causes than his own labor or sacrifice? Is there not an "unearned increment"—*i. e.*, a surplus value in each act of production, which cannot be accounted for by any effort on the part of the producer? Does not the factory-owner, for example, derive a part of his income from such a source?

The further question, admitting that there is such a surplus, is whether it is more expedient that the individual producer should get the benefit of it, or that society should devote it to collective forms of consumption, as is advocated by those who would nationalize land, or would adopt other socialistic measures.

Whether society could thus divert its surplus values to the "public good" without diminishing or entirely losing them, is still another and a pre-

liminary question. It must be settled on different grounds from the practical question of whether it would be advisable to do so.

The Interest Question.

The Economic Problem to be distinguished from the Social and the Political Problem (4).

Even when thus distinguished it is easy to be misled in the statement of the economic problem. Is interest a part of the cost of a commodity, or is it a part of the surplus value? Is capital productive? Does it produce value? Does the entire value produced by capital pass into the hands of the capitalist? Is interest entirely a question of distribution or one of production also? Conflicting answers are given to these questions. In the discussion which follows it is assumed that interest is a question of distribution, and the problem is to determine why a certain portion of the product goes to the capitalist as interest.

Interest explained from the Productive Power of Capital (8).

From the Abstinence of Capitalists (W.) pp. 61-66.

From the Exploitation of Labor (27).

From the Opportunity of Exchanging any Form of Capital for certain Naturally Productive Forms (15), Book III Ch. III.

From the Difference between the Value of Present and of Future Goods (4) Vol. II, (5), (30).

International Trade.

For Free Trade. (Mi.) Book V Ch. X, (35), and (11) Ch. I-XIII.

Two distinct lines of argument are advanced:

That each nation is fitted by nature for cer-

tain industries, and its greatest prosperity is to be found in cultivating them. Since tariffs interfere with this "natural development," they are drawbacks to national prosperity (41), (6).

That the advantages of international exchange rest on the principle of comparative cost, and that nations may exchange freely without destroying the industries of either, even though one of the nations can produce all the commodities which are exchanged more advantageously than the other (Mi.), (W.).

For Protection (8), (45), (29).

In the writings of Protectionists, two lines of argument may be traced :

That by a system of tariffs a nation may develop the industries which flourish in older communities ; that in this process protection is needed to recompense the employer for paying higher wages ; to bring about an "industrial harmony." Protection established for such reasons is regarded as a temporary expedient, though the "vested interests" plea may afterward perpetuate the duty on particular articles (8), (45).

That protection, as a part of a deliberately-adopted national policy, is calculated to promote national progress by preventing a too close contact with lower types of civilization. The national policy, it is claimed, should seek to discover and to develop systematically all the productive capacities of the nation. The protectionist who adopts this view would not discourage foreign trade, but looks upon it as the result, not as the cause, of national prosperity (29).

Bimetallism.

The Ideal Money (A.) Part III Ch. III § 87.

The Battle of the Standards (21) Ch. XII.

Recent Changes in Monetary Systems (51) Ch. VI.

The Argument for Bimetallism (47).

The Prospect of an International Agreement (47).

LECTURE V.

IMMEDIATE INDUSTRIAL PROBLEMS.**The Labor Question.**

The discovery of a Law of Wages does not solve the labor question. This involves a consideration of the general condition of the laboring classes and proposed methods of improvement.

Population (25), (15), (Ma.).

The *Malthusian* Doctrine is that population tends to increase faster than the means of subsistence, so that, unless moral restraint is practised, the excess of population will be carried away by war, famine, pestilence and crime.

Standard of Life (37), (48), (28) pp. 43-62.

It is generally recognized that the prevailing standard of life can be raised in any society by increased production, *i. e.*, increase of income. This can be done, however, only on condition that such increase is accompanied by

Greater regularity in the supply of commodities.

Greater variety in consumption.

Flow of population to the cities.

Labor organizations (12).

Strikes and Lockouts (40).

Arbitration (53).

Profit-sharing.

Co-operation

In retail trade (39).

In production.

Summary of what political economy has to say on the Labor Question.

The Eight Hour Day (49), (48).

History of the movement for shortening the hours of labor.

In Australia.

In the United States.

In England, Germany and other European countries.

Facts as to the actual length of the present working day.

The economic effects of shorter hours

On wages.

On profits.

Sanitary and social results.

Proposed methods of securing shorter hours :

Voluntary action of employers.

Action of labor organizations.

Legislation

In fixing a normal working day.

In providing for a legal half-holiday.

In restricting child and woman labor.

In prohibiting more than a minimum number of hours, per day or week, in certain specified industries.

Immediate effects of a shorter working day.

Monopolies.

Conditions favorable to Monopoly (Ma.) Book III
Ch. IV, (11).

Influence of the Growth of Monopolies (11) Ch.
XVII-XXXI.

Trusts.

Monopolies and the State.

Indirect control (32).

Holds that there are two limits to prices—the one limit so low that sellers would refuse to part with their goods if the price goes lower, the other so high that buyers will stop buying if the price goes above it; that the tendency of monopoly, of combination, *and of the modern system of competition*, is to force prices to the higher limit; and that this causes a waste which could be obviated, in a large part, by a judicious use of the power of taxation.

Direct control: State and municipal ownership (19),
(11).

(19) Discusses the question in its specific application to the gas problem in cities. (11) Chap. XVII-XXX deals in turn with the principal so-called "natural monopolies," *i. e.*, those to which the principle of competition does not apply, and advocates public ownership.

Laissez Faire (17), (20).

The view presented is that combinations of capital cheapen production and that experience shows that consumers will get the benefit through reduced prices.

LECTURE VI.

THE ECONOMIC ELEMENT IN SOCIAL QUESTIONS.

Political economy deals with man in his relation to wealth ; but there is scarcely a social question of prominence which does not at some point touch on the consumption or production of wealth. As students of political economy, we are interested in examining such question at these points.

The Temperance Agitation.

The argument for Personal Abstinence and State Restriction based

On Moral Grounds.

On Educational Grounds.

On Political Grounds.

The Economic Question.

The American Academy of Political and Social Science discussed the economic aspects of this question in May, 1881. See (54), Vol. I pp. 59-68.

Changes in Appetite.

Changes in the character of Alcoholic Compounds.

Effect of Climate.

Waste of Land in production of crops used in making alcoholic drinks.

Conflict of Interests.

The Food Problem (28).

Changes in demand due to

Growth of Population.

Changed Habits of Living.

Development of new Tastes.
 Agriculture—The Best Use of Land.
 Transportation of Food.
 Preparation of Food—Cooking.

Charity Organization.

Indoor and Outdoor Relief in England (14) pp. 552–576.
 The Elberfeld System.
 Overseers of the Poor.
 The work of the Organized Societies in America (36).
 Economic Principles (A.) Part V Ch. I–II.
 Some Practical Suggestions.

The Immigration Question (42), (28) pp. 25–26.

The Economic Element distinguished.
 Effect of Immigration on the Increase of Population.
 Effect on Wages.
 Effect on the Consumption of Wealth.
 Economic Remedies for the Evils of Immigration.

Standing Armies.

The Political Necessity.
 The Effect on Society.
 Of withdrawing able-bodied Persons from active Industrial Life.
 Of giving to such Persons a Military Training.

Reciprocity (24). See current newspaper discussions.

The present Policy of the United States toward Foreign Trade.
 How far other than purely Economic Interests are likely to prevail.

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AMERICAN HISTORY AND GOVERNMENT.

COURSE XII.

THE ADMINISTRATION OF GOVERNMENT.

LECTURE I.

THE VARIOUS FORMS OF GOVERNMENT.

Government and State distinguished—Government direct or representative—The three expressions: Monarchic, Aristocratic, Democratic—Powers of Government consolidated or centralized—The dual distribution of powers—Confederate form (1778-1789)—Federal form (1789-1892)—Tenure of office—Hereditary—For life—Elective—Character of government as determined by the relation of the Legislative and the Executive—The English Government—The Government of France—Of Germany—Of the United States.—*Resumé.*

READINGS :

Lieber, *Civil Liberty and Self-Government*; *Manual of Political Ethics*; *Legal and Political Hermeneutics.*

J. S. Mill, *On Government.*

Dicey, *The Law of the Constitution.*

Burgess, *Political Science and Constitutional Law*, Vol. II.

Bryce, *American Commonwealth.*

Blackstone, Book I.

Calhoun, J. C., *Works*, Appleton.

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LECTURE II.

THE LEGISLATIVE DEPARTMENT IN THE NATIONAL GOVERNMENT.

The suffrage basis—This suffrage compared with that under State Constitutions in 1787—Character of National (Federal) Representation—Elections—Representation in the H. R.—In the Senate—The qualifications of members—Legislative procedure—The Speaker—The Committees—Mode of legislation—Freedom of debate—Public Opinion—The Lobby—The Power of Party—Party issues—The relations of the two Houses—Private and public bills—The scope of legislation—Legislative expert work—The Committee on Ways and Means—Taxation—The Administration of Law—Relations of the Legislature to the Executive and the Judiciary.—*Resumé*.

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LECTURE III.

THE EXECUTIVE DEPARTMENT IN THE NATIONAL GOVERNMENT.

Election of a President—The Convention—The Extra-Constitutional procedure—The Electors by the Constitution—Historical meaning of the term "Electors"—The Procedure by the Constitution—The XIIth Amendment—Powers of Congress over an election—The Presidential succession—Term of office—Various propositions, 1787—The legal qualifications for President—His rights and privileges—His diplomatic powers—The President as Law-maker—In the administration of government: Appointments and Removals—Civil Service—The President as Commander-in-Chief—The President as Judge—The Cabinet—The Executive departments—The Sub-Departments or Bureaus—These departments administrative—The rewards of political service—Various plans for a just Civil Service—The President as Politician.—*Resume.*

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LECTURE IV.

THE JUDICIARY OF THE UNITED STATES GOVERNMENT.

The Federal Judiciary unique in character—It depends upon the Executive and the Legislative—Tenure and Term—Complaint of South Carolina in 1860—Composition of the Supreme Court—Influence of the party in power—Judicial powers—Interpretation—Distribution of Judicial powers in U. S. Courts—Original and appellate Jurisdiction—Limitation on the powers of Federal Courts by the Constitution—The Senate as a Court—Impeachment of President Johnson—The Federal Courts and politics—The Federal Courts and the State Courts—The Federal Courts in the administration of government — *Resumé.*

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NOTE :

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LECTURE V.

THE ADMINISTRATION OF GOVERNMENT AS AFFECTED BY
POLITICAL PARTIES IN THE UNITED STATES.

The origin of parties—Organization of parties—The Convention—The politicians—The machine of politics—

Its working—Incentives to party activity—Rewards and punishments—The theory of elections—The Australian ballot system—The corrupt voter—The Convention in session—The campaign—Platforms and issues—Public opinion—The press—The pulpit—Academic influence—Tendencies in the great parties to disintegration—Theory of the rights of the majority—Woman suffrage—Theory of qualification of an elector—The American spirit—The best men and the worst men in politics—Party leaders out of office—President-makers—The powers behind the thrones—The dictation of party organization in the practical administration of government—In legislation—In appointments—In removals from office—In determining the character of American civil affairs—*Resumé.*

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THE BASIS OF THE ADMINISTRATION OF GOVERNMENT IN AMERICAN INSTITUTIONS.

The factors in American life—The farmers—The mechanics—The business men—The men in learned professions—The unemployed—The voluntary idle—Theories of

taxation in America—Ideas of “Efficient government economically administered”—Loose notions concerning money—Illustrations: the Mississippi scheme—The colonial paper money—Continental script—The assumption of the Revolutionary debts; Hamilton’s plan—Gold and silver *vs.* paper—The basis of sound money—American manufactures—Wages—Capital—Credit—The schools and universities—The churches and the clergy—The theory of equality—Transportation as a factor—Immigration—Anarchical organizations—The plain people—The American intellect—The American character—*Resumé.*

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EXERCISES.

LECTURE I.

1. State the distinction between the government and the State.
2. What is a consolidated government?
3. Compare the American with the English form of government.

LECTURE II.

1. Write a summary of the lecture.
2. Write the history of a bill in its passage through Congress.
3. What is the importance of the Committee of Ways and Means?
4. Is the Lobby an unmixed evil?

LECTURE III.

1. What are the constitutional limitations on the powers of the President?
2. State briefly the various functions which the presidential office serves?
3. Why was the XIIth amendment adopted?

LECTURE IV.

1. Why was President Johnson impeached?
2. Are there any limits on the Supreme Court in its interpretation of the Constitution?
3. Distinguish between the original and appellate jurisdiction of the Supreme Court.

LECTURES V AND VI.

1. Write a summary of the lecture.
2. Classify the factors which determine the character of the administration of government in the United States.
3. What is the basis of a sound currency?

4. What is the importance of an adequate system of transportation in this country as an element in the administration of Government?

SUBJECTS FOR WRITTEN THEMES :

- I. The Centralizing Principle in Government.
- II. The Power of Party in the United States.
- III. How should the President be chosen?
- IV. The Supreme Court of the United States.
- V. Public Opinion as an Influence in the United States.
- VI. The Money of the United States.

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The Library of the Pennsylvania Historical Society, 1300 Locust Street, Philadelphia; the Philadelphia Library, corner Locust and Juniper Streets; the Mercantile Library, on South Tenth Street; and the Library of the University of Pennsylvania, are open to all students daily.

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ROBERT BROWNING.

LECTURE I.

BROWNING AS A POET.

No longer any question as to the enormous influence which Browning has exerted and continues to exert. It is admitted that he was a man of great learning, of intellectual subtlety and power, of lofty ideals. He is a great teacher; but having elected to teach solely through an art medium, we must first ask, was he a poet? for he subjects himself to this test by choosing the poetic form.

The teacher or thinker and the poet; their several functions. Learning, ethical purpose, poetic greatness, all combined in Milton. Learning and poetic gifts with eccentricity may not be enough to give permanent place in poetry—e. g., Dr. John Donne. Browning and Donne compared. Intellectual force and power of reasoning in verse—e. g., Dryden.

Has Browning a sufficient mastery of the poetic form—of his medium—to entitle him to a high place as a poet?

I.—BROWNING'S OFFENCES AGAINST HIS ART.

1. *Rhyme.*

(a) Bad and ludicrous rhymes—e. g., "Bag 'em hot—Witanagemote" (Old Pictures in Florence); "Ill able—dissyllable" (Pacchiarotto). (b) Words coined, or unusual words used, to meet requirements of rhyme—e. g., "Thickens, dickens, *tickens*." (Master Hugues of Saxe-Gotha), "*Tinglish*, English." (Old Pictures in

Florence). (c) Foreign languages thrust in to make rhyme. "Dante—quod videas ante." (Old Pictures in Florence).

2. *Obscurity*

through inversion, frequent parentheses, etc. Tendency to inverted and eccentric construction appears at times even in Browning's prose (see Letter in Orr's Life of Browning, Vol. I, p. 158). But besides this verbal obscurity, also that which comes from the erratic course of many of the longer poems, where the regular progress of the poem is perpetually interrupted to follow up tempting but irrelevant side issues. This produces fault common in longer poems of *lack of unity*.

3. *Prosaic passages.*

Large proportion of versified prose in many of longer poems. Example from "Red Cotton Night Cap Country."

4. *Grotesqueness.*

Unmusical and rugged versification.

II.—CAN WE EXPLAIN OR EXCUSE THESE SHORTCOMINGS?

(a) Poets to be judged by their best. Defects could be pointed out in many an admittedly great poet—e.g., Wordsworth. His lapses into dulness, prose, or infantile doggerel. (b) A contemporary poet, who has written largely, suffers because time has not yet sifted his work and left us the best. We do not read all of many of the great poets of the past. Examples. We must try to anticipate posterity and separate Browning's best from the inferior. (c) The uniformly even and finished style may not be in all cases the most effective—e.g., Shakspeare, Spenser and the Elizabethans. See Browning's "Flight of the Duchess" and "Holy Cross Day." Browning's theory of art on this point set forth in Epilogue in Pacchiarotto. Here, as

in other instances, Browning's method suggests that of Wagner, who uses discords to heighten a general effect, or throw the more beautiful passages into bolder relief.

III. — DOES BROWNING'S BEST WORK OUTWEIGH THE FAULTS OF HIS INFERIOR?

His positive merits as an artist often underrated, because he has worked on new lines and often unequally. Browning's severest critics those who have never read him. (a) His occasional felicities. Examples. (b) Lyrical excellence. (Songs in "Paracelsus," "Pippa Passes," etc.) (c) Narrative poems at times unequalled among recent English poets. (Martin Relph, Ivàn Ivànovitch). (d) Dramatic form and subtlety. New methods. *The dramatic monologue*. "My Last Duchess" a miracle of condensation.

To conclude, we see that, viewed as an artist, Browning has (a) enlarged the province of poetry and that his work cannot therefore be fairly judged by a comparison with other poets, or by accepted standards; (b) that his art, while deficient in many respects, yet possesses certain great and peculiar excellences apart from the philosophic or ethical value of his teaching.

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As the Poems of Browning are arranged differently in different editions, no attempt has been made to refer to the particular work in which the following occur:

Browning's: My Last Duchess. Epilogue in Pacchiarotto. Holy Cross Day. Ivàn Ivànovitch. Martin Relph.

LECTURE II.

BROWNING'S THEORY OF ART.

The transition from Browning as a poetic artist to those poems in which he deals with art and the artist's function an easy and natural one.

Andrea del Sarto

one of the most beautiful of this group of art-poems.

Points to be observed about the poem.

- (a) The situation; it is a dramatic monologue.
- (b) The harmony of the situation with the spiritual atmosphere of the poem; it is "a twilight piece." Other instances of this effect in literature. Shakespeare, etc. The "pathetic fallacy."
- (c) The character of Andrea. A "half-man." The weakness which makes him constantly seek to shift the responsibility for his misdoings on fate or chance. All is "as God o'er-rules." Andrea has the kind of nature, the artistic susceptibility to sensuous beauty, joined with a lack of moral fibre and a weakness of will, which would make him a ready prey to such a woman as Lucrezia.
- (d) The character of Lucrezia. The skill with which it is shown reflected in Andrea's words and life. Her selfishness; sordid love of money; utter lack of feeling for art except as a money-making agency; her treachery and duplicity; her marvellous but unspiritual beauty.
- (e) The art-teaching of the poem; technical perfection insufficient for the production of the highest art. "A man's reach must exceed his grasp, or what is a heaven for." Art may suffer from moral flaws in the character of the artist. It is better for the medium of expression to "give way" under the burden of thought and passion, than to be perfect because thought and passion are wanting.

As an instance of the purely æsthetic feeling for art—a characteristic of the Italians of the Renaissance—Browning has given us a companion study to “Andrea del Sarto” in “The Bishop Orders his Tomb at St. Praxed’s.”

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LECTURE III.

BROWNING AS THE POET OF EMOTION.

Browning is essentially and deliberately the poet of the emotional side of man’s nature as contrasted with the rational. While himself conspicuously intellectual, and inclined in his work to intrude the element of thought at the expense of poetry, Browning never fails to teach us the superiority of feeling over mere reason. Man’s mind is cast into the shade by superior intelligences.

“Love, hope, fear, faith—these make humanity ;
These are its sign, and note, and character.

Paracelsus : Poems and Dramas, 93 (Ed. 1879).

Browning consequently prizes moments of intense feeling and aspiration, when the soul is quickened into its fullest life, as moments of self-revelation and growth. The self-revelation of a soul in a moment of spiritual crisis is accordingly characteristic of Browning’s poetic method. This he has accomplished chiefly by the use of the dramatic monologue, a form especially adapted to this purpose, but a similar motive is found in many poems of a different order. Luria among the dramas presents the contrast between cold intel-

lectual subtilty in Braccio and greatness of nature in Luria, whose "life re-teaches men what life should be;" and in Paracelsus love is higher than knowledge. Again, in Easter-Day, "mind, mere mind," is contrasted with the soul, which is able, at rare moments, to transcend temporal limitations and "pull the more into the less" (Easter-Day Verses, XXVII, XXVIII, XXIX).

These moments of spiritual crisis may be (a) moments of mystical communion or aspiration, in which the highest elements of the nature assert themselves. An instance of this through *music* is found in

Abt Vogler.

The teaching of the poem. The musician is enabled to transcend for a time earthly conditions. Heaven and earth meet, there is no more near or far (verse 4). Time, too, is annihilated as well as space, the unborn and the dead meet together (verse 5). Thus by anticipation an everlasting and unconditioned order of things is entered for the time. Evil is a temporal condition; good is never lost, but survives for us "till eternity affirms the conception of an hour" (verse 10). "Verses 4 and 5 are a bold attempt to describe the indescribable, to shadow forth that strange state of clairvoyance, when the soul shakes itself free from all external impressions, which Vogel tells us was the case with Schubert, and which is true of all great composers—whether in the body or out of the body I cannot say."

(Art. on Abbé Vogler. Browning Society Papers, Part III, p. 339.)

Again, such moments of spiritual vision may come through love; e.g., *Christina* and *Evelyn Hope*. In *By the Fireside*, the influences of nature conspire to unite the souls of the lovers in a mysterious rapture of understanding. In one supreme moment they meet

"in spite of the mortal screen." This moment seems precipitated by their being made to share in the elemental life about them, they "catch for a moment the powers at play" (verse 48).

Or (*b*) moments of spiritual crisis may be the revelation of some latent or slowly accumulating evil tendency. A wrong decision, made almost instinctively at some crisis of life, may be but the culmination or consequence of former weakness or misdoings.

We find an example of this in dramatic monologue

Martin Relph.

And in the same volume (Dramatic Idylls, First Series), Ivàn Ivànovitch is a related study.

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LECTURE IV.

BROWNING AS A TEACHER.

In the art-poems—both those relating to painting and to music—Browning lays stress on Moral Purpose. Like Milton and Wordsworth, he regards the artist as the spiritual teacher. Regarding lack of spirituality as an artistic defect (*Andrea del Sarto*), as we should expect, we find him carrying his conception of the artistic function into his own work.

What, then, does Browning teach?

The two ultimate and fundamental facts are God and the soul (see passage in *La Saisiaz* ending—"call

this—God, then, call that—soul, and both—the only facts for me”). In order to understand these facts a third is essential—personal immortality. The development of the soul, in its relations to an eternal or extramundane order of things, is the chief subject of Browning's work, as it is—in his judgment—the supreme interest of life. “The straitness of our mortal life” (Cleon) is the great factor in this development. The world the divinely ordered forcing house of the soul. Growth being by stress, experience, *life must be lived to the full*. Browning's intense enjoyment of life; his delight both in nature and man; expression of physical enjoyment in Saul and elsewhere. But completely as we may live, life here yet remains incurably inadequate. The soul developed largely through the sense of life's inadequacy. Anything which arouses the soul to beat against the bars, or enables it to transcend temporal limitations, therefore of first importance. Such is the function of emotion, which is an antidote to narrow, complacent contentment or stagnation. In the form of aspiration, emotion is that preparatory flight which prepares us for a wider sphere. It is a function of the artist to stimulate such aspiration; hence, the duty of the moral purpose in art. The passionate exaltation that comes through music enables Abt Vogler to anticipate a future perfection. Human love is also considered in its eternal relations (Evelyn Hope, *By the Fireside*, Christina, etc.). Cleon and Rephan among the poems which embody characteristic teaching.

Cleon.

(a) The setting of the poem. As in *Andrea del Sarto*, the note is struck at the outset. Here it is a background of Greek beauty and grace worthy of Alma Tadema. (“The portico royal with sunset,” “The lyric woman in her crocus vest,” etc.) (b) Cleon

the heir to all the treasures of Greek civilization. (c) Cleon's dissatisfaction with life arises from his finding it "inadequate to joy." The cause of dissatisfaction in "The Epistle of Karshish," and in "Saul" compared with Cleon's. The argument for future life in these and other poems. (1) The inadequacy of this life implies another. (2) The misery of this life can only be reconciled with the harmonious design elsewhere observable in nature, by considering it as preparation for another.

Rephan.

Browning's latest reiteration of his explanation of the inadequacy of human life.

REFERENCES.

Browning's La Saisiaz, Abt Vogler, Cleon, Rephan, Evelyn Hope, By the Fireside, Christina, Rabbi ben Ezra.

LECTURE V.

BROWNING AND HIS TIME.

"* * * escapes then still
Some proof, the singer's proper life was neath
The life his song exhibits, this a sheath
To that."—Sordello.

Browning the man. The largeness of his personality; profusion of his creative power; enormous intellectual resources, etc.

What was the world and time with which such a capacious nature had to deal?

Condition of English poetry when Browning began to write (1833). Interval between the close of one great period and the beginning of another. Tennyson's first book, 1830. Mrs. Browning's Prometheus Bound, 1835.

R. Browning's work covers half a century and is contemporaneous with a notable poetic period.

Some characteristics of English poetry since 1830.

(a) Great finish and attention to form, begun by Keats and carried on by Tennyson. (b) Sympathy with Nature, continued from Wordsworth and others. (c) Lack of masculine force and objective power in portrayal of human life in action, and, conversely, the tendency to be analytic and introspective.

In this period we find (a) a *poetry of evasion*, which seeks to avoid the pressing and ugly problems of the time by taking refuge in a Palace of Art. To this class belong Keats (Keats died before beginning of period, but virtually belongs to it), Rossetti, in a degree Swinburne, and, notably in his earlier work, William Morris. With these may be included writers of society verse, Dobson, Lang, etc. (b) A *poetry of doubt*, self-examining and unsettled, M. Arnold, A. H. Clough.

Browning stands out sharply from all these in distinct, massive personality. While he does not largely occupy himself with the specific problems of his time—his concern being primarily the individual soul—he opposes to them an invincible faith in the immanent reality of God and spirit, a reliance on intuition rather than on reason, an optimism perhaps the most magnificent and rational in English poetry.

The spiritual a marked feature in recent English Literature.

Browning only joins in the protest against modern materialism of other great recent teachers. His protest less a specific arraignment of prosperous philistinism and labor-saving inventions — as that of Carlyle and Ruskin—than a quiet ignoring of many externals of modern life in his absorption in its spiritual issues. Coleridge, Wordsworth, Carlyle, Newman, and our Emerson, stand together witnessing each in his own

fashion to the paramount reality of spirit. Close connection between them and such German thinkers as Kant, Fichte and Schelling. Transcendentalism—the seeing God revealed in man and in nature. Browning, like Carlyle, Wordsworth, etc., a transcendentalist. (Compare Carlyle, *Heroes and Hero Worship*, Sartor Resartus; Coleridge, *Æolian Harp*; Wordsworth, *Lines on Revisiting Tintern Abbey*, etc.; and Browning, *Paracelsus*.)

Transcendentalism in Wordsworth and Browning.

Wordsworth's moments of intensest ecstasy, apt to come through Nature, rather than as with Browning, through music, love, etc. Wordsworth's *Lines on Revisiting Tintern Abbey*, *The Poet's Epitaph*, etc., compared with Browning's *Abt Vogler*, *Paracelsus*, etc. See abstract of Lecture III, *supra*.

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LECTURE VI.

BROWNING AND WORDSWORTH.

Wordsworth and Browning, two of the most spiritual poets in entire history of English Literature. Significance of this in its relation to modern thought. Similarities and differences of these two poets. Browning, poet of man and action; Wordsworth, of nature and meditation.

Their Respective Views of Immortality.

Wordsworth apt to dwell on the "shadowy recollections" of our infancy as "intimations of immortality;" Browning, on "august anticipations" and impatience of earthly limitations.

Ode on The Intimations of Immortality compared with Browning's view as before explained.

Their Respective Treatment of Emotion.

While several poems of Wordsworth's turn on the control of immoderate emotion (Ode to Duty, Laodameia), Browning inclined to lay stress on the spiritual loss entailed by stifling emotion through a sense of worldly prudence (*D's aliter visum*; or *Le Byron de nos Jours, Youth and Art*, etc.). So, too, in *The Flight of the Duchess*, the heroine forced into soulless conventionalities is led to see that "love is the only good in the world." The teaching of Wordsworth and Browning is thus complementary. Together their work presents an extraordinary body of spiritual teaching.

Browning's future place in English Literature.

REFERENCES.

Wordsworth's: Ode on the Intimations of Immortality. Lines on Revisiting Tintern Abbey. Laodameia and Ode to Duty. *Browning's*: *D's aliter visum*: or *Le Byron de nos Jours, Youth and Art*, and *The Flight of the Duchess*.

GENERAL REFERENCES AND SUGGESTIONS.

Students are advised to confine themselves to the references at the end of the lectures until completion of the course. The following suggestions are made for those who may afterwards wish to pursue the study of Browning further.

There are many "Introductions" to Browning, and the number is constantly increasing. Many of these are helpful, but the best introduction must be the direct study of Browning for one's self. In this study much depends upon the order in which the poems are read, and the understanding of the underlying motive which gives unity to Browning's work. The following poems are suggested as one convenient mode of access to Browning, to be read in the order here given: 1. Love poems—Evelyn Hope; By the Fireside; One Word More; The Last Ride Together; Love Among the Ruins. 2. Narrative—Martin Relph; Mulèykeh; Ivàn Ivànovitch; The Flight of the Duchess; 3. Art Poems—My Last Duchess; Andrea del Sarto; Fra' Lippo Lippi; Pictor Ignotus; A Toccato of Galluppi's; Master Hugues of Saxe-Gotha; Abt Vogler. 4. Dramas—Luria; The Blot in the 'Scutcheon; Paracelsus. 5. Immortality and Religion—Rabbi ben Ezra; Epistle of Karshish; Cleon; Prospice; Saul; A Death in the Desert; Christmas Eve and Easter Day; Rephan. 6. Longer Poems—The Ring and the Book.

General Reference.

"Tennyson and Browning," in Dowden's *Studies in Literature*; "Life of Browning," by William Sharp (Great Writers series); Alexander's "Introduction to the Poetry of Robert Browning," and Symond's "Introduction to the Study of Browning," are useful. Mrs. Orr's *Life* unreliable in its criticism and statements as to Browning's belief. Professor Corson's "Introduction" may

also be used, but his paraphrases of poems should be studiously avoided. Cook's Handbook of Browning valuable for reference ; and for advanced students publications of English Browning Society, and articles on Browning in *Poet-Lore* ; but all books about Browning should be carefully subordinated to independent study of the poet, and not made to take its place.

EXERCISES.

LECTURE I.

1. What are some of Browning's defects as an artist ? To what do you think these may be partly due ?
2. Give some instances of Browning's peculiarities of manner, with your own comments.
3. What are some of Browning's merits as a poet ? Where practicable, illustrate by references to particular poems or passages.

LECTURE II.

1. Explain Browning's Theory of Art.
2. Do you think Browning right in his theory as to the moral purpose in art ? What are some of the things which may be urged for and against it ?
3. Contrast the view of art and of beauty as revealed in art, in "Andrea del Sarto," and "The Bishop Orders his Tomb at St. Praxed's." Name some English poets who represent these opposing views.

LECTURE III.

1. What is Browning's view of the relative importance in human life of the intellect and the heart, of love and knowledge ?
2. Contrast Browning's Master Hugues of Saxe-Gotha and Andrea del Sarto, and explain relation to Browning's general theory of art.

3. Illustrate by examples the relation which Browning's treatment of the passion of love holds to his general view of life.

LECTURE IV.

1. How are Browning's art-poems—Andrea del Sarto, Abt Vogler, Old Pictures in Florence, etc.—related to his general teaching, or philosophy of life?

2. Analyze the argument in Cleon.

3. Cite parallel passages from Cleon, Rephan and Rabbi ben Ezra relating to the object of human life on earth.

LECTURE V.

1. What was the general state of English poetry when Browning began to write?

2. Name some characteristics of English poetry since 1830.

3. What is meant by Transcendentalism? Name some great Transcendentalists in Germany and England. Contrast the Transcendentalism of Wordsworth with that of Browning.

LECTURE VI.

1. Explain and contrast the attitude toward personal immortality in Wordsworth's "Ode on the Intimations of Immortality," and Browning's "Abt Vogler."

2. Give general estimate of Browning as a poet, and state your view of his ultimate place in English literature.

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GENERAL AUTHORITIES.

The works of Wordsworth, Shelley, Byron, Keats, Browning, Swinburne and Tennyson. Illustrations will be chosen most frequently from the works of Wordsworth, Shelley and Tennyson. (Macmillan editions in one volume.)

CRITICISMS.

WORDSWORTH: *Prefaces*.

SHELLEY: *Defence of Poetry* and *Prefaces to Revolt of Islam and Prometheus*.

COLERIDGE: *Biographia Literaria*, Chaps. XIV-XX.

DEQUINCEY: *The Lake Poets*.

HAZLITT: *Lectures on Poetry*.

English Men of Letters: Wordsworth, Shelley, Byron, Keats.

Wordsworthiana, edited by Wm. Knight.

MATTHEW ARNOLD: *Essays on Wordsworth, Keats and Byron*.

SWINBURNE: *Essays and Studies*.

LOWELL: *Essays on Wordsworth and Keats*.

BAGEHOT: *Literary Studies*.

J. C. SHAIRP: *Aspects of Poetry*.

SARRAZIN: *Renaissance de la Poesie Anglaise*.

JOHN MORLEY: *Essay on Wordsworth*.

AUBREY DE VERE: *Essays Chiefly on Poetry*.

CARR: *A New Study of Tennyson*, Cornhill, February and July, 1880.

VAN DYKE: *The Poetry of Tennyson*.

TOLLEMACHE: *Social Philosophy of Tennyson*. *Fortnightly*, XXI, p.

225.

Early Reviews, in Camelot Series.

LECTURE I.

INTRODUCTORY.

REFERENCES.

WORDSWORTH'S *Prefaces*.

SARRAZIN.

ARNOLD: *Essays in Criticism*. (Second Series.)

COLERIDGE: *Biographia Literaria*, Chaps. XVI and XVII.

POE: "*On the Poetic Principle*."

SHAIRP: Chap. I.

HAZLITT: Lectures I and VIII.

Critical chapters in Myer's *Wordsworth* (English Men of Letters).

Definitions of poetry. Not "Chatter about Harriet." A serious study. Should be studied both as "rhythmic creation of beauty" and as "criticism of life." Must be studied at least in one of these aspects. Narration of plot and analysis of character not the proper task of the lecturer on literature, except, perhaps, when he is dealing with the older drama and epic. General audiences more easily interested in thought than in form, but form more important than thought. Explanation and attenuation of this paradox. Plan of this course not the study of individual biography, but of certain typical aspects and sources of modern poetic feeling illustrated from the poems of Wordsworth, Shelley, Tennyson and their contemporaries. This nineteenth century English poetry superior to all other except the Greek and the Elizabethan. Its characteristic qualities: (1) Lofty conception of the poet as teacher and seer. (2) Return to nature in feeling imagery and diction. (Wordsworth's theory of poetic diction.) (3) Beauty and variety of rhythms. (4) "Intense and comprehensive" imagery. Substitution of striking far-fetched metaphor for the leisurely commonplace simile. Illustrations of these qualities and comparisons with estimable verse of other ages and literatures that lacks them.

LECTURE II.

THE POETIC INTERPRETATION OF NATURE.

REFERENCES.

WORDSWORTH (*Macmillan*), pp. 72-73, 83, 85, 94, 112, 113, 115, 178, 179, 248, 278, 294, 572.

SHELLEY: *The Sensitive Plant, The Cloud, Prometheus, Alastor, Adonais.*

KEATS: *The Odes.*

TENNYSON: *Mariana, Ode to Memory, Ænone, Gardener's Daughter, In Memoriam, passim.*

RUSKIN: *Modern Painters.*

Wordsworthiana, p. 181.

MORLEY'S *Introduction to Wordsworth*, LXIII.

SYMONDS: *Essays Speculative and Suggestive*, Vol. II, pp. 79-125.

SHAIRP: *The Poetic Interpretation of Nature.*

Johnson's view of the poet's attitude toward picturesque nature. The conventional eighteenth century treatment of nature, like the traditional poetic diction, a feeble imitation of originally good classical models. The return to nature in French and English literature and the origin of the specifically modern feeling for the picturesque. Rousseau, Bernadin de St. Pierre, Chateaubriand, Gray, Thomson, Cowper. Wordsworth, the Apostle of Nature in England. His influence on Coleridge, Scott, Keats and Shelley. Wordsworth's gospel of Nature. His poetic practice. Fidelity and "natural magic" of his descriptions. His manner compared with that of Shelley, of Keats, of Byron. Tennyson a disciple of Wordsworth and Keats. He is unable to accept and preach didactically Wordsworth's religion of nature as a benign power. His love and observation of nature find expression in minute idyllic description and exquisite felicity of epithet. His frequent use of the "pathetic fallacy." Ought the poet to take notes? Poetic practice of Wordsworth and of Tennyson. Comparison of their treatment of special aspects of natural beauty: Mountains, clouds, sunrise, birds, flowers, etc., etc.

LECTURE III.

TENNYSON AND MODERN SCIENCE.

REFERENCES.

The two *Locksley Halls*, *The Princess* and *In Memoriam*, *passim*.

Is science poetical? In what sense? Wordsworth's prophecy that the poet will make science poetical when science has grown familiar to men. Limitations of this principle. Distinction between using verse as a vehicle of scientific exposition, and using science as a source of inspiration and imagery for poetry. Illustrations from Lucretius' poem "On the Nature of Things." The questions to ask of modern poetry are: (1) Can scientific ideas inspire poetry? (2) Can special facts of science receive artistic poetical expression? Tennyson the chief source of illustrations. Scientific allusions of Wordsworth and Shelley slight and vague, those of Browning suggestive but inartistic. Tennyson's preoccupation with modern science revealed in two ways. (1) In his use of thoughts and images borrowed from the special sciences. (2) In his treatment of the idea of progress and the scientific millennium. Illustrations of these ideas.

LECTURE IV.

MODERN ENGLISH POETRY AND THE GREEK
AND LATIN CLASSICS.

REFERENCES.

WORDSWORTH: *Laodamia and Dion*.KEATS: *Odes and Hyperion*.SHELLEY: *Prometheus, Adonais, Hellas*.MYERS: *Wordsworth*.SWINBURNE: *Erechtheus and Atalanta in Calydon*.BROWNING: *Balaustion and Aristophanes' Apology*.TENNYSON: *Ænone, Morte d' Arthur, Ulysses, Tithonus, Experiments, Lucretius, To Virgil, Demeter, Tiresias*.STEDMAN: *Victorian Poets*.

Popular prejudice against learned and imitative poetry. How far justifiable. The world of past art and literature only second to world of nature and of human feeling for poet. "One great poet is a masterpiece of nature which another not only ought to study, but must study" (Shelley). Enormous influence in fact exercised on modern English poetry by Greek and Latin classics. Partly due to truer historic sense and broader scholarship of our time, partly to spiritual affinity between our great English poets and the Greeks. "We needs must love the highest when we see it." Difference in manner and tone between the modern poets' borrowings from the Greeks and Romans, and the imitations in our older literature. The manner of Chaucer, the Elizabethans, Milton, Pope. Brief sketch of the place held by the classics in the work of Wordsworth, Shelley, Byron and Keats. Browning, Swinburne and Tennyson, the three chief poets of the Victorian age, steeped in the classics. Their different manners of handling classical themes. Exquisite perfection of Tennyson's scholarship. His interpretation of Greek themes with "modern touches." *Ænone*, *Tithonus*, *Ulysses*, *Demeter*. His favorite Greek and Latin poets, Homer, Lucretius, Virgil, Catullus. Detailed analysis of one of Tennyson's classical idyls (*Tiresias* or *Lucretius*).

LECTURE V.

THE PHILOSOPHY AND MYSTICISM OF TENNYSON.

REFERENCES.

DAVIDSON : *Prolegomena to In Memoriam.*

MYERS : *Tennyson as Prophet, Nineteenth Century*, March, 1889.

The Spectator for February 2, 1889.

The Two Voices, The Vision of Sin, In Memoriam, Vastness, Despair, The Ancient Sage, The Higher Pantheism.

Limited sense in which it is allowable to speak of the philosophy of a poet. The "philosophy" of Browning and that of Tennyson hardly differ at all to the judgment of a "philosopher." Enormous difference in tone and feeling. Browning's dogmatic optimism. His restless psychological curiosity. His happy indifference or confidence in respect to ultimate philosophical questions. Tennyson tortured by ever-recurrent doubt issuing, through faith and mysticism, in hope. This state of mind pronounced unpoetical by Swinburne. Criticism has no use for a canon that makes "In Memoriam" less poetical than Young's "Night Thoughts" or "Songs Before Sunrise." Tennyson reflects the spirit of the age. He is haunted by two voices : the voice of traditional faith and hope, and the voice of negative philosophies, claiming to speak in the name of physical science. The dramatic opposition of these two voices pervades all his writings, from the "Vision of Sin" to the "Ancient Sage." Lucretius as the representative of the "barren voice." Intensity and plausibility with which Tennyson presents the case of the negative voice. His passionate repudiation of all palliating philosophies that affirm the value of a finite life. Necessity, therefore, of some refutation of the negative voice. His appeal, in default of formal demonstration, to faith, feeling and mysticism. Different forms of mysticism. Tennyson's mysticism in the last analysis not superstitious but idealistic, based on the idealism of modern science and the philosophy of Kant. Examination of some mystical passages. They are partially autobiographical. Final outcome of this appeal to mysticism. The "real world" a dream, a "vision of him that reigns," a revelation of the love that is at the heart of things. Love's philosophy. The apprehension of the infinity of love in finite experience builds up faith and hope in the infinite. We cease to commune with the barren voice and are able to rejoice indeed.

LECTURE VI.

THE IDEALS OF PROGRESS AND CONSERVATISM IN MODERN ENGLISH POETRY.

REFERENCES.

MILL'S *Essay on Coleridge*.

MORLEY'S *Burke*.

TOLLEMACHE: *Social Philosophy of Tennyson*. *Fortnightly*, XXI, p. 225.

SWINBURNE: *Prelude to Songs Before Sunrise and Essays in Criticism*, p. 127.

COLERIDGE'S *Political Poems*; Shelley's *Revolt of Islam* and *Peter Bell*.

BYRON'S and SOUTHEY'S *Vision of Judgment*.

The literary feud of Wordsworth, Southey and Coleridge *vs.* Byron, Shelley and Leigh Hunt, in the various biographies of these poets.

The conservative and liberal ideals in politics and morals. The nineteenth century poets as exponents of these ideals. (1) Period from 1789 to 1830—the antithesis mainly political. (2) 1840 to 1890, Tennyson the representative of Wordsworthian conservatism in its broadest form. His consequent relation to Swinburne, Browning and other contemporaries.

The lecturer will be pleased to receive essays or exercises on any of the following topics, or on any allied subjects that may suggest themselves to the student. Conformity with the views expressed in the lectures is, of course, not expected. Definite thought and pertinent quotations from one or more of the poets studied are the most desirable qualities.

EXERCISES.

I. Is poetry at bottom criticism of life (c.f. Symond's "Essays, Speculative and Suggestive," Vol. II, p. 150)? Is the idea of the poet as a teacher an emotional illusion or a sober reality? Are the distinctive excellences of modern English poetry found in Byron? Examine Wordsworth's theory of poetic diction with reference either (1) to his own practice, or (2) to the style of Keats or Tennyson.

II. Origin of the modern feeling for nature. Is it in any sense true that one impulse from a vernal wood may teach us more of moral evil and of good than all the sages can? How did Shelley conceive the difference between his own interpretation of nature and that of Wordsworth (c.f. Peter Bell, Witch of Atlas and Symonds, Vol. II, p. 117)? Compare any two or three modern poets in respect either of their conception of nature as a whole, or of their treatment of some special aspect of natural beauty, as mountains, sunsets, birds, flowers, ocean.

III. Is a "poetical" scientific fact necessarily suitable for poetry? Analyze some examples of pleasing and displeasing use of scientific imagery in modern poetry. Collect and defend some of Browning's allusions to recent scientific discoveries. Has evolution yet found its way into poetry?

IV. Is the world of past art and literature as legitimate a source of poetic imagery and allusion as the world of external nature, or the world of human passion? Does the fact that it is an imitation detract from the inherent

value of a poem (1) if the fact is known to the reader; (2) if it is unknown? How has Greek mythology been treated in different periods of English poetry? From what ancient authors did the Queen Anne writers chiefly draw their inspiration? Discuss Browning's theory of translation. Should the poet in a classical study dissimulate technicalities and obscure allusions with Tennyson, or force them upon the reader's notice with Browning? Should he strive to be purely classical with Landor, or insert "modern touches" with Tennyson?

V. Is philosophy a fit subject for poetry? Is it true that the general effect of Tennyson's poetry is pessimistic, that of Browning's optimistic? Examine Prof. Davidson's interpretation of *In Memoriam*. Discuss the relation of Tennyson and Browning to Christianity; to contemporary philosophies of negation. Collect some of the allusions of either or both to technical psychological or metaphysical questions.

VI. Distinguish the lower and higher types of conservatism and radicalism. Show how the tendency to confound higher and lower types has made liberals distrustful of Tennyson and Wordsworth, and prejudiced conservatives against Byron and Shelley. Compare, or study singly, Tennyson and Swinburne as modern exponents of these two ideals. Is it possible to class Browning in this respect?

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THE MODERN VIEW OF ENERGY.

LECTURE I.

THE ENERGY OF POSITION AND OF MOTION.

The energy of a system of bodies is measured by the capacity of the system to do work.

Work is defined as "the exertion of pressure through space" (*Webster*). In physics, since pressure is produced by force, work is considered to be done when force acts through distance.

In proportion as a system does work, its energy is expended. In proportion as work is done upon it, its energy is increased.

Thus the water in a mill-pond possesses energy, since by falling upon a water-wheel it may do work in driving the machinery of a mill. Since its energy is expended in this process, this energy must have been due to its initial position of advantage; *i. e.*, to its height. If the water be pumped back again, work is done upon the water in raising it and its energy is said to be increased. Not only is the water itself stored in the mill-pond, but energy is stored there as well.

In nature this process of raising water is carried on on an enormous scale by the sun. It is estimated that the sun raises 2,000 tons of water $3\frac{1}{2}$ miles high every minute.

Hence, whenever force acts through distance, work is done and energy is stored up. Thus, for example, work is done:

1. When matter is raised against gravity; as in winding up the weight of a clock or in pumping water.

2. When elastic bodies are deformed; as in compressing air, or in drawing a cross-bow.

3. When magnetic, electrical, or chemical attraction is overcome; as when two unlike magnetic poles are drawn apart, two oppositely electrified bodies are separated, or a chemical compound is decomposed into its elements.

Result of the action of force two-fold. It may give to the system an increased energy not only in virtue of the advantage of position which it confers, but also in virtue of the fact that it may put it in motion. Force acting through distance may do work, then, by putting a body in motion, and the moving body will acquire energy in proportion to the work which has been done upon it.

Hence, energy appears in two forms: In the first form the energy of a system is due to the *position* of its parts with reference to each other, under the influence of mutual attraction. This form of energy has been called Potential Energy by Rankine.

In the second form, the energy of a system is due to the *motion* of its several parts. This form of energy has been called Kinetic Energy by Thomson.

Examples.—Energy of raised water, of coal, of fuels and of food, is potential energy. The energy of heat, of light and of electrical currents is kinetic energy.

Potential energy, the stored energy of sunlight. It is the water raised by the sun which spins cotton, the energy from the sun stored in coal which drives the train.

Energy bought and sold, in the same way as matter. Commercial aspects of the question.

REFERENCES.

- Conservation of Energy*, Balfour Stewart.
Recent Advances in Physical Science, P. G. Tait.
Matter and Motion, J. C. Maxwell.
Units and Physical Constants, J. D. Everett.

LECTURE II.

THE ENERGY OF VIBRATION. SOUND.

Nature of vibratory or oscillatory motion. Illustrated by a swinging pendulum. At the highest point its position of advantage is greatest and its potential energy a maximum. As it falls, its height diminishes, but its motion increases, its potential energy gradually becoming converted into kinetic energy. At its lowest point its potential energy is zero, its kinetic energy a maximum, and equal in value to the potential energy originally.

Elastic bodies used for the production of sounds. The law of vibration of elastic bodies first stated by Hooke, 1658: The force of restitution is proportional to the displacement. It can be shown that when a body vibrates according to this law, the time of vibration is independent of the extent or amplitude of the vibration. The vibrations are said to be isochronous.

All sounding bodies are in vibration. If a sounding tuning-fork be touched with a rod, a rattling noise will be heard, and the fork will be brought rapidly to rest.

Moreover the air, when transmitting sound, is in vibration, as may be shown by placing a membrane in it, strewed with sand.

The vibrations of sounding bodies are isochronous. The number of vibrations remains the same, however great the extent of the vibration. No change of the note is produced as the sound dies away. Hence the vibrations of sound follow Hooke's law. They are called simple harmonic vibrations.

Hence sound originates in the vibrations of elastic media, is transferred from point to point by means of the vibrations of such media, and is received and recognized by such vibrations.

The vibrations of a tuning-fork, or other sounding body, produce waves in the air, which waves are propa-

gated outward with a speed depending only on the elasticity of the air or other surrounding medium. These waves may be longer or shorter, higher or lower, simple or complex. If the wave-length be short, there are more of them in the same space; and the vibration-frequency is greater. This vibration-frequency is called pitch; and the difference in pitch, between two notes, is called the interval between them. Evidently the pitch varies inversely as the wave-length.

The loudness of the sound depends on the extent of the vibration of the sounding body, *i. e.*, upon its amplitude. The quality depends upon the complexity of the note. The note of a tuning-fork is simple, and has only one wave-length. That of a reed-pipe is complex, and is resolvable into waves of different lengths.

Speed of sound measured directly, as in the experiments of Moll and von Beck, in 1823; or indirectly, by measuring the pitch and wave-length, since the speed of sound is proportional to the distance traversed during one vibration of the sounding body multiplied by the number of such vibrations. The result is 1,093 feet, or 333 meters per second in air at zero C.

The vibration-frequency measured by means of the syren, and the wave-length measured by means of resonance. Pitch of an organ-pipe and wave-length of the note of a tuning-fork thus measured. Then the speed of sound calculated.

Range of audibility of sounds variable. The lowest note which can be heard, about 16 complete vibrations, and the highest 40,000 complete vibrations. Only a range from 32 to 4,000 such vibrations used in music. The lowest pitch for a bass voice corresponds to about 65, and the highest for a soprano voice to about 1,044 vibrations.

Amplitude of minimum audible sound, 1 millionth inch (Rayleigh). Analysis of composite sounds by resonators (Helmholtz).

Sound a wave-motion, since two sounds may be made

to destroy each other. Interference of sounds shown. Beats.

Evidence that sound is the energy of vibration.

REFERENCES.

Elementary Lessons on Sound, W. H. Stone.

The Theory of Sound, Pietro Blaserna.

Sound and Music, Sedley Taylor.

LECTURE III.

KINETIC THEORY OF MATTER.

All forms of matter discontinuous and composed of particles. First shown by Cauchy to be essential to the explanation of certain phenomena of light.

"The theory that bodies apparently continuous are so in reality is, in its extreme form, a theory incapable of development. To explain the properties of any substance by this theory is impossible." (Maxwell.)

When matter is subdivided, the final particle reached in the subdivision is called a molecule; so that a molecule is the smallest particle of any substance which can exhibit the properties characteristic of that substance.

Molecules very small. According to Tait, a drop of water contains 10^{26} molecules; and Crookes says that to count the number of molecules in a pin's head would require 250,000 years if the rate of counting were 10^7 per second.

Again, it is the view of modern science that these molecules are in motion, and that the speed of this motion is very great. Hydrogen molecules move at the rate of seventy miles a minute.

Controversy between the material and the kinetic theories of heat. Experiments of Count Rumford in 1798, and of Sir Humphrey Davy in 1812. Conclusions reached.

Heat the energy of moving molecules, *i. e.*, molecular kinetic energy.

Character of the motion supposed different in the different states of matter. In gases the motion is assumed to take place in straight lines. In liquids and solids the molecules are assumed to move in closed orbits.

The pressure exerted by a gas on the walls of the vessel in which it is contained is, therefore, due to the impact of the molecules upon them. Increase the number of these molecules within the vessel, or increase the speed of their motion by heating them, and the pressure is augmented.

Proof of this motion found in diffusion. Experiment to show the diffusion of coal gas. Graham's law of diffusion. The speed of diffusion of any gas is inversely proportional to the square root of its density. Proof of the relative speed of oxygen and hydrogen gases.

Maxwell's investigation on the absolute speed of molecules in gases. In the case of hydrogen, he calculates the mass of a molecule to be 6.5×10^{-19} of a grain; the diameter to be 2.3×10^{-8} inch; the number in one cubic inch to be 3.1×10^{19} ; the speed, 6,190 feet per second; the number of collisions in one second, 17,750, and the mean distance described by a molecule between collisions, or its mean free path, $\frac{1}{88000}$ of an inch.

Evidence of this kinetic energy in Crookes's radiometer. Originally supposed to show impact of light waves. Calculated that light of candle exerted a pressure of $\frac{1}{8}$ grain on each square foot. Fallacy in reasoning; pressure shown to be due to impact of molecules.

Experiments with radiometer proving action on its vanes to be entirely within the globe.

All gaseous phenomena due to the kinetic energy of their molecules.

REFERENCES.

- Constitution of Matter*, Sir Wm. Thomson.
Properties of Matter, P. G. Tait.
 Article "Atom" in *Encyclopædia Britannica*, J. C. Maxwell.

LECTURE IV.

MOLECULAR KINETIC ENERGY. HEAT.

Production of heat takes place whenever mass-motion is arrested. Either suddenly, by impact, as when a cannon-ball strikes its target, or gradually, by friction, as when a moving train is brought to rest by means of its brakes.

"The source of the heat generated by friction in these experiments appeared evidently to be *inexhaustible*. It is hardly necessary to add that anything which any *insulated* body or system of bodies can continue to furnish *without limitation* cannot possibly be a *material substance*" (Count Rumford).

Terrestrial sources of heat, mechanical, chemical and electrical. In the first, the kinetic energy of the moving mass is transformed into the kinetic energy of the moving molecules.

Interesting question: how many units of the former kind of energy are equivalent to one unit of the latter kind? Joule's investigations, 1840-1849. Methods of experiment. Result—that 772 foot-pounds of mechanical energy is the equivalent of one unit of heat; *i. e.*, one pound of water heated from 50° to 51° F. This value called the mechanical equivalent of heat.

If heat is molecular motion the amount of heat in a body depends not only upon the speed of the motion, but also on the number of the moving molecules. The speed of the motion has to do with its temperature; and the number of the molecules with its mass. Hence, the heat-change, when any body is heated or cooled, is the joint product of its mass, its temperature-change and its specific heat.

The second source of heat is chemical, the process of developing it being called combustion. In those substances which are used for fuel and as illuminants, energy has been

stored up in the potential form, directly or indirectly, by the action of sunlight. Coal on the average contains ten million foot-pounds of energy in each pound; and spermaceti contains 14.4 million foot-pounds.

This potential energy exists in virtue of the attraction which exists between the carbon and hydrogen of the coal and the oxygen of the air. The magnitude of this attraction is shown by the enormous amount of energy developed in the form of heat when the oxygen atoms collide with the carbon and hydrogen atoms, notwithstanding the minuteness of the space through which they fall.

But the source of all energy upon the earth's surface is the sun. The energy radiated from the sun is stored up in various forms, performs its varied functions and then is radiated again into space. Temperature of the sun considered; the amount of his radiation and the source of his energy. Three fourths the solar radiation is invisible.

The various effects of heat which we observe are due to transference or to transformation of heat-energy. All bodies, for example, expand by heat. Work is done in separating the molecules from each other. The kinetic energy of the absorbed heat appears as the potential energy of the separated molecules. The same true of change of state.

The re-conversion of molecular kinetic energy into mass kinetic energy not perfect. Hence the theoretically low efficiency of heat engines.

REFERENCES.

Elementary Treatise on Heat, Balfour Stewart.

Theory of Heat, J. C. Maxwell.

Heat as a Mode of Motion, John Tyndall.

LECTURE V.

ÆTHER. VIBRATION-LIGHT.

The æther, a substance assumed to exist because of its necessity in explaining the phenomena of light and electricity. It possesses inertia and elasticity, and, therefore, is matter. Its density, according to Maxwell, is 9.36×10^{-19} , and its elasticity is a thousand-millionth that of steel.

"A man ordinarily inhales at a breath a bulk of air about the bulk of a large apple. If the æther of space were substituted for the air, to get the same amount of matter into his lungs he would have to take in at each inspiration a bulk of it equivalent to a sphere somewhere between 15 and 117 miles in diameter." (Hall & Harkness.)

Light is a periodic disturbance in the æther, ordinarily called a wave-motion. Periodicity is shown by the phenomena of interference. The phenomenon of polarization shows that a beam of light has different properties on different sides; and hence, that it is a transverse wave motion and not a longitudinal one, like sound.

Ptolemy and Euclid considered light to consist of visual rays issuing from the eye. Newton supposed light particles to be emitted by the luminous body. Huyghens is generally considered the author of the undulatory theory.

Impossibility of the material theory. If a light-particle had a mass of only one-thousandth of a grain, its impact, at the speed of 185,000 miles a second, would exceed a million foot-tons. Crookes first supposed that the pressure in his radiometer resulted from light-radiation; and he calculated that the pressure of sunlight on the earth's surface would be about 57 tons per square mile. Subsequent change of view.

Sunlight and light from terrestrial sources highly composite in character. Contains an indefinite number of

waves, varying in length from 14μ to 0.18μ . Of this range the visible portion called light extends from 0.81μ to 0.36μ .

The amount of light received from the sun has been estimated as equal to 60,000 times that of a standard candle at the distance of one meter. Hence it follows that the light emitted by the sun itself is equal to that of $1,575 \times 10^{24}$ candles.—(Young.)

Speed of waves in the æther independent of their length. In ordinary matter, however, the speed of propagation is greater for long waves than for short waves. Hence, in traversing such matter the waves are separated.

Phenomenon called *dispersion*. Prism disperses compound light into its constituent colors. Image produced called a spectrum.

Color corresponds to wave-length. Red light has the longest waves, and violet light the shortest.

Colors of objects due to the light they reflect, in the case of opaque objects, and to the light they transmit in the case of transparent ones. Object, when illuminated by monochromatic light, has no color but that of the light.

Color may be subjective only. Color-blindness. Primary colors considered from the standpoint of the physicist and the artist.

REFERENCES.

The Nature of Light, G. G. Stokes.

Light, P. G. Tait.

The Theory of Light, Thomas Preston.

LECTURE VI.

ÆTHER-STRESS AND FLOW. ELECTRICITY.

Electrification the production of æther-stress. The energy of a raised weight may be expended in rotating a glass disk and so producing electrification.

Whenever two dissimilar substances are brought in

contact, one of them becomes positively electrified, the **other** negatively and to the same extent.

In accordance with the law of electric attraction, these **substances** attract each other; so that to separate them **requires** the expenditure of energy. This energy appears as **the energy** of electrical separation, the potential energy of electric stress. Probable that in all cases potential energy **resides** in the intervening medium.

To separate two charged bodies, the energy expended **is** proportional (1) to the amount of electrification upon **them**, and (2) to the distance to which they are separated. **The** potential at a point unit is measured by the amount of work required to carry a charge to an infinite distance from the point in question.

The work done in raising a charge to a given potential **is** the product of the charge by the potential. In charging a jar, since at the first the potential is zero, the work done **is** the mean potential—*i. e.*, half the final potential—multiplied by the charge.

Discharge of condenser oscillatory. Character of the **spark**. Similar in the case of lightning.

Oscillating discharge produces electric waves in the **æther**. Hertz's experiments. These electric waves have the same speed as that of light.

To move a conducting wire through a magnetic field **requires** the expenditure of work, which work appears as the **energy** of an electric current in the conductor.

Energy of current made to do work of various kinds. **May** be converted into heat-energy, light-energy or mechanical energy. It may be used to effect chemical separation, and so store energy for future use. Storage batteries may thus be produced.

Transformations of energy constitute the ordinary phenomena of nature. Kinetic energy from the sun in the form of **æther** vibration, rests upon our earth in its course

outward, is here absorbed by the growing plant, the ocean water, the solid earth, and transformed into other forms, utilizable for the various needs of man. But the sum total of the energy of the universe is constant, and no energy can be brought into existence or put out of existence by any power of man. The great law of the conservation of energy is absolute.

REFERENCES.

Modern Views of Electricity, O. J. Lodge.
Electricity and Magnetism, Guillemin.
Practical Electricity, W. E. Ayrton.

EXERCISES.

I.

1. Mention several additional examples illustrating the action of force through distance, and the consequent production of work. If possible, make these examples numerical, assuming the proper data.

2. If the length of the step is two feet, and the body is raised an inch each step, how much work is done in walking a mile? (Each person to use his own weight in the calculation.)

3. Compare this work with that done in going a mile on a bicycle weighing 100 pounds, the resistance due to friction being one per cent. of the weight.

4. Calculate the energy of an ounce rifle-bullet moving 1,000 feet a second.

5. A railway train whose mass is 50 tons is moving 25 miles an hour. What force would bring it to rest in a minute?

II.

1. In what way may the speed with which the bob of a pendulum passes its middle point be calculated?

2. Give several examples of the production of sounds by vibrating bodies, and explain the relation of elasticity to the vibration.

3. Explain the relation between the vibration—frequency of a sound—and its wave-length.

4. Upon what principles is the indirect method of measuring the speed of sound based?

5. Describe the phenomenon of sound interference, and show how it proves the vibration theory of sound.

III.

1. Upon what grounds is it assumed that matter is not indefinitely divisible?

2. Describe one method of reasoning by which the size of molecules can be approximately inferred.

3. Give a sketch of the experiments which overthrew the material theory of heat.

4. Account by the theory of gaseous impact for the pressure on the walls of the containing vessel.

5. How does the phenomenon of diffusion fix the relative speed of the molecules of gases?

IV.

1. Illustrate by several examples the production of heat by arrested motion.

2. How many units of heat would be developed when the rifle-ball, mentioned in Exercise I, strikes the target?

3. Explain the production of heat when a combustible substance is burned.

4. What amount of coal must be burned to furnish the energy necessary to stop the above rifle-bullet?

5. Explain the various ways in which work may be done by or in a body when that body is heated.

V.

1. Why is it necessary to assume the existence of an æther between the earth and the sun?

2. How is the character of a light-wave established by the phenomena of interference and polarization?

3. Give proofs that light is energy of vibration, and that the vibrations are æther vibrations.

4. Calculate the horse-power furnished daily by the sun to each square mile of the earth's surface.

5. Describe the phenomenon of dispersion and discuss the theory of primary colors.

VI.

1. What is the source of the potential energy in a system of two bodies oppositely charged by contact?

2. How much work is done, when, on putting 100 units of electrical quantity into a condenser, its potential is thereby raised to 50 units?

3. Describe the character of the spark discharge, and explain the connection it establishes between electricity and light.

4. Define the energy of an electric current, and state how this energy is measured.

5. Calculate the heat which is electrically producible by the solution of a pound of zinc in sulphuric acid.

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LECTURE I.

The Revolution in America, 1776; its consequences throughout the world. In France, the great Revolution, 1789. In Ireland, Rebellion of 1798 (Irish representation in London Parliament in 1801, and Catholic Emancipation in 1829). In England, end of king's meddling in politics; overthrow of aristocratic Whig power. In Scotland, widened views of religion; increased freedom of thought. Germany. Italy. Thus there was a world-wide wave of political, social and religious revolution following on the political Independence of America; and the agitation called forth a great company of famous poets in Britain.

ROBERT BURNS (1759-1796).

Two kinds of great men: (1) Those who become great by force of will-power, aided by circumstances, such as Carlyle in literature, Beaconsfield in politics, Wesley in church organization, Wagner in music, Wellington in war. Characteristics of such men; how they may be explained and followed; their uses. (2) Men who are born great, real geniuses, who occur seldom and unannounced; men who make circumstances and epochs—such as Napoleon I, Mozart, Raphael, Lincoln, Shakspeare, Burns.

First edition of Burns' poems (Kilmarnock, 1786). Burns a typical lyric poet; secret of his popularity was his wide sympathy for man and all nature. "The Daisy," "The Mouse," "The Wounded Hare;" the winds, streams, rocks were his "brethren." Burns the first Darwinist, the linnet his "feathered brother in the bush."

His parents. Hard life on father's farm; first poem to "Handsome Nell," when 15; his impressionable nature. His first visit to outside world, at Irvine, to learn flaxdressing; bad companions, lasting effects; great weakness and errors, great genius and repentance.

His 118-acre farm at Mossgiel; his poems applauded and censured by two church parties—"Auld Lights" and "New Lights"; sarcastic poems, *Holy Willie's Prayer*, *The Ordination*, *The Holy Fair*; wholesome effect of these "blasphemous" pieces.

The Cotter's Saturday Night, a glory to Scotland, a picture of Burns' father and home. His love for Scotland; reverence for the thistle.

Lyric poetry (Burns') compared to dramatic (Shakspeare's).

Jean Armour; her father rejects Burns' suit; he takes passage to Jamaica; publishes his poems; tremendous success. Armour permits Jean's marriage.

Mrs. Dunlap, constant friend of Burns. His second visit to outside world—Edinburgh. His triumphal procession; aristocratic reception. Editor Makenzie in "Lounger" and Professor Dugald Stewart praise him above all Scottish poets, and place him in the "Temple of Fame." Second edition of poems a great success.

Character of his romantic poetry compared with Thomson's "Seasons." Burns always has a human background. His descriptions of Nature, *The Vision*. Second winter in Edinburgh, the crisis of his life—a cold reception. His mortification, proud despondency—letter to Mrs. Dunlap; love-letters to Edinburgh dames; his justification. A three-volume novel in three lines. Burns' poems all short—the reason.

Appointed exciseman at £70 a year. His letter on his office to Lady Glencairn. Life at Ellisland and Dumfries. Songs written for Mr. Thompson in the "Museum." Burns compared to the great lyrists in literature, the Latin Horace, the Greek Sappho, the French De Beranger, the German Walter von der Vogelweide.

His sympathy with Nature; Autumn the most prolific season of his muse. Poems: *To Mary in Heaven* ("Thou lingering star with lessening ray," etc.). *Tam O' Shanter*; its origin. Burns' ideal of life ("To make a happy fireside clime for weans and wife," etc.).

Burns the hero of the common people. Sympathy with the French Revolution; he sends France four cannon. His famous toasts ("To the last verse of the last chapter of the last Book of Kings!") To "Geo. Washington," not Wm. Pitt! Cautioned ("to work, not to think or write!")

Burns started revolution in English thought; other poets began where he left off. His sudden death; universal regret and misgivings. What might have been.

QUESTIONS.

(To be answered very briefly.)

1. What constitutes Burns' wide hold on human sympathy?
2. What liberal effects had Burns' life and writing on religion in Scotland?
3. Which of Burns' poems do you like best? State your reasons.
4. To what class of poetry (epic, lyric, didactic, dramatic) do Burns' poems belong?

LECTURE II.

GEORGE GORDON, LORD BYRON (1788-1824).

His Norse and Scottish ancestry; ill-training; school and college (Harrow and Trinity, Cambridge); Newstead Abbey given by Henry VIII to Sir J. Byron, 1540. Byron's first poems, *Hours of Idleness*, 1807; their character; harsh criticism in *Edinburgh Review*; his reply in *English Bards and Scotch Reviewers*. Two years' tour in East. Return, and publication of *Childe Harold's Pilgrimage* (Cantos 1, 2) in 1813; its immense popularity, seven editions in four weeks. "The new poet!" Interest greater in poet than in poem.

Rapid production of poems. The *Waltz*, the *Giaour*. "He who hath bent him o'er the dead," etc.

The Bride of Abydos (1813), ("Know ye the land," etc.). *The Corsair*, *Lara*, *Hebrew Melodies*, *Siege of Corinth*, *Parisina*, written in one year.

"The wild gazelle on Juda's hills," etc.

"The Assyrian came down like a wolf on the fold," etc.

These works drove all other poets out of the field. 14,000 copies of *Corsair* sold in one day; *Lara* brought £700. Subjective character of all these poems; the hero is always a "Byron."

Byron a product of the revolutionary age. His contempt for the prejudices and narrow-mindedness of his countrymen. His praise and censure of Napoleon.

Byron's fascination for ladies—his opinion of them ("give a woman a looking-glass and burnt almonds and she will be content!") Different opinion of greatest poets (Shakspeare, Sophocles, Spenser.) Byron's women all Orientals.

His marriage to Miss Millbank, in January, 1815. Their separation, child Ada. Public indignation at the poet. Newstead Abbey sold for £90,000. Society and the press hound him out of England. His half-sister, Mrs. Leigh. He lands in Belgium. "Waterloo." He is pursued by reporters and tourists. Writes *Manfred*, in the Alps. Address to Mount Blanc. The *Prisoner of Chillon*. His sojourn in Italy: Verona, Venice, Florence, Rome. The Countess Guiccioli. Life in Venice, where he writes the fourth Canto (last) of *Childe Harold*. Ad-

dress to Venice ("I stood in Venice on the bridge of sighs"), and address to ocean ("Roll on, thou deep and dark blue ocean," etc.).

Poem of *Mazeppa*, a Cossack spy.

Byron's philosophy contained in his terrible mystery of *Cain*—its questionings of man and God, life and death, heaven and hell. Use and abuse of such considerations. They invade the kingdom of chaos, but the explorers mostly perish in their ventures.

The free thought in *Cain* the forerunner of the free spirit of investigation and criticism of nineteenth century. Free Thought, if suppressed in one country or age, will out in another; best way to let it speak out, and meet it openly. The way to Truth always zig-zag, and sometimes retrograde. Strong assaults against religion have brought forth stronger answers. Religion purer and more practical to-day than ever before.

Lessing's beautiful simile of the kingdom of heaven.

Insurrection in Greece, in 1822, against the tyrant Turks. English funds aid the Greeks. Byron appointed to command them. He equips a fleet, at his expense, against the Turks. His enthusiastic reception. He had lent his pen, name, time, fortune and his life for their deliverance. Greeks propose him as their first king. His death by fever on the swampy moors of Missolonghi, April 24, 1824.

QUESTIONS.

1. Which are the best cantos of *Childe Harold*? State your reasons.
2. Show the effects of ancestry on Byron's writings and character.
3. Which of his poems did Byron call "Dramas?"
4. To what class (epic, lyric, didactic, or dramatic) do the most of his poems belong?

LECTURE III.

THOMAS MOORE (1779-1852).

Son of a Dublin shopkeeper; was a precocious youth; published verses at 13. Dublin University then closed to Catholics, but Revolution in America and France liberalized English government, and opened Dublin University. Moore the first Catholic student. His translations from the Greek of *Anacreon*; satires on George III and English government; Moore aided Robert Emmet, the Irish Revolutionary leader, and wrote in nationalist "Press;" examined as a conspirator, acquitted.

Moore removes to London at 19, meets Burke and becomes pet of best society; is appointed registrar to Bermuda, 1803. Poems on Bermuda, the *Calabash Tree*; he visits United States, Canada, and President Jefferson. Poems on American themes. The *Lake of the Dismal Swamp* (in Norfolk, Va.), *Canadian Boat Song* (on the St. Lawrence).

Return to England, his political poems *Corruption*, *Intolerance*, *The Sceptic*, *The Two-penny Post-bag*, *Trifles*, *Little Man and Little Soul*.

Irish Melodies, written to old airs lingering among Irish peasants from early times.

Original connection between poetry and music. The true poet a true musician, like Homer, Milton, Shelley. The early poets sang their own poems. Comparison of poetry and music—poetry the body, music the soul. The poet's method and mission. Shelley's remarks on poetry—"Poetry is as the odor and color of the rose to the texture of the elements which compose it; what were our consolations on this side the grave, and what our aspirations beyond it, if poetry had not ascended to bring light and fire from those eternal regions where the owl-winged faculty of calculation dare not ever soar?"

Effects of poetry. How the people of Antioch saved their lives from Theodosius. Moore sought pity for the Irish by writing the *Melodies*. The old Irish harpers. *Origin of the Irish Harp*, *Meeting of the Waters*, *The Shamrock*, *The Harp that Once*.

Lalla Rookh, its composition and preparation; four stories or divisions of the work:

(1) *The Veiled Prophet of Khorassan*. History of the sanctimonious pretender Mokanna. Azim and Zelica.

(2) *Paradise and the Peri*. How a Peri found re-entrance into heaven.

(3) *The Fire-Worshippers*. History of Persian Conquest. Loves of Hinda and Hafed.

(4) *The Sultana Nourmahal and the Emperor of Cashmere*. Story of their love quarrels and reconciliation.

These stories, told in rhyme, interspersed with prose descriptions. Lalla Rookh, an Indian Princess. Her description. Her journey to her betrothed at Cashmere. The stories told to enliven her journey by the young poet Feramorz. Plot of "Lalla Rookh." Its poetic merits; financial success.

Moore's liability for his deputy in Bermuda; his bankruptcy and flight to France. Settlement for £1,000. His biography of Lord Byron. Family bereavements. Declining poetic fame. No philosophy in Moore's poetry; brilliant, musical, superficial. His rank as a poet.

QUESTIONS.

1. Give the main outline of Moore's great poem. Which division do you like best?

2. State Moore's object in writing his *Irish Melodies*. Give the titles of those you like best.

3. In what era were poets also musicians? Can you draw any comparison between poetry and music?

4. Why are not all of Moore's poems of a permanent interest to mankind?

LECTURE IV.

WALTER SCOTT (1779-1832).

(The *Poet*.)

"The Scottish Homer"—of the border frays. Difference between "poet" and "historian"—the historian an impartial judge of known facts; the poet a sympathetic participator in the events, he *feels* as well as understands. Scott an historical, narrative poet; a painter of action, not a revealer of character.

Educated for the bar; his romantic tendency. Influence of German literature (Bürger's *Ballad*, Goethe's *Goetz*). Sheriff of Selkirk.

Border Minstrelsy; *The Lay of the Last Minstrel*; its great success. Melrose Abbey (Canto II). Scott's patriotism ("Breathes there a man," etc.). Contrast to Byron's. Scott an old "Tory." The effect of mountains on patriotism. (See Scotland, Switzerland, Piedmont, Greece.)

Marmion, descriptive passages. Battle of Flodden (1513) and death of James IV. Imitations of Shakspeare's lyrics. Well of Sybel Grey. Woman's Mission. Scott's sympathy for the "villain" of the play.

Scott an anti-revolutionist. Captain of Volunteers; His love for "the good old times." His romantic marriage to Miss Charpentier.

The Lady of the Lake, high class poetry. Descriptive extracts—The Island Hall, "Soldier, rest, thy warfare o'er." The Battle of Beal (Canto VI).

Scott, "our most pictorial bard," a boy's poet—void of philosophy. His short lines on old Saxon model.

The Lord of the Isles. What poets do for their country. Scott and Burns "civilized," popularized Scotland, as Homer and the Dramatists did Greece. The "Poet" records and preserves the nation's achievements, marks its mental elevation, purifies its language and unifies its citizens, gives light and inspiration to its statesmen, preachers, judges, and reflects the wisdom and experience of the ages. Hence the necessity of studying the poets and the English language.

Scott quits poetry on Byron's rise, and turns to prose

romances—Waverley. He buys Abbotsford 1812. Costly ornamentation. Scott a county squire, his country life and hospitality. His dogs, horses, servants. His outdoor life reflected in his poetry. His defence of George IV. Scott George's "First Knight."

His printing speculations, the Ballantynes, kindness to authors; Washington Irving. Scott's bankruptcy £117,000. His new energy to "write off" the debt. His novels, their high character and success, overworks himself. His trip to Italy. Return and death.

Characteristics of Scott's poetry—pictorial, romantic, objective—cold compared with Byron, Burns, Shelley. Similarity between Scott's poems and his prose romances. Prose romance his proper vein.

QUESTIONS.

1. Show some of the uses of a great poet to his country.
2. State some of the main characteristics of Scott's poetry.
3. Why did Scott give up writing poems and take to prose romances?
4. What early preparation had Scott for his romantic border poems?

LECTURE V.

PERCY BYSSHE SHELLEY (1792-1822.)

"Wrote for posterity, and is waiting for his readers"—out of harmony with present dispensation. Son of Sir Timothy Shelley. Fond of science and ghost tales. His high moral sense. His great love of liberty and toleration. His hard queries to learned theologians. *Necessity of Atheism*. Expulsion from Oxford.

Life in London. Harriet Westbrook. Self-confidence. His view of history, "a record-book of crimes." Society in France before the Revolution. His belief in the perfectibility of man, and equality of men and women.

Marriage with Harriet. *Queen Mab*; bold ideas, but weak in expression. His absent-mindedness, whims. Mary Godwin, his love and second marriage. Crosses in open boat to France.

Alastor, a glorious youth (Shelley) searching the world for his ideal love—in vain. Shelley's high soul, his isolation. Harriet's desertion and death. Tragedy in Shelley's life and surroundings. "Compensation."

Laon and Cythna, or Revolt of Islam (in twelve Cantos with Spenserian stanzas) his first great poem.

Laon (Shelley) incites a nation to expel its kings and assert its freedom, but is finally defeated. Love the only law of Shelley's new world. Cythna, the realization of Shelley's boy-dream in "Alastor." New dignity of woman. Shelley's grand apostrophe to America:

"Where is a mighty people in its youth,
Which as the sands shall yet one day become,
The multitudinous earth shall sleep beneath its shade."

Fate of Laon and of Cythna, their death and ascension, where "they join the good and great of earth within the free and happy dwellings of the dead"—

"The mighty veil was rent, the world grew dim and pale;
All light in heaven and earth beside their love did fail."

The sublimity of Shelley; all his thoughts far removed from earth.

Prometheus Unbound. The boldest and sublimest drama ever written. Comparison with *Paradise Lost*

(whose heroes are Christ and Satan, and whose prize of victory is the human race).

"Prometheus" represents the "Human Race," ever suffering and oppressed; Jupiter, his tyrant, the Almighty Jove; secondary characters—"Panthea" (all things); "Asia" (the cradle of the race); "Night" (darkness and chaos); the "Spirit of the Earth" (toil and woe); the "Spirit of the Moon" (desolation); the "Spirit of the Flying Hours" (Time); "Demogorgon, a tremendous gloom," with monsters, superstitions, gods and demons! The scene of conflict fills the continents of earth and regions of space.

Immensity and terror of the drama. Prometheus (human race) is chained and tortured on the Caucasus until he submit to incomprehensible commands.

Messenger (to Prometheus)—"Submit and yield,
Thou knowest not the period of Jove's power."

Prometheus—"I know but this, that its end must come."

Messenger—"Thou canst not count thy years to come of pain."

Prometheus—"Perchance no thought can count those years,
But yet they pass."

Beauty of "Asia" when her lover, "Prometheus," is "unbound." New era, the earth "a paradise of vaulted bowers lit by downward gazing flowers." Prophecy or blasphemy of "Prometheus." Significance of this lyrical drama.

Meaning of Isaiah and St. Paul.

The Cenci, "best drama since Shakespeare"—highest art required to make unnatural subjects readable.

Poem on Keats' "*Adonais*."

Shelley's death and burning at Spezzia, July, 1822.

QUESTIONS.

1. State some characteristics of Shelley's poetry?
2. What was the cause of his expulsion from the University of Oxford?
3. To what class of poetry does "Prometheus" belong?
4. Quote the whole of Shelley's apostrophe to America in *Laon and Cythna*.

LECTURE VI.

WILLIAM WORDSWORTH (1770-1850).

Born in Cockermouth (Lake Country), went to St. John's, Cambridge, at 18. Undistinguished. Enthusiastic for the French Revolution. Residence in France; wanted to join the Revolution Army, but soon disgusted with the "Reign of Terror" and "gave up all moral questions in despair" and belief in anything. Went to Germany with Coleridge. Returned to Lakes (1799) and settled at home as a philosophic thinker and poet. His perceptions revived. His life among the lakes and hills and simple shepherds.

Wordsworth a contrast to all previous poets. The "Socrates" of the Revolution poets—best revolution to "revolve within" and "know thyself."

His theory of poetry, "to be a truthful representation of how men actually think and speak in real, everyday life, poetry must use only plain and everyday words and differ in no respect from earnest, heartfelt, or impassioned prose," and all subjects, low as well as high, equal themes for poetry—the *Beggars* or the *Idiot Boy* as good as Princes or Warriors, the *Blade of Grass* as worthy as the oak.

Wordsworth divested everything of all extraneous dress and went straight to the heart of man and nature, with "no aloofness."

This plain theory made him long unpopular; he modified it, and brought more color and imagination into his verse.

His intense intimacy with nature—

The sounding cataracts haunted him like passions,
And he made his dwelling in the light of setting suns,
And the round ocean and the living air,
In the blue sky and in the mind of man.

"He saw through all this earthly dress
Bright shoots of everlastingness."

His penetration of Nature; he finds a soul and sense in all things—

"As a huge stone is sometime seen to lie
Couch'd on the bald top of an eminence
Wonder to all who do the same espy,
By what means it could thither come, and whence,
So that it seems a thing endued with sense;
Like a sea-beast crawl'd forth, which on a shelf
Of rock or sand reposeth, there to sun itself."

(*Resolution and Independence.*)

The sublimating process in art. The rock transformable into a statue, the statue to a painting, the painting to a photograph or a poem, the poem into song and music, the song into a dream, memories, shadows, etc.

Three periods of his poetry: (1) Pieces written at school and before 1808. (2) Publications between 1808–1820, when living in Allan Bank Cottage, the Parsonage and first seven years at Rydal Mount. (3) Publications between 1820–1850.

I. *We are Seven*; its philosophy. *Tintern Abbey*. Wordsworth and Scott. Wordsworth assimilated Nature, Scott “plagiarized Nature.” Coleridge and Wordsworth. *Lucy, Matthew*.

Mary Hutchinson, his wife in 1802—

“A creature not too bright and good
For human nature’s daily food.”

His sister Dorothea.

II. *The Solitary Reaper, Song on Brougham Castle, Peel Castle. Intimations of Immortality*, Platonism. Previous and future state (“Then shall I know even as I am known”).

“Our birth is but a sleep and a forgetting,” etc.

Schiller to *Laura* compared to Wordsworth’s Ode on Immortality.

The Excursion in 9 books. (1) *The Pedlar* (the author). (2) *The Solitary*. (3 and 4) *Despondency*. (5) Describes the pastor in the mountains. (6 and 7) Describes the churchyard in the mountains. “Ellen.” (8) *The Parsonage*. (9) *The Wanderer*.

The White Doe of Rylstone, or the Fate of the Nor-tons in the rebellion known as “The Rising of the North.”

Peter Bell, The Wagoner, Laodamia.

III. Declining powers. *Ecclesiastical Sonnets, Milan Cathedral and Yarrow Revisited*. Wordsworth’s place and purpose; his lasting influence as a poet.

QUESTIONS.

1. What was Wordsworth’s original idea of the nature of poetry as compared with prose?
2. How did Wordsworth differ from other poets in treating subjects?
3. Into how many periods may his poems be divided?
4. What qualifications had Wordsworth to be “the poet of Nature?”

BOOKS OF REFERENCE.

Any good edition of the poets will suffice for the study of poetry necessary in this course. The *Arlington Edition* 12mos, published by Hurst & Co., New York, containing each poet's works complete in one volume at 25 cts., or the *Crowell Edition*, on better paper, about 50 cts., will suit students. These editions have sometimes the author's *life* prefixed.

Any life or biography of the authors mentioned will be found interesting and instructive reading. The life and poems should be read in the week following the lecture. The poets named in this syllabus are excellently treated (both life and works) in John Morley's *English Men of Letters* series, published in New York by Harper Brothers, price about 75 cts. Every student should have these books.

Blackie's Life of Burns, Moore's Life of Byron, Lockhart's Life of Scott, Dowden's Life of Shelley, Knight's Wordsworth, should be in every library.

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LECTURE I.

AN INTRODUCTION TO THE STUDY OF HISTORY.

Human History is a serial story of surpassing interest, written with such consummate skill that no chapter can be omitted without making all the rest unintelligible; for the close of each chapter is the beginning of the next.

The Historic Method, or the consideration of a subject in its continuous development, is the key to all interest in History.

"History in its best sense is the history of those nations which have really influenced one another, so that their whole story, from the beginning to our own time, forms one tale, of which, if we wholly leave out any part, we cannot rightly understand what follows it."—*Freeman*.

In an unrestricted sense, History includes Political History and the History of Civilization.

Classification of Nations.

ARYAN NATIONS	{ Eastern Division	{ Hindoos, Ancient Persians, Celts, GREEKS, ITALIANS, TEUTONS, Slaves and Lithuanians.
	{ Western Division	
SEMITIC NATIONS	{ Babylonians, Assyrians, Hebrews, Phœnicians, Arabians.	

HAMITIC NATIONS.—Egyptians.

TURANIAN NATIONS.—All the rest of mankind.

In this course we study only those nations which have had the greatest influence on the world.

Divisions of History.

- I. Ancient History, from the earliest time to Fall of Western Empire, 476 A.D.
- II. Mediæval History, from 476 to Fall of Eastern Empire, 1453.
- III. Modern History, from 1453 to the present.

Great Historic Nations of Antiquity.

1. CHINA.—Chief influence on civilization through inventions : mariner's compass, gunpowder, block-printing.
2. INDIA.—Why has she no history, no chronology? Influence on modern civilization through Sanskrit literature.
3. ISRAEL.—Gave to world Judaism and Christianity. Incalculable influence on world. Teacher of righteousness.
4. PHENICIA.—Great colonizing nation of antiquity. "Missionary of Civilization."
5. ASSYRIA AND BABYLON.—"Parent and Inventress of Asiatic Civilizations." Great libraries. Wonderful results of recent excavations. Source of Greek and Etruscan Art.
6. EGYPT.—"The University of the Mediterranean nations." Hieroglyphics. Rosetta stone. Forty centuries of civilization poured into the nineteenth century. Oldest of historic nations.

Freeman's Division of History.

"All roads lead to Rome."

- I. States forming the Roman Dominion.
- II. Roman Dominion.
- III. States arising from the breaking up of the Roman Dominion.

PERIOD I.

Four States had a history of their own, and were powerful factors of civilization, before they were conquered by Rome: Assyria, Babylonia, Egypt, Greece.

Assyria and Babylon.

I. CHALDEAN OR FIRST BABYLONIAN EMPIRE.

Chaldean kings to be remembered :

1. Sargon I. Most famous as patron and protector of letters. Valuable service to modern civilization.
2. Chedorlaomer. Forerunner of all great Oriental conquerors. Idea of uniting all the nations of Asia in one empire.

II. ASSYRIAN EMPIRE.

Assyrian kings to be remembered :

1. Tiglath-Pileser II. (745-727 B. C.). Reign a landmark in universal history. Founder of political organization. (Associate 745 B.C. with 753 B.C., founding of Rome, the greatest political organizer the world has ever seen.)
2. Sennacherib. Holds highest place among Assyrian kings. Restoration of Nineveh. Marvellous deliverance of Jerusalem. Destruction of Babylon.
3. Assur-bani-pal. Great patron of art and architecture. Great Royal Libraries of Nineveh. Sculptures from his palace in British Museum.

III. SECOND BABYLONIAN EMPIRE.

Brief but splendid independence. Eventful reign of Nebuchadnezzar.

Babylonia conquered by Persia, 538 B. C.

(Associate this date with battle of Marathon, 490 B. C.)

Egypt.

OLD EMPIRE.

Lower and Upper Egypt united under Menes, the first historic king. 3892 B. C. (?) Thirty-one dynasties ruled in Egypt, up to its conquest by Alexander. We need remember but six :

I. The Fourth Dynasty, or Pyramid-Builders. "With them the real history of Egypt begins." First great contribution to civilization—tombs. The Egyptians lived in order to die. Great Pyramid of Khufu.

II. Twelfth Dynasty. Temples the characteristic feature. Osiris religion established, and Book of the Dead.

MIDDLE EMPIRE.

III. The Hyksos or Shepherd Kings. Good effects of their invasion: 1. Gave Egypt a strong centralized government. 2. When driven back to Asia they carried Egyptian civilization, which the Phœnicians transmitted to nations of the Mediterranean.

NEW EMPIRE.

IV. Eighteenth Dynasty. Probably the greatest race of kings the world has ever seen. 1. Thothmes III. "The Alexander of Egypt." Great builder as well as great conqueror. Temple of Karnak at Thebes, the "most majestic ruin in the world." Cleopatra's Needle. 2. Amunoph III. Temple of Luxor and Avenue of Sphinxes. Vocal Memnon.

V. Nineteenth Dynasty. Rivalled the preceding as conquerors and builders. 1. Seti I. Hall of Columns. "Most impressive edifice ever raised by man." 2. Ramešes II. Highest of all Egyptian sovereigns. "The Louis XIV of Egypt." He "knew not Joseph." Exodus in reign of his son, about 1300 B. C.

VI. Twenty-sixth Dynasty. Established (660 B. C.) by Psammetichus I. Changed policy of government. Threw

Egypt open to the world. Importance of this, just as Greece and Rome were growing up. In 527 B.C., Egypt was conquered by Persia. (Associate this date with 538 B. C. in history of Babylon, and 490 B.C. History of Greece.)

After the conquest of Egypt by Alexander the Great, Egypt was ruled by the Ptolemies until the death of Cleopatra, 30 B.C., when the country was annexed to Rome. Thus this "road," nearly forty centuries long, led to Rome.

Oriental civilization never advanced beyond a certain stage. Fatal defect in Asiatic civilization. Antiquity had no idea of human unity, no ideals of human progress or human freedom. For all these things we must look to the Aryan nations of the hopeful West.

QUESTIONS.

1. Which one of the Historic Nations of Antiquity interests you most, and why?
2. How do you account for the early civilization of Egypt?
3. How does the belief of the Jews conspicuously differ from that of other peoples of their time?
4. What right had the Egyptians, the Assyrians, the Babylonians and the Phœnicians to be called civilized?
5. What did each people do that has endured and been of use to all the world?
6. Do you really love history, or do you try to study and read it because you think you ought as part of a good education?

LECTURE II.

FROM THE BATTLE OF MARATHON TO THE LOSS OF GRECIAN INDEPENDENCE.

PERIOD I (Continued).

THE LAND OF GREECE. Geographic advantages. Political divisions: city-states with separate governments independent of all others \therefore fragmentary character of political life. The city the political unit.

The Formative Period of Grecian History.

a. **THE PRE-HISTORIC OR LEGENDARY AGE** (to 776 B.C.). Origin of Greeks. Foreign influences. The Greek character. Bonds of union. Great events of the Legendary Age. Form of Government: (1) Hereditary king, law-giver, judge and general. (2) Council of Elders or Nobles. (3) General Assembly or Agora, the organ of public opinion. Religion. Oracles. National Games. Amphictyonic Council.

b. **AGE OF CONSTITUTIONAL CHANGES AND COLONIZATION** (776-500 B.C.). Homeric monarchies give way to oligarchies, aristocratic and democratic; these to tyrannies. Planting of colonies. Relation of Greek colonies to mother-country. Constitution of Lycurgus. Hegemony of Sparta. Athenian Constitution developed by Solon. The Pisistratids. Cleisthenes founds the Athenian democracy.

The Age of Prosperity (500-359 B.C.).

a. **THE PERSIAN WARS.** Battle of Marathon (490 B.C.) saved Western civilization, broke the spell of the Persian name, birthday of Athenian greatness. Battles of Thermopylæ, Salamis, Plataea. Death-blow to Persian rule in Europe.

b. **ATHENIAN SUPREMACY.** The Age of Pericles. Confederacy of Delos. Athenian Empire. Growing discontent of the Allies. Spartan jealousy.

c. PELOPONNESIAN WAR. Causes. Question at issue: Shall maritime, democratic, Ionic Athens or military, aristocratic, Doric Sparta rule in Hellas? Fall of Athens.

d. SPARTAN SUPREMACY. Thirty Tyrants. Peace of Antalkidas.

e. THEBAN SUPREMACY. Battle of Leuctra. Mantinea. Death of Epaminondas.

Macedonian Rule (359-146 B.C.).

Rise of Philip of Macedon. Alexander the Great. Conquests of Alexander. Effect (1) on Greece, (2) on civilization. Successors of Alexander. Achaian and Aetolian Leagues. Destruction of Corinth 146 B.C. Macedon becomes a Roman Province.

QUESTIONS.

1. Compare the laws of Lycurgus and Solon in spirit and aim.
2. What unity had the Persians which the Greeks lacked, and what unity had the Greeks which the Persians lacked?
3. What qualities and characteristics of Pericles helped him to attain and hold his power in Athens?
4. Why should Alexander turn eastward instead of westward for his conquests?
5. What great cities of the world are due to the foundations of Alexander and his successors?

LECTURE III.

FROM TARQUIN TO THE GOTH.

PERIOD II.

Physical features of Italy. Advantages of Rome's position. Origin of Rome. Classes of society. Religion.

Regal Rome (753-510 B.C.).

Power centred in King, limited by (1) Senate or Council of Elders, (2) Popular Assembly or *Comitia Curiata*. Reform of Servius Tullius. *Comitia Centuriata* (composed of all land-holding patricians and plebeians, divided into centuries or hundreds). Expulsion of the kings 510 B.C.

Republican Rome (510-27 B.C.)

INTERNAL HISTORY. Power centred in two annual *prætors* or consuls who were patricians. Dictators in time of war. *Comitia Centuriata* gradually assumed much of the power of the old Curiate Assembly. Valerian Laws. Condition of the Plebeians. Secession to Mons Sacer. Appointment of Tribunes. Agrarian agitations. Aim of the Plebeians. Laws of the Twelve Tables. Valerian and Hortensian Laws. Military Tribunes with consular power. Censorship. Licinian Rogations. Plebeians admitted to the Sacred College. Publilian Laws. Hortensian Laws place the *Concilium Tributum* on a footing of equality with the *Comitia Centuriata*. The *Comitia Centuriata* superseded in legislation by the *Comitia Tributa*. Innovation of Appius Claudius. Weakening of consular powers. Composition of the Senate. Aristocratic character of the government.

EXTERNAL HISTORY. *Conquest of Italy*. Completed by 264 B.C. Relation of Rome to conquered States: (1) rights claimed by Rome. (2) Rights granted to conquered towns. Allies. Latin Franchise. Military colonies as distinguished from Roman colonies. *Period of Foreign Conquest* (264-146 B.C.). Steady and progressive growth of Roman Dominion. (1) By First Punic War. Beginning of Roman provincial system. (2) By Second Punic War. Spain a province. Carthage a dependent ally. (3) By conquest of Cisalpine Gaul, Macedonia and Greece. (4)

By Third Punic War. Carthage destroyed 146 B.C. (Associate with fall of Corinth.) Africa a Roman province. *Era of Revolution.* Servile War. Jugurthine War. Invasion of Cimbri and Teutons. Social War. Civil War of Marius and Sulla. Mithridatic War. First Triumvirate. Civil War of Pompey and Cæsar. (Battle of Pharsalia 48 B.C. practically ended Roman Republic.) Assassination of Cæsar 44 B.C. Second Triumvirate. Battle of Actium, 31 B.C.

Imperial Rome (27 B.C.—1806 A.D.).

Reign of Augustus Cæsar (27 B.C.—14 A.D.). Defeat of Varus, one of the "decisive" battles in the history of the world. Constitutional changes introduced by Tiberius, Claudius, Hadrian, Caracalla, Diocletian, Constantine. Growth and establishment of Christianity. Empire becomes Christian under Constantine (323). Beginning of barbarian invasions.

Mission of Rome was to realize the idea of justice and found an empire of law. Successive steps for accomplishing this traced: (1) In movement toward political unity through extension of franchise by Caracalla. (2) In movement toward administrative unity in reign of Diocletian. Constantine completed this. Fatal evils: (1) The arbitrary and oppressive taxation to support the enormous multiplication of offices, and the exemption of privileged classes. (2) The practice of replenishing army by foreign auxiliaries. The municipal system led to destruction of the middle class. Office of Defensor fell into hands of clergy. Bishop became most powerful person in city. In the general decay a new element of progress.

Division of Empire by Theodosius in 395. Fall of Western Empire, 476, a revolution not sudden but gradual. The final result of system first adopted by Augustus. Empire destroyed by two measures devised to preserve

it: (1) Admission of foreign troops to its legions. (2) The settlement of foreign tribes within its bounds.

At Fall of Western Empire (1) The Imperial System practically perished. (2) The municipal system survived, becoming a powerful means of perpetuating Roman law. (3) The agricultural population was but little modified.

Indirect influence of Rome can be traced in (1) The continued use of Latin. (2) In the sway of ideas interwoven with Roman civilization. Even when overthrown, Rome continued to reign by this intellectual fascination. For ages the ideal of political society. Roman civilization especially embodied the ideas of authority and order. Its spirit of unity and centralization. These reappeared in her two great bequests to succeeding ages—the Medieval Church and the Medieval Empire.

QUESTIONS.

1. What were the causes of the persecutions of the Christians?

2. Name some of the measures by which Rome secured her conquests.

3. What indication have we that, on the whole, Rome was a good ruler in Italy?

4. Of what use were Rome's conquests to the conquered?

5. Comparing the character of the Roman people at the beginning and close of the Punic period, what change do you notice? What has caused it?

6. Give your own opinion of the character of Julius Cæsar.

7. Was the Empire a usurpation or a political necessity?

LECTURE IV.

THE FRANKISH EMPIRE OF CHARLEMAGNE.

PERIOD III.

Barbarian invasions of the Empire. Alaric the Goth. Sacking of Rome. Invasion of the Huns. Battle of Chalons, 451. Sack of Rome by the Vandals. Ostrogothic kingdom under Theodoric. Lombards in Italy. The Salian Franks. Battle of Soissons. Conversion of the Franks. Death of Clovis. Kingdom united under Lothaire I. Quarrel of Austrasia and Neustria. Fredegonda *vs.* Brunhilda. Dagobert the strongest Merovingian king. Mayors of the Palace. Battle of Testry. Charles Martel becomes Major Domus. Battle of Tours, 732. Pepin deposes Chilperic and assumes the crown, thus founding the Carolingian line. Pepin conquers the Lombards. Donation to the Papacy of the Exarchate of Ravenna. Charles the Great succeeds Pepin as King of Franks. Wins the crown of Lombardy. Deposition of Constantine VI. by Irene. Coronation of Charlemagne, 800. Significance of the event.

The alliance of the Franks and the Papacy, due (*A*) On the part of the Church, (1) To the Arianism of the Goths. (2) To the Iconoclastic Controversy. (3) To dread of the Lombards. (4) To the prominence which the Catholic Franks derived from the victory of Tours. (*B*) On the part of the Franks, (1) To a perception of political advantage. (2) To the circumstances which brought about a change of dynasties—a veritable revolution. Elements of this revolution. The alliance of Franks and the Popes led to two results which shaped the whole subsequent development of Europe: 1. Establishment of the temporal power of the Popes. 2. The transfer of the Empire to the Franks.

Charlemagne's idea in accepting the imperial crown.

Theories regarding the coronation of Charlemagne. Really an act of rebellion against Eastern Empire. From the pretensions engendered by the alliance of Pope and Franks in this coronation arose the great drama of the Middle Ages—the struggle between the Popes and the Empire. Charlemagne's character and work. Influence on history of Europe. Division of his empire. Treaty of Verdun.

QUESTIONS.

1. What was embraced in the Empire of Charlemagne?
2. Give the intellectual features of his reign.
3. Why was the Battle of Tours so important ?

LECTURE V.

THE FEUDAL SYSTEM.

“ No land without a lord, no lord without land.”

FEUDAL PERIOD, 1000–1300.

Feudalism resulted from the peculiar social condition resulting from the contact of Roman and Germanic life and institutions. Different aspects in different countries. French feudalism typical. Elements contributing to its growth. Tenures of land to accession of Hugh Capet: (1) Tributary. (2) Allodial. (3) Beneficiary. By time of Charles the Bald the first two forms had nearly disappeared through (1) Grants of fiefs by large allodial proprietors. (2) Similar grants made by those who had wrested lands from others. (3) Commendation.

The Feudal relation was established by certain fixed ceremonies: (1) Homage. (2) Fealty. (3) Investiture (*a*) proper (*b*) symbolical. Duties of Vassal, military service and also certain Incidents: (1) Reliefs on renewal of investiture. (2) Fines on alienation of fief. (3) Escheats. Reversion of fief to lord through forfeiture or failure of

heirs. (4) Aids : (a) To ransom the lord. (b) To knight his oldest son. (c) To portion his eldest daughter. These incidents universal. Wardship and marriage were peculiar to Normandy and England.

Rights of feudal lord : (1) To coin money. (2) To wage private war. (3) Immunity from taxation. (4) Exemption from legislative control. (5) The right of first investigation and original jurisdiction within his own domain. Rights of Vassal : (1) Right of resistance. (2) Right of renunciation.

Causes of decay of feudalism : (1) Hostility felt towards it by both kings and the common people. (2) The Crusades. (3) The revolt of the cities. (4) Introduction of fire-arms in the art of war.

Defects : (1) Inability to enforce the principle of subordination, disquiet, wars, insecurity, and general anarchy. (2) Made strong governments impossible. (3) Its exclusiveness.

Merits. (1) Ameliorated somewhat the condition of Serfs. (2) The aristocratic tenure favored subjugation of lands and improved methods of agriculture. (3) Encouraged sentiments of honor, loyalty, exaltation of woman. (4) Developed ideas of self-dependence, personal dignity and regard for personal liberty. (5) Exalted the individual rather than the State. (6) Aided the growth and enfranchisement of the third estate. (7) While lacking the basis of public order led ultimately to a conception of the State higher than that reached by antiquity. (8) Feudal hierarchy rested on basis of property, not fixed. Might be recruited from every rank. (9) Though often a means of oppression, contained the potent germs of liberty : (a) Antagonisms of feudal classes became the conditions of modern constitutional progress. (b) The lowest rank not shut out from hope. (c) In the idea of contract—mutual consent and reciprocal obligation. Fulfilment of contract secured by (1) The right of resistance. (2) The right of renunciation of the feudal relation.

Feudal contract involved fundamental principles of modern political rights. Feudal assemblies the germ of modern representative government. What feudalism secured for the few came in time to be the possession of the many.

EXERCISE.

Draw a picture of a feudal village showing the natural effect of the relation (1) Upon the lord. (2) Upon his family. (3) Upon the people outside his castle.

LECTURE VI.

THE CRUSADES.

Arose from combined influence of Church and feudalism. Church supplied the motive; feudalism the organization.

Crusades.	Western,	Albigensian, 1208.
		Prussian, 1230.
		Spanish, 1085-1238.
	Eastern,	Eight expeditions against the Saracens, 1095-1270, of which the first four are most important.

The Western Crusades led to important results: Albigensian consolidated France. Prussian established the preponderance of the Teutonic Order. Spanish prepared the union of Castile and Arragon.

The Eastern Crusades failed in their purpose of overthrowing the Saracens, but exerted an immense influence on the civilization of Europe.

I. On the Church. 1. Complete estrangement of Eastern and Western Church. (a) Erection of Latin Kingdom of Jerusalem, 1099. (b) Latin conquest of Constantinople, 1203. The beginning of this separation in (1) Separation of Empires and asserted supremacy of Bishops of Rome. (2) Iconoclastic controversy. (3) The "filioque" controversy. 2. Church received vast accession of power.

(a) By popes assuming from the beginning an enormous dispensing authority, not only in punishment of sin, but from all civil and social obligations. (b) By increasing his legative authority. Presence of papal legates superseding all other ecclesiastical authority. 3. Great accession of wealth. Multitudes compelled to pledge or alienate property, often to Church. 4. Put in hands of Church a dangerous weapon by establishing the conviction of the righteousness of force in maintaining and propagating truth. 5. Strengthened by the establishment of great military orders: (1) The Hospitallers of St. John, or Knights of Malta. (2) Order of the Temple.

II. On feudal society. (a) Tended greatly to exalt monarchical over feudal power: (1) By consolidation of fiefs, owing to forced sales of fiefs to procure funds for the Holy Wars. (2) Approximation of king as sole suzerain to the seignior in possession, from the dying out of intermediate line. (3) By transfer of estates to citizens, who, being ennobled by the king, were naturally allied with him. (b) Exalted Roman at expense of feudal jurisprudence. (c) Repressed private wars. (d) Impaired power of feudal lords by modifying the military system of Europe: (1) Feudal armies unfit for such extended expeditions. (2) Unity of command necessary, the very antithesis of feudal principle. (3) New methods needed for composition, support and transportation of armies. (4) Modification of estimate of comparative value of horse and foot soldiers.

III. On the free towns. Influence and wealth greatly increased by (1) Universal demand for money for Crusades. Only towns could supply this \therefore land and castles sold to burghers. (2) Greatly extended legal privileges of burghers. (3) Great impulse given to commercial enterprise. (4) Great intellectual awakening following the commercial development. Centred in towns.

IV. On servile classes. Powerfully aided their emancipation. (a) By removing the legal obstructions created by feudalism. Assuming the cross the serf became free.

(b) By removing the legal maxim that a vagrant was presumed to be a serf. (c) By increasing importance of towns; hastened the enfranchisement of serfs. Free spirit of towns favored liberty. (d) Diffused sentiments of equality and fraternity, and modified the relations of classes.

The influence of the Crusades on Europe was profound. Most powerfully felt in modifying feudal institutions. Close of Crusades saw feudalism no longer a dominant fact. From this time the era of nations begins, and feudal institutions give place to monarchy and representative government.

QUESTIONS.

1. Give a full account of the Second Crusade.
2. What did Crusading teach the Crusaders?
3. Name the motives which, in your opinion, would lead men to go on a Crusade.
4. Why should the pope appeal especially to the French?

BOOKS OF REFERENCE.

- Whitney, *Life and Growth of Language*.
 Müller, *Lectures on the Science of Language*.
 Tylor, *Primitive Culture*.
 Maspero, *Life in Ancient Egypt and Assyria*. Just out.
 Amelia B. Edwards, *A Thousand Miles up the Nile*, and
Pharaohs, Fellahs and Explorers.
 Perrot and Chipiez, *History of Art in Ancient Egypt*,
Phœnicia and Assyria.
 Sayce, *Assyria, its Princes, Priests and People*.
 Century, May, 1887, *Finding Pharaoh*. Scribner, January,
 1888, *The Great Pyramid*.
 Ebers, *Egypt*. Also Novels *Uarda*, *The Sisters*, *Egyptian*
Princess.
 Myers, *Eastern Nations and Greece, and History of Rome*.
 Smith, *Smaller History of Greece*.
 Sheldon, *General History*. Gives original sources.
 Green, *Greece and Greek Antiquities*.
 Mahaffy, *Social Life in Greece, Rambles in Greece, etc.*
 Gladstone, *Studies on the Homeric Age and Homer*.
 Freeman, *General Sketch of European History*.
 Leighton, *History of Rome*.
 Freeman, *Historical Essays*. First Series.
 Fisher, *Outlines of Universal History*.
 Emerton, *Introduction to the Middle Ages*.
 Myers, *Mediæval and Modern History*.
Students' France. Bk. III.
 Masson, *St. Louis and the Thirteenth Century*.
 Freeman, *Norman Conquest*. Chap. III.
 Cox, *History of the Crusades*.
 Gray, *The Children's Crusade*.
 Irving, *Conquest of Granada*.
 Stanley, Lane-Poole, *Moors in Spain*.
 Freeman, *Chief Periods of History*.

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This pamphlet has especial reference to Extension Teaching in the United States. 10 cents.

"Report upon the University Extension Movement in England." By George Henderson, Secretary of the American Society. 10 cents.

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A Lecturer's Notes on the Working of University Extension. By R. G. Moulton. 10 cents.

Address delivered by R. G. Moulton before the American Society or the Extension of University Teaching. 10 cents.

"University Extension. By Sidney T. Skidmore. 10 cents.

(Reprinted from October Number of Lippincott's Magazine.)

General Circular (Free).

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SYLLABI.

The following Syllabi are 10 Cents each unless otherwise stated.

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Robert E. Thompson—English Literature.

[Series A]

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FOR THE

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SYLLABUS

OF A

COURSE OF SIX LECTURES

ON THE

Literature of the Age of Queen Anne.

- 1.—Characteristics of the Age.
 - 2.—Richard Steele.
 - 3.—Joseph Addison.
 - 4, 5.—Jonathan Swift.
 - 6.—Alexander Pope.
-

BY

C. T. WINCHESTER,

PROFESSOR OF ENGLISH LITERATURE IN WESLEYAN UNIVERSITY.

No. 33.

Price 10 Cents.

EDITIONS RECOMMENDED.

- Steele. Selections from the Tatler, Spectator and Guardian. Edited By Austin Dobson. (Clarendon Press Series.)
- Addison. Selections from Addison's Papers Contributed to the Spectator. Edited by Thomas Arnold. (Clarendon Press Series.)
- The Spectator, with Introduction, Notes and Index by Henry Morley.
- Selected Essays. Edited by C. T. Winchester.
- Swift. The Tale of a Tub, Gulliver's Travels and other Works. Edited by Henry Morley. 2 volumes. (Carisbrooke Library.)
- Pope. Poetical Works. Edited, with Notes and a Memoir, by A. A. Ward. (Globe Edition.)

SELECT WORKS OF REFERENCE.

- Leslie Stephen. A History of English Thought in the Eighteenth Century. Chapter XII.
- Edmund Gosse. A History of Eighteenth Century Literature, 1660-1780.
- Austin Dobson. Richard Steele. (English Worthies Series.)
- W. J. Courthope. Addison. (English Men of Letters Series.)
- Leslie Stephen. Swift. (English Men of Letters Series.)
- Leslie Stephen. Pope. (English Men of Letters Series.)
- J. R. Lowell. Pope. (My Study Windows.)

A class will be held at the end of the lecture, during which further information will be given on points not fully treated in the lecture. On account of the necessarily short interval between the different lectures, it has seemed best to differentiate the paper work from the class work. Those who desire to do the former are requested to send written answers to the questions on the first lecture within one week to George Francis James, 111 South Fifteenth Street, Philadelphia, Pa., and thereafter one paper each week. These will be examined and returned by mail. An examination will be held not earlier than seven weeks after the first lecture, open to those who have attended at least four of the lectures and classes and written a corresponding number of satisfactory papers. On the basis of the weekly papers and the examination, the certificate of the American Society for this course will be awarded.

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LECTURE I.

GENERAL CHARACTERISTICS OF THE AGE OF QUEEN ANNE.

The age was not in any sense an inspiring or heroic age. It seems, at first sight, to be without lofty ideals; its morality is low; its religion without much influence on character. Illustrations from the society of the age.

But the ruling characteristic of the age was a *critical and reasoning temper; a tendency to exalt the logical reason at the expense of the imagination and the emotions.*

This temper may be seen

1. In politics.
2. In religion.
3. In the arts—music, architecture.
4. In literature.

Here it demanded clearness, method and good sense. The result is, for the first time, we have a *good prose style*. Poetry, on the other hand, is confined by the demands of such a temper to a very restricted range of excellence.

Upon literature, we need to notice also the operation of certain other causes which tended to the same results:

1. The influence of France.
2. The growth of the great middle trading class, and the need:
 - (1) To secure their political support.
 - (2) To furnish them entertainment.
3. The rapid growth of London, which made the literature a *town literature*. A rapid glance at Queen Anne's London.
4. The social and political relations of the authors of the time, which made the literature a *personal literature*.

Two marks of reaction that may be seen near the close of the period:

1. A tendency to sentimentality.
2. A growing dislike of town life.

LECTURE II.

RICHARD STEELE.

Most genial and kindly of the Queen Anne men, and with more strength of character and practical wisdom than his biographers have usually accorded him. Born in Dublin, March 12, 1671-2. At the Charterhouse School, when he makes the acquaintance of Addison. Enters Christ Church College, Oxford, 1690. Enters the army.

His first book. *The Christian Hero*, 1701. The first of Steele's many attempts to bring the virtues into fashion. Really introduced a new style of writing.

His comedies. *The Funerals*, 1701; *The Lying Lover*, 1703; *The Tender Husband*, 1705; *The Conscious Lovers*, 1722. Had only limited success.

Steele's (second) marriage (1707), and domestic correspondence.

The Tatler, founded 1709. Steele's qualifications for such a work. Knowledge of society and love of it; his unstudied ease and gayety of manner; his healthy moral feeling; his gift of clear and attractive style.

Steele's political experiences, and the closing chapter of his life.

Died in Carmarthen, Wales, Sept. 1, 1729.

LECTURE III.

JOSEPH ADDISON.

Dignified, equable, refined, urbane. "Born to write, converse, and live, *with ease*." Born May 1, 1672. Son of Lancelot Addison, Dean of Lichfield. Fortunate in his parentage, early surroundings, education—a well-bred man. Entered Queen's College, Oxford, 1687. Received a pension in 1699, and went to the Continent for study, return-

ing after the death of King William in 1703. Published *The Campaign* in 1704. Appointed to the office of Commissioner of Appeals, 1704, and in public office all the rest of his life.

Addison's place as a prose writer. Simple and popular prose, which had hardly been written before the close of the seventeenth century, had now become current; *Addison was the first writer to see that this simple prose was capable of artistic treatment.* His style clear, easy, familiar, yet highly finished.

The papers of *The Spectator* fall into three classes :

1. Sketches of character and manners. Addison's treatment of these subjects compared with Steele's.
2. Religious and moral papers. Addison's insistence on a cheerful and reasonable religion.
3. Critical papers. Addison's criticism often narrow and mechanical, because it attempts to measure all literary values by purely formal standards; yet it is suggestive as a protest against merely personal or empirical criticism.

Addison's *Cato*, 1713. Its remarkable reception. Affords a good example of a drama that is "correct," yet lacking in almost all the essentials of a really great play.

The quarrel with Pope, and the last years of Addison's life.

Died June 17, 1719.

LECTURES IV AND V.

JONATHAN SWIFT.

Greatest and most unfortunate writer of his age.

Unfortunate in his biographers, who have, as a rule, done but scant justice to his character, even if just to his abilities.

Born in Dublin, November 30, 1667.

His residence with Sir William Temple ; nature of his relations with Temple.

Decides to enter the Church ; his motives for doing so not ignoble ones.

His acquaintance with Hester Johnson ; their relation that of big brother and little sister, and in his thought, at least, always continued such.

The Battle of the Books and *The Tale of a Tub*, 1704. The former of little interest, now that we have forgotten the quarrel that occasioned it ; the latter, the greatest of English prose satires. Swift's satire always that kind in which the seeming great is parodied in the little. This satire, great in the magnitude of the events satirized, and in the masterly economy of satiric material. Marvellous aptness and ingenuity of the story ; vigor and homely strength of the style.

The Tale of a Tub does not indicate that Swift had no real respect for serious things ; but only that he had no respect for anything he thought false, simply because others thought it true.

Three other pamphlets on the moral and religious condition of society :

- (1) An Argument against Abolishing Christianity.
- (2) A Project for the Reformation of Religion and Manners.
- (3) The Sentiments of a Church of England Man. This last important as explaining :

Swift's secession from the Whig to the Tory party in 1711.

This was not a piece of treachery, but was prompted in the main by a laudable interest for the Church.

His career as a political writer, 1711-14. His ambition gratified for a little time ; his love of power had full exercise.

His appointment, in 1713, to the Deanery of St. Patrick's,

- Dublin, and his retirement thither on the death of Queen Anne, next year. His punctilious fidelity in his clerical office. His wise and liberal benevolence.
- The Stella and Vanessa history. Swift's affection for Stella deep, tender, but passionless; the affection of a brother or guardian, and unchanged to the end. His relations to Vanessa correctly indicated in *Cadenus and Vanessa*; he is chargeable only with a pardonable blindness in that matter. The alleged marriage with Stella very doubtful.
- He takes up his pen again, this time in the cause of Ireland. Condition of Ireland. *The Drapier's Letters*, 1724. Occasion of them; Swift's method of attack. In the Fourth Letter he states clearly the claim of Ireland for self-government. *The Drapier's Letters* mark the beginning of the era of constitutional agitation in Ireland.
- Visit to London, in 1726, and publication of *Gulliver's Travels*. The satire of universal misanthropy. Invention and vigor of style unabated, but the temper of bitter cynicism increasing. Last portions of *Gulliver* indicate the beginnings of mental disease.
- Closing years; mental decay, and death, 1745, October 19.

LECTURE VI.

ALEXANDER POPE.

The poet of his age. Deficient in imagination, sentiment, music; but endowed with wit, intellectual keenness, a nice sense of form, and thoroughly devoted to his art. Born in London, May 21, 1688. Education private and exclusively literary. His literary ambition showed itself very early. Native fitness for the kind of work he was to do.

The *Pastorals*, published 1709; *Windsor Forest*, 1713. Specimens of extreme artificiality in the treatment of nature, and lacking in the lightness necessary for the conventional pastoral.

The *Essay on Criticism*, 1711. Subject was one in which he was thoroughly interested, and was fitted to his poetic manner. His own poetic creed.

The Rape of the Lock, 1712, 1714. His first venture in social satire and satiric portraiture. Ingenious, witty, brilliant; but perhaps over-elaborated and deficient in sentiment.

The period of work on the *Homer*, 1714-25. "A pretty poem, but you musn't call it Homer."

The Satiric period, 1725-1744. Pope's qualifications as a satirist; his motives; his enemies. *The Dunciad*, 1728. *The Moral Essays and Imitations of Horace*. 1730-38.

The *Essay on Man*, 1732-34. Its philosophy borrowed from Bolingbroke. Its fragmentary and epigrammatic character.

Pope's last year. Estimate of his work. Died, May 30, 1744.

EXERCISES.

I.

1. What was the general characteristic of the Age of Queen Anne?

2. How does this characteristic show itself in literature?

3. What were the four great moulding influences on literature during that time?

4. What marks of re-action appeared at the close of the period?

II.

1. Give a brief sketch of Steele's literary career.
2. What can you say of him as a politician and a man?
3. Cite some passage from his writings as illustrating the state of morals and religion in his time.

III.

1. Give an outline of Addison's relation to Steele.
2. How does Addison's prose style differ from that of Steele or Swift, and what are its specific merits?
3. Name some passages that will exemplify these merits.

IV.

1. Outline briefly the life of Swift before 1710.
2. Indicate some of the unfortunate circumstances of his life.
3. The element of allegory in the Tale of the Tub is of special merit in what particular?

V.

1. Review Swift's political action in 1711.
2. Explain the occasion of the Drapier's Letters, and indicate Swift's line of argument.
3. What mental traits appear in Gulliver's Travels?

VI.

1. What were Pope's special merits and defects as a poet?
2. What were Pope's qualifications as a satirist, and what were his motives and objects in this writing?
3. Is Pope's originality in the "Essay on Man" questionable? How far is any element borrowed, and how far is the poem a true expression of his native genius?

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A class will be held at the end of the lecture, during which further information will be given on points not fully treated in the lecture, or on which a recapitulation is desired by students for greater clearness.

Exercises for each week will be given at the end of the lecture. Persons attending the lecture are invited to send written answers to any two of the questions given. The papers should be mailed to SIDNEY SHERWOOD, University of Pennsylvania, and should arrive at least forty-eight hours before the next lecture. On the papers should be placed some signature, the name of the centre, and the date when the papers are to be returned.

Students are cordially invited to add to these exercises any questions, or to suggest any topics relevant to the subject which seem to them to require more detailed explanation. The papers will be returned with comments at the class, when the topics will be discussed in a conversational manner by lecturer and students. All persons attending the lecture are invited to attend the class, whether they have sent in exercises or not.

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OUTLINE OF THE LECTURES.

SIX LECTURES ON THE HISTORY OF MONEY.

1. MONEY AND CIVILIZATION 15
Money material. What man uses for money. Conclusions warranted by the study of monetary history. Silver and gold. Why they are the universal money. Money work. What man uses money for. Money as the universal transfer medium.
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7. HISTORY OF MONETARY THEORIES..... 40
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9. PAPER MONEY. INCONVERTIBLE AND CONVERTIBLE..... 51
 Government paper money. Motives for the issue of government notes. Theory of government paper money. Economic effects of government paper money. Coin and bullion certificates. Bank-notes. Convertible bank-notes. "Banking Principle" and "Currency Principle." Limitation of issues. Securing of issues.
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11. THE "BATTLE OF THE STANDARDS." BIMETALLISM. THE SILVER QUESTION..... 62
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12. MONETARY PANICS..... 66
 The money market. Credit and panic. Causes of monetary panics. The problem of managing a panic.

USEFUL BOOKS OF REFERENCE.

THE literature of Money is so vast that a wise selection of a few books is almost impossible. The list here given is meant to contain books which are easily accessible, and which will tempt to further study after the lectures are finished.

Two books mentioned in the list,—viz., Report of the International Monetary Conference of 1878, and W. S. Jevons's *Investigations in Currency and Finance*—contain extensive and valuable bibliographies of money which will be of great service in making a thorough study of the subject.

Reference to works in foreign languages has been avoided. The French literature on this subject is very rich; the Italian and German, also. The student reading any of these languages can easily find trace of the books he needs from references in the books here mentioned.

THE GENERAL SUBJECT OF MONEY.

Andrews, E. B., *Institutes of Economics*.

Bastable, C. F., "Money." *Encyclopædia Britannica*.

Colwell, Stephen, *Ways and Means of Payment*.

Ely, R. T., *Introduction to Political Economy*.

* Jevons, W. Stanley, *Money and the Mechanism of Exchange*.

Mill, J. S., *Principles of Political Economy*.

Nicholson, J. S., *Money and Monetary Problems*.

Patterson, R. H., *The Science of Finance*.

Poor, H. V., *Money: Its Laws and History*.

* Text-book of the course which should be in the hands of every student.

Ricardo, David, Works.

Smith, Adam, *Wealth of Nations*.

- * Walker, Francis A., *Money in its Relations to Trade and Industry*.

——, *Political Economy* (larger edition).

——, *Money*.

Walker J. H., *Money, Trade, and Banking*.

Willson, H. B., *Currency*.

SPECIAL MONETARY TOPICS.

Ashley, W. J., *English Economic History*.

Atkinson, Edward, *Report on Bimetallism in Europe*.

(Sen. Exc. Doc., No. 34, 50th Congress.)

Bagehot, Walter, *Lombard Street: A Description of the Money Market*.

Bolles, *Financial History of the United States*.

Böhm-Bawerk, *Capital and Interest*.

Carey, H. C., *Pamphlets on the Currency*. See Works, Vol. XXXI.

Dunbar, C. F., *Theory and History of Banking*.

Evans, *History of the United States Mint and Coinage*.

Giffen, Robert, *Essays in Finance*.

Gilbart, J. W., *History, Principles, and Practice of Banking*.

Goschen, *Theory of the Foreign Exchanges*.

Horton, S. Dana, *Gold and Silver*.

——, *The Silver Pound*.

——, *Report of International Monetary Conference of 1878*. (Sen. Exc. Doc., No. 58, 45th Congress.)

Ingram, J. K., *History of Political Economy*.

Jacob, William, *Historical Inquiry into the Production and Consumption of the Precious Metals*.

James, E. J., "Banks of Issue." *Lalor's Cyclopædia*.

Jevons, W. S., *Investigations in Currency and Finance*.

* Text-book of the course which should be in the hands of every student.

Knox, John Jay, United States Notes.

——, "Banking in the United States." *Lalor's Cyclopædia.*

Laughlin, J. L., History of Bimetallism in the United States.

Laws of the United States Relating to Loans, Currency, Coinage, and Banking. (Compilation published by the Government in 1886.)

Leslie, T. E. C., Essays in Political and Moral Philosophy.

Linderman, H. R., Money and Legal Tender in the United States.

Liverpool, Lord, A Treatise on the Coins of the Realm.

Macaulay, T. B., History of England.

Patterson, R. H., The New Golden Age.

Rogers, J. E. T., The First Nine Years of the Bank of England.

Sherman, John, Speeches and Reports on Finance and Taxation.

Sumner, W. G., History of American Currency.

Upton, J. K., Money in Politics.

Wells, David A., Recent Economic Changes.

MISCELLANEOUS.

Annual Finance Reports of the United States, containing reports of Comptroller of the Currency, Director of the Mint, etc.

Congressional Record.

House and Senate Documents.

Report of the International Monetary Conference of 1878.

Journal of the Royal Statistical Society, London.

American Bankers' Magazine.

Reports of the Annual Meetings of the American Bankers' Association.

Bradstreet's and other periodicals devoted to *economic*, financial, commercial, and monetary subjects.

Encyclopædia Britannica.

Lalor's Cyclopædia of Political Science, Political Economy, and United States History.

OUTLINE OF A COURSE OF READING.

Two books are essential, and should be *carefully studied*:

1. Jevons's Money and the Mechanism of Exchange.
2. Walker, F. A., Money in its Relations to Trade and Industry.

For the purpose of this course of lectures, no substitutes for these books could be suggested which would be of equal worth. If students wish to purchase a few more books, the following are recommended: Knox, United States Notes; Dunbar, Theory and History of Banking; Andrews, Institutes of Economics; Bagehot, Lombard Street; Sumner, History of American Currency; Laws of United States relating to Loans, etc., 1886.

SHORT COURSE OF READING.

Jevons and Walker should be followed by the reading suggested at the beginning of each lecture. The reader will find frequent reference in these books to other books, and can follow the line of his special interest still further if he wishes. Some good text-book in Political Economy should be always at hand for the close study of the economic principles involved. Walker and Andrews are especially good on money.

LONGER COURSE OF READING.

After Jevons and Walker, Professor Bastable's article on "Money," in the Encyclopædia Britannica (9th ed.), may be read as giving an admirable general review of the subject.

The historical evolution of money and money substitutes should be grasped before going deeply into the theory and the practical aspects of the subject.

Enough is given in Jevons, Walker, and Bastable on the subject of primitive money. Books of travel, writings of anthropologists, accounts of early institutions, history of ancient or barbarous peoples, old laws, early records of state, etc., furnish innumerable instances of all types of early money. The student should form the habit of making all his general reading aid his systematic special study.

On the subject of coins and coinage, read articles "Mint" and "Numismatics," in the *Encyclopædia Britannica*, Liverpool's *Coins of the Realm*, pp. 25-56, Walker's *Money*, Chapters IX, X, XI, and Linderman's *Money and Legal Tender*. Linderman was formerly Director of the Mint, and has given a very clear and interesting account of the history of United States coinage and some of the processes of coinage. Consult the *Laws relating to Loans*, etc., 1886. The coinage laws from 1792 to 1886 are there given, pp. 211-288. Consult, also, Evans, *United States Mint and Coinage*. *Visit the Mint*, and learn as much as possible of the technical processes of coinage, and examine the various collections of United States and foreign coins.

The subject of the production of the precious metals is very important. Jacob's book is the great authority, and will repay reading through, although rather long. Walker's *Money* (the large work), in Chapters V-VIII, treats historically of this subject, and follows Jacob quite closely. An excellent plan would be to read these chapters in Walker, referring constantly to Jacob, and reading such parts as are of special interest. Having thus got the general facts clearly in mind, read Adam Smith, *Wealth of Nations*, Book I, Chapter XI, *Digression on the Variations in the Value of Silver*, for the sake of getting an idea of this old master. The most valuable discussions of the problems involved by great discoveries of gold and silver have been

written since 1850. Read in Laughlin's *Bimetallism*, Chapter V, on the gold discoveries; VIII, on production of gold since 1850, and XII, on cause of fall in value of silver. Follow this with the essay in Nicholson's *Money* on the "Effects of Great Discoveries of the Precious Metals," and Chapter VII in the same book, on the international influences that fix general prices. The second article in Jevons's *Investigations*, etc. (on the fall in the value of gold), may then be read, followed by "Changes in General Prices and in the Purchasing Power of Gold," being Part VII of Appendix D in Atkinson's *Report on Bimetallism*. Various other parts of this *Report* will be found helpful. Patterson's *New Golden Age* may be consulted with much profit. Wells's *Recent Economic Changes* is excellent, as pointing out other factors than the quantity of money which may be operative in change of prices.

Passing on to credit substitutes for money, we take up first the "Organization of Credit" in the *Banking System*. Begin with Adam Smith's account of the Bank of Amsterdam, *Wealth of Nations*, Book IV, Chapter III, Part I. Then read the chapters of Gilbart's *Banking*, indicated below. Mr. Gilbart was a practical banker for half a century, from his twentieth year till his death in 1863. After twenty years' experience in a London and in an Irish bank, and after publishing various writings on the subject of banking, he was made General Manager of the London and Westminster Bank—the first of the Joint-Stock Banks in England, opened in 1834. It was largely through his efforts that the Joint-Stock Banks survived the opposition encountered on every side, and became established as a part of the English banking system. His book may be relied on for accuracy, and is clear in statement. Read §§ I and II for the early history of banks in England and elsewhere; §§ III–VI for an account of the Bank of England and the other English Banks; § XXVIII for a discussion of the relation of the Bank of England to the currency since the Act of 1844; § XXXV

for a sketch of the Clearing House; and §§ XXXVI and XXXVII for a history of the crises of 1857, 1866, 1875, and 1878. Macaulay, in *History of England*, Chapter XX, tells in his graphic way the story of the founding of the Bank of England. It would be well to read also his third chapter on the state of England in 1685, and his account of the controversy over the Recoinage Act of 1696 (Chapter XXI). Rogers's *First Nine Years of the Bank of England* is very suggestive, admirably bringing out the political side of the movement for the Bank. Then read Professor Sumner's discussion of the "Bank Restriction" in his *History of American Currency*, which also contains the "Bullion Report." Ricardo's *Works* might well follow. Read Chapter XXVII in his *Principles of Political Economy*, on "Currency and Banks," and also one or two of his classical essays on currency questions. Next take up Bagehot's *Lombard Street: A Description of the Money Market*, a book written with all the nervous vigor and keen insight of this versatile author. While the book treats mainly English conditions, a clever shifting of recitals to the American money market will throw much light on the intricate subject.

This reading will have taken the student over the Bank Charter Act of 1844 and its effects. Then read the article in Lalor on "Banks of Issue," by Prof. E. J. James, to get a general view of the subject and a clear idea of the scientific questions involved.

Turning now to American Currency and Banking, the article in Lalor, by John Jay Knox, on "Banking in the United States," will be found the best introduction to the subject. He has described the National Bank system in his report as Comptroller of the Currency (Finance Report, 1875). Then read Sumner's *History of the American Currency*. The subject of paper money is best approached through the history of American Government issues, both colonial and national. Follow Sumner with Knox's *United States Notes*,

Upton's *Money in Politics*, and Sherman's *Speeches on the Currency*. The Government compilation of *Laws relating to Loans and the Currency, Coinage and Banking*, published 1886, and before mentioned, should be constantly at hand for reference. Study the *Legal Tender Act and Legal Tender Cases*, the National Bank system, and the present coinage laws of the United States, so as to understand clearly our present currency. Bolles's *Financial History of the United States* is especially useful. Colwell's *Ways and Means of Payment* is an able, systematic treatise on money and credit, and might well be read at this point.

This reading will bring into view the principles underlying the whole monetary system as well as the practical questions at issue. For clear exposition and able discussion of these principles, especially in regard to the part played by credit as organized in the banking system, turn to J. H. Walker's *Money, Trade, and Banking*, C. F. Dunbar's *Theory and History of Banking*, and R. H. Patterson's *Science of Finance*. This latter book discusses also the question of the relation of the State to the currency.

The problem of the monetary standard remains,—“*The Battle of the Standards*.”

A great classic is *A Treatise on the Coins of the Realm*, by Lord Liverpool, published at Oxford in 1805. The writer had held many high offices,—Secretary of the Treasury, Lord of the Treasury, President of the Board of Trade, among others. In 1774 he had successfully urged the recoinage of the gold coins. England had always had a silver standard; gold, however, being a legal tender at a certain fixed ratio to silver. The silver had become very worn. Coin was scarce, the bank having stopped specie payments in 1797. Lord Liverpool urged the change from a silver to a gold standard, the making of gold the sole, full legal tender, giving only a small legal tender limit to silver as a subsidiary coin. This policy was substantially carried out by the *Recoinage Law of 1816*, which

as amended in 1870 is the English law to-day, and Englishmen have now forgotten that they ever had a silver standard. S. Dana Horton says of this Treatise, it "became the great charter of Monetary Right for the Nineteenth Century." It contains much valuable historical information on English coinage, as well as formal discussions of the nature and functions of money and the principles applying to a monetary system. Its bearing upon the bimetallic controversy is obvious. Then read Ricardo's essay, "Proposals for an Economic and Secure Currency." The book to be next read is Horton's *The Silver Pound and England's Monetary Policy since the Restoration*, or Horton's *Gold and Silver*. Laughlin's *Bimetallism in the United States* should follow. The Report of the International Monetary Conference of 1878 is very valuable, containing an appendix filled with historical material bearing on this question, a brief account of the Latin Monetary Union, and an extensive bibliography mentioned above. Atkinson's *Report on Bimetallism in Europe* will also be found useful. Nicholson has several good essays in favor of Bimetallism in his *Money and Monetary Problems*. Giffen writes on the other side. Read also Jevons's essays on the subject in his *Investigations*, etc., and the chapter on "Bimetallism" in Walker's *Political Economy*. Henry C. Carey's Pamphlet on *Financial Crises*, Willson's *Currency*, pp. 250-284, would be a good introduction to the subject of panics. Follow with Jevons's essays on *Crises*, in his *Investigations*, etc., and with Well's *Recent Economic Changes*.

A work of the highest importance is Lalor's *Cyclopædia of Political Science*. It should be diligently referred to throughout this entire course of reading. The unique value of this book is that it contains the whole political and economic history of the United States in compact form, and with abundant reference to special authorities, while at the same time treating particular questions not merely in the light of American experience, but with a broad outlook

upon European conditions, and in a manner truly scientific.

Finally, when the above outline of reading is exhausted, take up Andrews's *Institutes of Economics* and *study* Part II, Exchange; Part III, Money and Credit; Part IV, Chapter III, Interest; Part VI, Chapters I-III, United States Currency. It is compact with suggestive thought and an excellent stimulus to independent thinking on the part of the reader.

LECTURE I.

MONEY AND CIVILIZATION.

References.—Jevons, Chaps. I–VI; Walker, Ch. I; Walker, Pol. Econ. §§ 159–168, 182–187; Andrews's Institutes, Part III, Ch. I; Art. "Money," Ency. Brit., Parts 1, 3, 4.

A nation stamps the history of its civilization into its coin.

What the future historian might learn from the gold eagle and the silver dollar of the United States.

What we learn from ancient coins about ancient peoples.

Whether we study the progress of mankind chronologically from the cave dwellers of the earliest human age to the cultured Paris of to-day, or geographically from the heart of Stanley's Africa to the heart of London, we find that the history of money is the history of civilization.

Money Material. What Man uses for Money.

Examples of Uncoined Money.—(1) Metal by weight,—
"And Abraham weighed to Ephron the silver, . . . four hundred shekels of silver, current (money) with the merchant" (Genesis 23 : 16).
(2) Non-metallic money,— "cattle money" of Homer, "wampum" of ancient America, "tobacco money" of colonial Virginia.

Barter.—The direct exchange of goods for goods, of goods for service, of service for service. The rudest form of exchange.

"The African Barter Company, Limited," of London.

Conclusions warranted by the Study of Monetary History.

- (1) Simple barter is a mark of a rude age or a rude people. It is commercial barbarism.
- (2) The commodity which is used for money is generally the product of an important industry of the people.
- (3) Almost every article of use to man has been used as money.
- (4) With progressive peoples the metals are soon preferred to other substances as money material.
- (5) With industrial and commercial progress, the evolution of money is towards the use of a more and more valuable metal, iron, copper, silver, gold.
 "It has been found by long experience, and by the concurrent opinion of civilized nations in all ages, that these metals, and particularly gold and silver, are the fittest materials of which money can be made" (Lord Liverpool, Coins of the Realm, p. 9).
- (6) Coined money argues a relatively high degree of political and industrial development.

Silver and Gold. Why they are the Universal Money Metals.

Lord Liverpool says (page 9) they

- (1) Are homogeneous in substance.
 - (2) Are minutely divisible.
 - (3) Have great value in small bulk.
 - (4) Are not subject to decay.
- Suggest other advantages.

Money-Work. What Man uses Money for.

Imagine Philadelphia or New York suddenly stripped of all its money. The same goods in the stores

as before. The same materials and machinery in the factories. The same rolling-stock on the railroads. The same hungry million of people. Will exchange go on at the store, or production at the factory?

The economic basis of civilization is "Division of Labor," or, more fully, the organization in society of specialized industries.

Facility in the transfer of goods becomes thus the great material characteristic of civilized society.

The picture of a moneyless modern city shows us that this facility of transfer, and therefore this specialization of industry, are made possible only by means of

Money as the Universal Transfer Medium.

Savigny says, "Geld ist eine allgemeine Vermögens-Macht" (Money is a universal purchasing power; or, money gives its owner universal power over commodities). The producer seeking capital and the consumer seeking product both obtain the end sought by means of money. *The Science of the Market* is an important part of Political Economy.

Production has at least three well-marked stages :

- (1) Production of raw material, as agriculture.
- (2) Manufacture, or production of farm value.
- (3) Commerce, or production of place and time values, by *getting the goods to market*.

A "market" may be defined as the *meeting of demand and supply*. As the means of transportation bring supply to meet demand, money and credit are the means of bringing demand to the production and consumption of supply. Agriculture and manufacture may conceivably be carried on in a purely local "market" and by means of barter or rude

money, involving immediate consumption. Commerce implies a wider "market." Industrial civilization has been merely a process of *widening the "market."* Money has been a necessary agent in this process; it commands commodities in the world-market and for consumption indefinitely deferred.

Thus, the instinct of saving, the growth of capital, improvements in transportation, a widening commerce, the spread of intelligence, the extension of moral obligations,—all the characteristics of economic civilization demand the use of money. Money, it is true, does not make man civilized, but civilized man makes money. It is true, historically, that man without money is uncivilized man.

LECTURE II.

COINS AND COINAGE.

References.—Jevons, Ch. VII, VIII, X, XI, XIII; Bastable, "Money," Ency. Brit., Part 5, 6; Walker, Pol. Econ., §§ 168, 179–181, 192–204; Andrews's Inst., Part III, Ch. I, §§ 75, 76, Art. "Mint," Ency. Brit.; Walker, Money, Chaps. IX, X, XI.

No better definition of coin than Lord Liverpool's (Coins of the Realm, p. 9),—"Certain portions of these metals, with an impression struck upon them by order of the sovereign, as a guarantee of their purity and weight serve as coin." Coinage supplants earlier usage of weighing the metals at each transaction. "There can be little doubt that every system of coinage was originally identical with a system of weights, the unit of value being the

unit of weight of some selected metal" (Jevons, p. 89),—shekel, talent, æs, stater, libra, pound, etc. Coinage thus only a government certificate of weight and fineness, so that the pieces may be taken by mere count.

Advantages of Coinage.

- (1) Uniform fineness.
- (2) Ease of ascertaining value.
- (3) Fraud rendered more difficult.
- (4) A badge of nationality. "Whose image and superscription are these?"

Suggest other advantages.

Disadvantages.

- (1) International circulation impeded.
This is rather an argument for an international system of coinage.
- (2) Cost of coinage. But more than offset by increased efficiency of the coined metal.

Suggest other disadvantages.

Early History of Coinage.

Earliest known coinage was by Greek peoples of Asia Minor and Greece, between 700 and 900 B.C. Roman coinage began between 500 and 600 B.C. Exceedingly rude. Bronze æs, being pound weight divided into twelve ounces. Roman silver coinage began about 281 B.C.,—denarius or ten æses. Gold coined at Rome about 90 B.C.

Coining spread to the East from Greece. From Rome the northern nations acquired the art. Throughout the Middle Ages coins after the pattern of the Roman denarius were issued in Germany, France, England, and Scandinavia.

The Tower Pound or Saxon Pound the basis of English Silver coinage. Substantially the same as that in use in Germany and France. The Pound was of 20 shillings, each shilling of 12 pence. The Pound Weight was of 12 ounces, each ounce of 20 pennyweights. Each penny then weighed one pennyweight, and 240 pence as well as 240 pennyweights made one Pound. This is supposed to be the system of Charlemagne. (Liverpool, Coins of the Realm, p. 29.) •

Debasement of Coins.

Universal, almost in the history of coinage.

Athenian depreciation by Solon to help the debtors, a famous example. Roman depreciations began probably in the distresses of the Hannibalic war.

English depreciations. "In the reign of William the Conqueror a pound weight of silver was also the pound of account." (Peel's Speech on Bank Act of 1844.) The standard of fineness was eleven ounces two pennyweights silver, and eighteen pennyweights alloy, in the pound. This standard of fineness was maintained from the earliest times, except for the years 1542-60.

Coins are debased in two ways,—

- (1) By diminishing the weight of a given coin, the standard of fineness remaining unchanged.
- (2) By diminishing the fineness of metal in a given coin, the standard of weight remaining unchanged.

English silver has been repeatedly debased in the first way. Edward I, in 1300, "coined the pound weight of sterling silver into twenty shillings and three pence," instead of twenty shillings, as formerly. Successive debasements followed until Elizabeth, who, although she restored the standard

debased by her father, still further reduced the weight, coining sixty-two shillings to the pound weight—the last debasement until 1816. This was a total debasement of about sixty-seven per cent.

- Several unsuccessful attempts were made thereafter to further debase the coin, the most notable being the proposition of Mr. Lowndes, in 1695, to coin the pound into seventy-seven shillings and six pence, defeated by the efforts of John Locke, Sir Isaac Newton, and others. Macaulay's *History of England*, IV, 493, vividly describes the causes which led to this agitation and to the Recoinage Act of 1696.

These debasements were often simply the recognition by the government of the fact that through wear and clipping the coins were actually depreciated, (Nicholson, *Money* 42), yet sometimes they were made for the profit of the exchequer. Depreciation in value does not always follow debasement.

Seignorage.

Coinage from early times considered the prerogative of the sovereign. Systems of private free coinage by individuals and of coinage monopolies granted by government have both failed of the highest results. The almost universal practice and theory is governmental coinage. Herbert Spencer, however, vehemently urges the doctrine of private coinage. A part of his theory of absolute non-interference by government in industrial affairs.

Seignorage is the charge made by the government, or other coiner, for coining. In theory, it is a deduction from the bullion brought for coinage, at least sufficient to cover cost of coinage. Many governments have, by deducting more than this, debased the coinage and made large profits. The

general usage now is to make no charge for coining the standard money. Subsidiary and token coins are, however, intentionally made below the standard, and governments derive large profits from coining them. The cost of coinage, however, is enormous, if interest on the value of the metal employed is calculated, and seigniorage could not well cover this.

Gratuitous coinage is coinage without seigniorage.

Free coinage is the equal and unlimited right to owners of bullion to have it coined. Free coinage may be gratuitous or not.

Standard Coin and "Tokens."

Standard coin is coin the metallic value of which is, theoretically at least, equal to its legal value. "Token" coin is coin the metallic value of which is less than its legal value. It is a promise to pay in standard coin. Form of a private copper token of 1791, in Southampton, England: "Half-penny Promissory, payable at the office of W. Taylor, R. V. Moody & Co." The principle of circulation of "tokens," the same as that of paper money. The metallic value of the bronze coinage of Great Britain is not more than one-quarter its nominal value.

The Art of Coinage.

Of slow development. The first coins had impression only on one side. Reverse had simply punch-mark. The punch was struck by a hammer. Gradually the punch became a second die. Some ancient coins were cast. English coins still struck by hammer in seventeenth century. "Milling" introduced in seventeenth century, and screw succeeded the hammer. A visit to the mint the best

way to learn the perfected methods of modern coining.

As to form, alloy, size, and execution of coins, the objects to be aimed at are,—

- (1) To prevent counterfeiting.
- (2) To prevent fraudulent removal of metal from the coin.
- (3) To reduce loss of metal by legitimate wear and tear.
- (4) To make the coin an artistic and historical monument of the State. (Jevons, Ch. VII.)

Suggest others.

LECTURE III.

PRODUCTION OF GOLD AND SILVER. HISTORICAL FLUCTUATIONS IN THE VALUE OF MONEY.

References.—Walker, Chaps. II, III, IV, V, Walker's Money, Chaps. V to VIII; Laughlin, Bimetallism, Chaps. V, VIII, XII; Jevons, Investigations, etc., Essay IV; Jevons, Ch. XXV, "Tabular Standard," Nicholson, Ch. V, and Part II, Chaps. VII and VIII.

Gold and Silver before the Roman Empire.

The Bible and all earliest history show gold and silver in use. Gold of Ophir, silver of Tarshish. Enormous quantities amassed by Eastern princes. Produced by slave labor and capture, and not in obedience to "commercial demand." "They remained treasure; they did not become money." "They were distributed not by trade, but by war."

The Precious Metals under the Roman Empire.

Important facts.

- (1) By conquest the vast treasures of gold and silver were brought into the Empire.
- (2) The metals passed into circulation as money far more than before, creating a continuous and growing demand for them.
- (3) The mining industry was gradually broken up. This fact, together with the cessation of conquest, cut off sources of money supply.
- (4) Rapid decrease in amount of precious metals in use under Empire.

Precious Metals in the Middle Ages (476 A.D.-1492). "The Silver Famine."

Important Facts.

- (1) Cessation of Mining. "In this period, from about 480 to 670 or 680, the greatest diligence has been able to discover no trace in any author of the operations of mining having been carried on." (Jacob, Ch. X.)
- (2) Revival of mining after Saracenic conquests of eighth century, sufficient to keep the reduced stock from further reduction till discovery of America.

The Discovery of America. The Silver Age (1492-1848).

The silver mines of Potosi were discovered in 1545. It was mainly through Spain that the gold and silver of America at first found their way to Europe. From 1570 to 1640 was the period of greatest inflation. Estimated production of gold and silver during this period. Money fell to one-fifth its former value.

Effects in England of this Increase of Money-Metals.

- (1) Upon the land-owning class.
- (2) Upon agriculture.
- (3) Upon wage-earners.
- (4) Upon commerce.

The New Golden Age

Began with discovery of gold in California in 1848, Notwithstanding the enormous yield of the Californian and Australian mines, prices have risen far less from this inflation of the money-metal supply than from the silver three centuries earlier.

The World's Supply of Gold and Silver.

A new silver age began likewise in 1859, with the discovery of the Nevada mines. In 1889 the world's production of silver was \$158,759,468; of gold, \$120,971,514. Silver has been largely demonetized since 1870, through fear of excess of money metal. Opinions of Professor Shaler, of United States Geological Survey, and others, as to whether the present rate of production may continue. (Sen. Exc. Doc., No. 34, 50th Cong., App. C.) Amount of gold and silver used in the arts.

Questions for Discussion.

- (1) Did the falling prices of the later Roman Empire cause or hurry the decline of the Empire?
- (2) Why was the rise of prices from the Spanish imports of silver so much greater and more violent than the rise since 1848?
- (3) The value of money itself is variable from age to age. "If the measure shall have lost its measure, wherewith shall it be measured?"

The "Tabular" or "Multiple" Standard.

Grain, in some respects, is a more stable standard for long-time payments. The remedy proposed is the so-called "Multiple Standard,"—being a combination of several of the most stable products,—payment being made by the money value at the time of payment of the agreed number of units of this combined standard. The advantages of such a standard are great in long-time payments, but the practical difficulties have not yet been mastered.

LECTURE IV.

SUBSTITUTES FOR METALLIC MONEY. CREDIT-MONEY AND CREDIT.

References.—Jevons, Chaps. VIII, XV, XVI, XVII, XIX, XXIII; Smith, *Wealth of Nations*, Book IV, Ch. III, Part I; Nicholson, Ch. IV; Walker, *Money*, Ch. XV; James, "Banks of Issue" (*Lalor's Cyclo.*); Dunbar, Chaps. II, IV, VII; Mill, *Pol. Econ.*, Book III, Chaps. XI, XII.

It must be remembered that we treat merely the economic, not the moral, aspects of this question.

Origin of Credit-Money.

- (1) What makes any currency circulate is the confidence that each receiver of the money will be able to pass it on to another person without trouble.
- (2) The force of habit keeps worn coins circulating. Some instances of debasement of coin rest upon this fact. If the worn coin circulate as full coin,

why cannot the new coins be issued of equal weight with worn coins, yet of full face value ?

- (3) The necessities of small change early forced the issue of private "tokens" in England. James I and Charles I suppressed private "tokens" and granted monopolies. Vast over-issues of farthing tokens drove nearly all other coin out of circulation. "At last it came to be understood that the proper plan was to make the small coins of nominal value only, to suppress private issues, to strictly limit the issues by Government, and to make them legal-tender only for a limited amount." (Nicholson, p. 57.)
- (4) The practice of taking seignorage and this circulation of light and "token" coins have suggested the idea of "representative" money, of which "Paper" is the modern form. The Carthaginians and Chinese had leather representative money.
- (5) The next step is an inconvertible non-metallic currency. The Government "coins" paper into money. Credit, custom, and money-need are the foundation of a paper currency.
- (6) "Gresham's Law,"—that bad money drives out good money,—applied at first to light weight coin, applies equally to two currencies circulating together. A better statement would be, *given a superabundant mixed currency*, "the better money leaves before the worse."
- (7) The history of colonial paper money in the United States is the richest in interest and instruction. Secured and unsecured issues were tried. The colonies tested to the full the operation of Gresham's law. (See Lecture VI.)
- (8) Another form of credit-money, bank-notes, received its first systematic development in England. While in modern banks the function of note-issue has

become separated in theory, and to a great extent in practice, from the functions of deposit and discount, the earlier banking confused them. In England and America "Banking" privilege was long regarded as merely the right of note-issue.

Credit-Substitutes for Money.

Promissory notes, book-credits, and bills of exchange are of very ancient origin. A Babylonian tablet of some five centuries B.C. is a promissory note, renewed several times, and interest added as stipulated in the original note. Another transaction shows a book-credit where the price of a field is set over against the price of a slave and the balance paid in money. (Aus dem Babylon. Rechtsleben, pp, 13, 14. Kohler.) Paper money and bank-notes are merely forms of promissory notes. The use of any of these modes of deferring payment lessens the need for money. Their use did not become systematized until after the establishment of banks.

Organization of Credit. The Banking System.

Several of the ancient commercial nations had some form of banking, notably the Jews, Greeks, and Romans. No historical connection, however, between ancient and modern banks.

The first modern bank was the Bank of Venice, supposed to be in existence in 1157. Gilbart says it was a "corporation of public creditors." The Bank of St. George, at Genoa, called by Bagehot "a finance company," founded in 1407, was a similar institution. The Bank of England (1694) and the First Bank of the United States (1791) were in some respects of the same type.

The Bank of Amsterdam. Founded 1609. Necessitated by evils of light and clipped coin. Its "bank-money" practically only a system of transfer on the books of the bank of credited deposits of coin, the deposits remaining intact in the bank. Its relation to the city government. Its efficiency and influence. Its imitators.

Bank of Sweden. Founded in 1656. Issued bank-notes of modern type in 1658.

Beginnings of English Banking.

English Commerce in the Seventeenth Century. (1) Rivalry with Holland. (2) Internal disorders. Political and religious struggles. (3) Colonization schemes. (4) Chaotic state of the currency.

There was an unprecedented expansion of industry and commerce, in face of an utterly inadequate and chaotic currency, and an absence of any credit system. From the struggles of that century emerged alike the beginnings of the modern political system of England and the beginnings of the English commercial supremacy of the world.

During the Commonwealth a scheme for a bank was proposed, to rival Amsterdam, but was unsuccessful. The London goldsmiths as bankers. "Goldsmiths' notes" the first English bank-money. The Bank of England founded in 1694.

Development of the Banking System.

Importance of the modern banking system shown in its marvellous extension, and in the progressive refinement of its methods. Jevons (page 190) gives the following "development of methods of exchange":

"(1) Replacement of standard money by representative money.

"(2) Intervention of book credit.

"(3) The cheque and clearing system.

"(4) Use of foreign bills of exchange.

"(5) International clearing system."

To such an extent has banking usurped the functions of money, that about ninety-five per cent. in value of transactions are paid in checks, drafts, etc., leaving less than five per cent. for paper-money and less than one per cent. for coin. (J. H. Walker, *Money Trade and Banking*.)

LECTURE V.

THE PLACE OF BANKS IN THE MONEY SYSTEM AS SHOWN IN THE HISTORY OF THE BANK OF ENGLAND.

References.—Jevons, as in Lecture IV, also Chaps. XX, XXI, XXII, XXIV; Walker, Chaps. X, XI; Macaulay, *Hist. Eng.*, Ch. XX, "Bank of England," XXI, "Currency Reform;" Gilbert, Vol. I, §§ 1-6; Bagehot, Chaps. VII, VIII; Dunbar, Ch. X; Sumner, *Hist. Amer. Currency*, Part II, on "Restriction."

Founding of the Bank of England.

The Bank of England was "a Whig finance company" (Bagehot, p. 92). William and Mary needed a loan to carry on war with France. Under cover of an act laying certain tonnage duties on vessels, a banking charter was granted in 1694 to the subscribers to the loan under the name of "the Governor and Company of the Bank of England." The scheme was bitterly opposed by Tories and by private bankers and rival bank projectors. The powers of the bank were "to deal in bullion and bills, to issue notes, and to make advances on

merchandise." They loaned the government £1,200,000, which constituted their capital.

Was Alexander Hamilton's policy in the establishment of the first United States Bank a conscious imitation?

The Banking Functions exercised by the Bank of England.

- (1) The bank began as a financiering agent of the government.
- (2) The "giving of good money" not an object of the the bank, as of the continental banks. England restored her clipped and wasted coinage by the Recoinage Act of 1696.
- (3) It was a bank of deposit, notes being issued for deposits. The continental system of that period was to receive coins of all countries at bullion value and issue notes (certificates) for them, holding all the coin on deposit. English system, begun by the goldsmiths, was to trade with the deposits, holding only a reserve. The American coin certificates and bullion certificates a return to the old continental system.
- (4) It was a bank of discount.
- (5) It was a bank of issue. Part of its advances to the government were in its notes. Its first notes bore interest and were transferred only by endorsement. In 1697 it was given a practical monopoly and the right to issue notes to bearer. This is the real beginning of the "bank-note."

The Bank "Restriction" of 1797.

In danger of a French invasion, the English government, fearing exhaustion of the bank reserve, forbade payment in specie by the bank. This

"Restriction" continued till 1819. The over-issue of bank-notes gained large profits for the bank, and depreciated the notes. The most memorable contest in the history of currency was carried on in regard to resumption of specie payments.

The "Bullion Report" of 1810, the great monetary document in this discussion, holds,—

- (1) That if gold is at a premium in paper, the premium measures the depreciation in the paper. The paper is depreciated ; gold is not appreciated.
- (2) A continued drain of the precious metals from the country, aside from exportations to purchase food, pay armies, etc., is due to the presence of an inferior currency.

The plain remedy, then, according to the Report, was resumption. The Bank opposed this, and was successful. Resumption did not take place till 1819 ; but the Bank afterwards adopted the principles of the Report. In the mean time,—1816,—England had changed from her former silver standard to a gold standard.

The Bank Charter Act of 1844.

In 1826 the monopoly of note-issue by the Bank of England was restricted to a radius of sixty-five miles from London, and joint-stock banks legalized. The extension of bank-note circulation thus permitted led to another bitter controversy as to whether bank-notes could be over-issued under a free-banking system.

The Act of 1844 completely reorganized the banking system of England.

- (1) The banking department and the issue department of the Bank of England were completely separated.

- (2) The note-issues, without specie basis, of the Bank of England were limited to £14,000,000; since slightly increased.
- (3) No London bank, nor any bank chartered after the Act, was allowed to issue notes. Issues of country banks then existing were limited to ordinary previous circulation.

Summary.

- (1) The Bank of England, the first great bank to work out and maintain a system of note-issues based on the credit of the bank, without full coin or bullion guarantee.
- (2) It was the first great bank to work out and maintain a system of treating *deposits as loans*, and thus to trade with deposits beyond a prudent reserve.
- (3) The "restriction," with its controversies, have *made* the economic doctrines of the world in regard to the circulation of an inferior currency, particularly an irredeemable paper currency, by the side of a superior one.
- (4) The history of the bank since 1844 has shown how powerfully governments may influence the money market for good or evil.
- (5) The English currency to-day is dependent upon its great bank. The English ideal is a coin currency for ordinary transactions, and a note circulation for larger affairs. The £5 note is the lowest note; but the issue of £1 notes is a live question in England now.

LECTURE VI.

HISTORY OF AMERICAN CURRENCY.

References. —Knox, "Banking in the U.S." (Lalor's Cyc.), or his reports as Comptroller of the Currency (Finance Reports, 1875, 1876); Sumner, Hist. Amer. Currency; Walker, Ch. XII; Dunbar, Ch. IX; Upton, Money in Politics; Andrews, Part VI, Chaps. I, II, III.

American Coinage.

I. Colonial Period.

The coins consisted of a few English coins, chiefly silver shillings. Various foreign coins circulated at rates fixed by colonial Governments, and a few coins struck at mints set up in Massachusetts and Maryland. Origin of the "Dollar" and the various "Shillings."

II. Silver Period, 1792-1834.

The United States Mint was established in 1792, upon a plan of Hamilton. Jefferson, Robert Morris, and Gouverneur Morris had earlier devised a plan for coinage. Free coinage of gold and silver was authorized. Both were made legal tender in the ratio of 1 to 15. The amount of pure silver in the "Dollar or Unit," 371.25 grains, has never changed. Other silver coins, half-dollar, quarter-dollar, dimes, and half-dimes. Copper coins, cent and half-cent. Gold coins, eagles, half-eagles, quarter-eagles. Gold eagle contained 247.50 grains of pure gold. Gold was worth more than fifteen times silver, and would not stay in circulation.

III. *Gold Period, 1834-78.*

The law of 1834 made gold eagle 232 grains of pure gold; gross weight 258 grains. Ratio of gold to silver was fixed 1 to 16. Silver driven from circulation in its turn.

In 1837 gold and silver coins alike were changed to a standard of nine-tenths fine. This reduced the gross weight of the silver dollar to $412\frac{1}{2}$ grains, and made the gold standard 232.2 grains fine.

In 1849 the coinage of gold dollars and double eagles was authorized, and in 1853 gold three-dollar pieces.

In 1853 silver fractional currency was over-rated in coinage to keep it in circulation.

In 1873 the silver dollar was dropped from the list of coins, so that gold only had free coinage, and the *gold dollar was made the unit of value*. Trade dollar of 420 grains, nine-tenths fine, was authorized. Up to this time only a little over eight million silver dollars had been coined.

IV. *Don't-know-where-we-stand Period, 1878-92.*

"Bland" silver bill. Revenge for the demonetization of 1873. Restored the old silver dollar and its legal tender quality. Provided also for issue of certificates for silver dollars deposited. In 1882 gold certificates were authorized, and in 1890 certificates for bullion deposited.

American Bank-Notes.

I. *Colonial Period.*

A "Bank" was a batch of paper money. It was an era of "land-banks" in Europe and America. Compare John Law's scheme for a "land-bank" with John Colman's.

II. "*Free Banking*" Period. *Revolution to Civil War.*

After the Revolution a mania for banking spread through the country. Banks freely established under State authority issued notes in reckless competition.

Bank of North America. A scheme of Robert Morris to obtain supplies for the army. Chartered by Congress in 1781. It was in some sense a bank of the United States.

First Bank of the United States. Devised by Hamilton. Chartered in 1791. Charter expired in 1811, and not renewed. After this the State banks were more reckless than ever in their note issues. In 1814 there was a general suspension of specie payments by these banks, followed by still wilder note issues.

Reaction led to the chartering of the Second Bank of the United States in 1816, charter to expire in twenty years. President Jackson made war on the bank. After the destruction of the bank, State-bank issues were more disastrous than ever.

The "Suffolk System" of New England (1825), and the "Safety Fund Act" of 1829, and "Free Banking Act" of 1838, in New York, were partially successful in restraining the evils of irresponsible "wild-cat banking." The United States, tired of depositing its funds in treacherous State banks, established the Sub-Treasury system (1840-46), which still exists.

III. *National Bank Period.*

The establishment of this system (in 1863) was at once a fiscal scheme to procure a market for United States bonds, and an attempt to give order and security to bank-note circulation.

The essential feature is that note-issues are secured by deposit of United States bonds with the National treasury, and State-bank issues are taxed out of circulation.

The new office of United States Comptroller of the Currency was created at this time. In 1882 another law gave the right of renewal to National Bank charters.

The results of the law have been,—

- (1) To give national circulation to bank-note issues at their face value.
- (2) Absolute security as to ultimate payment of the notes and practical convertibility.

Government Paper Money.

I. Colonial Government Issues.

These began in Massachusetts in 1690 to pay the expenses of the Canadian expedition. All the colonies indulged in the issue of "bills of credit." Over-issue and depreciation were the rule everywhere.

II. Continental Congress Period, 1775–89.

Depreciation of the first issue made in 1775 reached 1000 to 1 in some parts of the continent. In 1780 redemption interest-bearing notes were issued for these at the rate of 1 for 20.

III. Treasury Note Period, 1789–1861.

Constitutional provisions as to "bills of credit."

The people of 1789 had suffered too severely from over-issues of paper money to willingly give such power to the government, and until 1812 no notes were issued.

Interest-bearing notes of various forms were issued during the War of 1812, the financial crisis of 1837, the Mexican War, the financial crisis of 1857, and the Civil War.

IV. "*Greenback*" or "*Legal Tender*" Period.

Some of the treasury notes previously issued were receivable for all *public* dues, some were payable *on demand*, but the "*greenbacks*" issued under the Act of February 12, 1862, were the first notes of any kind made "*legal tender*" in the payment of debts between man and man. They were not receivable for duties on imports nor interest on the public debt. The law authorized the issue of \$150,000,000. They were justified as a necessity of war.

Two other acts, June 11, 1862, and March 3, 1863, each authorized the issue of \$150,000,000 more. The highest actual amount issued fell a little short of the authorized \$450,000,000.

Resumption.

In 1875 an act was passed requiring payment of the legal tender notes in coin after January 1, 1879. On the latter date there was no demand for redemption. The legal tender notes were already at par, and were preferred to gold. They have remained practically convertible.

The legal tender controversy—especially as it centres in the "*Legal Tender Cases*"—is an interesting topic for study. (See Sherman's *Speeches on Finance and Taxation*, and Knox, *United States Notes*, Ch. XI.)

Present Currency of the United States:

Gold coin.—Double eagle, eagle, half-eagle, quarter-eagle, dollar. Unlimited legal tender.

Silver coin.—Dollar (unlimited legal tender), half-dollar, quarter, dime, and half-dime (limited legal tender).

Bronze and nickel coin.—Five, three, and one cent. "*Greenbacks.*"—Legal tender.

Gold certificates and silver certificates.—Issued on the deposit of gold and silver coin. Not legal tender.

Silver bullion certificates—“Treasury Notes,” under act of 1890. Legal tender.

National bank notes. Not legal tender.

LECTURE VII.

HISTORY OF MONETARY THEORIES.

References.—Andrews's Inst., Part IV, Ch. III; Poor, Money: Its Laws and History, pp. 62-429. (Select such parts as bear on the writers mentioned. This book is one to be used with caution.) Böhm-Bawerk, Capital and Interest, Chaps. I, II; Ashley, Economic History, Ch. III; Smith, Wealth of Nations (Preface to Bohn's Edition), also Book IV, Ch. I. Colwell's Ways and Means of Payment, reviews monetary theory briefly in different parts of the work.

Theories of money are among the oldest of purely economic theories. Three main lines of theory,—(1) nature and functions of money, (2) interest, (3) value of money. The use of money well established before any conscious theory. Certain moral and legal ideas concerning money before its economic nature was made subject of thought.

I. Oriental Ideas.

The Mosaic law (Circa, 1300 B.C.) forbids lending on interest to another Hebrew: "Usury of money, usury of victuals, usury of anything that is lent upon usury." (Deut. xxiii, 19.) The law permits lending on interest to strangers. The Babylonian tablets show lending on interest to have been common.

II. Græco-Roman Ideas.

Aristotle's (384-322 B.C.) the typical views, partly economic, partly moral. He regarded money not as the same thing with wealth, but only the means

of effecting exchanges. Money in its nature is "barren," hence interest is contrary to nature and unjust. Here emerges a theory as to the economic cause of interest, and based upon it a moral theory of distributive justice. This controversy upon interest, both in moral and economic aspects, has lasted to our time. Romans added nothing to economic theory. Both Greeks and Romans practised loaning at interest, although their writers condemn it.

III. Ecclesiastical Ideas.

Early Christians included strangers in the humane prohibition of interest. Thomas Aquinas (thirteenth century), typical of the church in his doctrines, combines the economy and natural law of Aristotle with the Mosaic and Christian ethics. Reason and Revelation against interest. Adds the argument of "consumability" of money. Also, time is not to be charged for, because the common property of all.

IV. Merchantilist Ideas (1500-1700).

Since the Crusades a new spirit. Enterprise, discovery, and commerce. Feudal payments in service and kind changed into money dues and taxes. Rise of prices from influx of American silver. An age of commerce. Former ages had despised commerce and exalted agriculture. Money a necessity in commerce. Became at once the means and the end of trade. Central idea of merchantilists,—*Money is synonymous with Wealth*. "Balance of Trade" theory follows from this. In Italy, Holland, England, and elsewhere, views on interest changed. In 1546 interest legalized in England at rate of ten per cent. Writers defend interest.

Money no longer barren. Calvin almost grasped the true idea.

Typical merchantilists,—Jean Bodin (1578), Antonio Serra (1613), Chrétien de Watteville (1615), Thomas Mun (1621), Schröder (1686). In France Colbert, and Cromwell in England, *practised* the merchantilist theory. Survivals of the theory and practice in the nineteenth century.

V. Theories of the Capitalistic Period.

The merchantilists had no conception of "capital." Interest to them was payment for the loan of money. Grotius, Locke, and others, in the seventeenth century, had justified interest by the analogy of hire paid for other goods and rent for land. David Hume (1767) taught the distinction between *Capital* and *Money*, and that interest was paid for capital, which is productive, and not for money.

From this time there are two problems more or less confused in discussions on interest. (1) A problem of Economic Production,—viz., what is the source of the productivity of capital? (2) A problem of Economic Distribution,—viz., who obtains the product of capital?

The *motif* of the discussion a twofold one: (1) Scientific; an economic stand-point. (2) Social justice, being the nineteenth century form of the old usury controversy; an ethical stand-point. Both these motives appear in most discussions. Interest, henceforth, strictly not a question of *money*, since not money, but *capital*, yields interest.

With growth of capital, and even before the distinction had been drawn, in theory, between money and capital, another line of monetary questions became prominent.

I. Seigniorage.

Shall the government keep out of the coin enough bullion to pay cost of coinage, or even to pay a profit? Discussed before 1382 by Oresme; in 1526 by Copernicus; by nearly all writers on money since the seventeenth century.

II. Recoinage of Old and Clipped Coins.

Shall the old standard be restored at the expense of the government, or shall the standard be debased to level of the light coin?

The theory-making controversy was the recoinage in England in 1696. Lowndes the champion of lowering the standard, Locke and Sir Isaac Newton the triumphant defenders of "ancient right standard." This was one of the greatest victories for good money in modern history.

III. Theories of Bimetallic Circulation.

- (1) Standard and "token" coins. (Nicholson, Ch. IV.)
- (2) Silver or gold standard, or bimetallic standard.

Theory-making Laws or Controversies. England.—Coinage law of 1666; silver standard; free and gratuitous coinage of gold and silver; recoinage of 1696. Report of Sir Isaac Newton, 1717. The recoinage law of 1816 is a landmark in the history of bimetallic theory. This law changed the coinage of England from a silver standard to a gold standard. Previously, gold had been full legal tender at a legal rate to silver. The law demonetized silver, making it a token coin. England has since been a gold monometallic country, as opposed to the bimetallic policy of France, and England's policy has thus far succeeded. All through the eighteenth century the market rate of silver seems to have been above the English mint rate, and Eng-

land lost her silver circulation except coin worn down to the gold level. Gold had become the practical money of England. The value of silver falling, people began to bring it to the mint. The coinage of silver was forbidden in 1798. Lord Liverpool, in his *Coins of the Realm*, argued that gold and silver could not be maintained concurrently in circulation as full money; that gold had become the practical standard money; that, therefore, the best policy was to adopt a gold standard.

Continental Europe.—France in 1785 and by the law of 1803 had adopted a ratio of $15\frac{1}{2}$ to 1 between silver and gold. This policy, persistently maintained until after 1873, has been the great counter argument to England's policy. In 1857, by the Treaty of Vienna, a Germanic monetary union was formed, followed by the Latin Union of the Treaty of Paris, 1865. In 1873 came the German demonetization of silver, followed by suspension of silver coinage by the nations of the Latin Union.

United States.—The ratio adopted in 1792 was 15 to 1. In 1834 it was made 16 to 1. Before 1800 there seems to have been little thought anywhere of using only one metal. Gold monometallism was not adopted in the United States until 1873, and was partially abandoned in 1878. Both theories are struggling in the "free coinage" controversy of to-day.

IV. Theories of Bank-Note Currency.

Began mainly in discussions of the seventeenth century preceding the founding of the Bank of England. The most notable controversy, however, was over the "Restriction" (1797–1819). Ricardo's theories have been dominant. The Bullion Report contained his ideas substantially. The

great question was as to whether the high price of bullion was due to a depreciation of bank-notes. This controversy, as well as the later controversy between the "Banking Principle" and "Currency Principle," has been considered elsewhere (Lectures V-IX). In America, the theory of unlimited and unregulated issues prevailed for a long time, gradually meeting more opposition, until in the National Bank Act the theory of government regulation was adopted.

V. Theories of Irredeemable Paper Money.

- (1) The "Land Bank" theory of John Law and others was the rival of the banking theory established in the Bank of England. It was imitated by Colman in Massachusetts, and in the issue of the French Assignats of the Revolution.
- (2) "Fiat" money. "Coining the credit" of the nation. Prevalent theory in the American colonies, and in Austria since 1762. Since the Civil War it has been, in the United States, the theory of a strong party.

These questions only varying forms of the fundamental problem, the *Value of Money*. One theory holds that the money material must have value aside from its use as money. The other theory holds that money is only a ticket of transfer, and need have no value as a commodity. Under differing conditions those upholding these theories have received various names,—“contractionists,” “hard-money” men, bank-note issue “monopolists,” are “value” theorists. On the other hand, “inflationists,” “soft-money” men, those who favor “free banking,” “greenbackers,” cling to the “ticket” theory. The controversy is as old as monetary science.

LECTURE VIII.

VALUE AND DISTRIBUTION OF MONEY. RELATION OF THE QUANTITY OF MONEY TO NATIONAL PROSPERITY.

References.—Jevons, Chaps. XVII, XXVI; Walker, Chaps. IV, V; Mill, Pol. Econ., Book III, Chaps. VII, VIII, XIX, XX, XXI, XXII; Andrews's Inst., Part III, Ch. III, § 85; Nicholson, Money, etc., Chaps. V, VI, VII; Colwell, Ways and Means of Payment, Ch. XIX.

Much that is written of money applies actually to metallic money only. The vast extension of credit money and credit in our *practice* has far outrun our *theory*.

The great law of value of money is the law of *demand and supply*. True of metallic money, of bank-notes, of government paper money.

Demand for money tends to increase from following causes:

- (1) Increase of products, giving consumer increased purchasing power, and producer more products to sell.
- (2) Intensified spirit of enterprise, from pressure of want, new opportunity for industry, etc. Producer seeking capital.
- (3) Extension of commerce.
- (4) Increase of population.
- (5) Decrease in use of credit.

Supply of Money.—Causes tending to its increase.

- (1) Increased production of precious metals.
- (2) Decreased use of gold and silver in the arts and in hoards.

- (3) Legal monetization of a new material.
- (4) Increased rapidity of circulation.

Law of Value of Money.

Value of money varies directly as demand and inversely as supply. With a given supply, increase in demand raises the value of money, and *vice versa*. With a given demand, increase of supply decreases value, and *vice versa*.

Can Law create or change Value in Money?

- (1) Governments can influence the demand for money, as by making it legal tender, and thus alter its value.
- (2) Governments can change the value of money by increasing or decreasing the supply.
- (3) The value thus given to money by law is an arbitrary value, and does not depend on the value of the material of which the money is made. United States greenbacks are an example of this.
- (4) The value of money being a question of the relation between the quantity of money and the amount of money-work, there is no limit, *theoretically*, to the value which a government might give to its currency *if it had a monopoly of money supply*.
- (5) But no government has a monopoly of money supply. Money demand and money supply are international, and the laws of any single country cannot control them. This places practically very narrow limits within which legal value can be given to a currency in a country.

Value and Price.

Price is the money-value of goods. Wheat at \$1.00 a bushel means that the money-value, *i.e.*, the price of one bushel of wheat, is \$1.00. If the value of

money is increased, one bushel of wheat is worth less than \$1.00; *i.e.*, increasing the value of money lowers prices, and decreasing the value of money raises prices.

International Distribution of Money.

With international trade, prices are fixed by international demand and supply,—*i.e.*, in a world-market. If from any cause, such as the discovery of new mines of gold or silver, increasing the quantity of money, prices are higher in the United States than in foreign countries, foreigners will increase their sales here and diminish their purchases; that is, our imports will tend to exceed our exports of goods, and we shall have to send money abroad to pay the balances. This will continue until our excess of money is drained off to foreign countries and equilibrium in prices is restored. If, again, our prices become relatively low, the golden current sets towards our shores until once more the general level is reached. This illustrates what is called the “automatic movement” of money in foreign exchange. *Price* is the regulator of this movement.

So long as money was regarded as synonymous with wealth, as in the Merchantilist theory, a “balance of trade,” showing excess of exported over imported goods and bringing in money, was looked upon as a national blessing. Although such a “balance of trade” really tells nothing as to the prosperity of a country, traces of the old idea still remain. And in fact, in many emergencies, a flow of gold from the country may be a serious thing, but this for other reasons.

Bullion Export and Import.

The precious metals are the only *international* money. Hence, so far as bills of exchange do not settle international balances, gold and silver must be used. The *law-made* value of money cannot be exported. *Bullion-value* alone can move from country to country. Hence the advantage of a national currency resting on the bullion value of the precious metals.

Relation of Quantity of Money to National Prosperity.

A nation needs just that amount of money which will best facilitate the exchanges necessary to the highest development of industry and commerce. A calculation as to the exact amount needed would be as futile as a calculation of the number of miles of railroad that a country needs.

But upon this subject, as we have seen, there are always two opposing schools.

I. Typical Arguments of the More-Money School.

- (1) With increase of population more money needed.
- (2) Increasing industry demands more money.
- (3) The enterprising class are the borrowing class, and an increasing currency, by rendering debt-payment easier, promotes enterprise.
- (4) More money means higher prices, high prices mean large profits to producers, and the prosperity of producers is national prosperity.
- (5) More money means higher wages to the laborer.
- (6) Periods of rising prices have been periods of unusual enterprise, as after the silver of Potosi inflated the currencies of Europe.
- (7) The more money a nation has the more wealth.

II. Typical Arguments of the Less-Money School.

- (1) Increase of money means a larger amount of national wealth needlessly devoted to the purpose of exchange.
- (2) Increase of money, by rendering debt-payment easier, defrauds creditors.
- (3) Contracting currency discourages unsafe speculative enterprises.
- (4) Low prices benefit consumers.
- (5) A contracting currency promotes the extension of legitimate credit by encouraging capitalists to lend.

III. Important Facts.

- (1) Money is not the end, but only the instrument of trade.
- (2) A status of general high prices, or a status of general low prices, is equally consistent with national prosperity.
- (3) A change from more money to less, or from less to more, alters the conditions of every contract for the payment of money, producing hardship to the debtor in the one case, and to the creditor in the other.
- (4) Stability of prices is the ideal sought. With expanding or contracting industry, stability of prices can be maintained only by a corresponding change in the amount of currency.
- (5) Every people has its standard of money supply. A people like the French, hoarding their cash, require more money per capita to carry on a given trade than a credit-using people like the English.
- (6) An excessive paper currency or an excessive debased coin currency, by driving the best money from the country, puts a nation at a disadvantage in international trade.

LECTURE IX.

PAPER MONEY. INCONVERTIBLE AND CONVERTIBLE.

References.—Walker, Chaps. VIII–XII; Jevons, Chaps. XVI, XVII, XVIII, XXIV; Andrews's Inst., Part III, Ch. II; Part VI, Chaps. II, III; Nicholson, Money, etc., Part II, Ch. II; Dunbar, Chaps. V, IX; Knox, United States Notes.

Government Paper Money.

There are various kinds, as seen in the history of American currency. They are all promises to pay issued directly by the government. They may be payable on demand in coin, or be convertible into government bonds, or be a claim on public lands, or upon some special reserve held by government. They may even bear interest. They may be received by the government in payment of taxes, of customs duties and public dues generally, and they may be made legal tender in payment of private debts. They may be destroyed when once they find their way back to the treasury, or may be re-issued. If issued by a government bank in response to commercial demand, and made convertible, they partake of the nature of bank-notes rather than government paper money.

The typical government paper money is that issued simply upon the credit of the government, based upon no special fund and given a forced circulation by being made legal tender, and kept in circulation by re-issue. Such is the so-called "Fiat-money."

Motives for the Issue of Government Notes.

- (1) Some sudden emergency, political or military, calling for large government expenses. An issue of paper money then is a forced loan. The alternative of the government obliged to borrow under such circumstances would be a sale of government bonds.
- (2) Under similar circumstances, or upon an unexpected deficit in the treasury, they may be issued redeemable at a near fixed date, to anticipate the receipt of taxes. Such notes often bear interest, and are practically a kind of government bond.
- (3) A popular demand for an increase of currency may lead to issues of paper money. "Political money" is a term often applied to government paper. Such demand may arise from an enterprising people in the face of unusual opportunity for profitable industry, but too poor to make use of the opportunity, and under the mistaken idea that what they need is *money*, while their real need is *capital*. Such demand may also arise from a debtor class seeking to make the payment of their debts easier.
- (4) Another motive is economy. The loss of interest on the value of the precious metals used in coin is enormous. It is argued, that if the same money-work can be as well done by a cheaper material it is sound finance to use the cheaper material.
- (5) The convenience of paper money.
- (6) Scaling down of debts owed by the government is sometimes a motive. But the vice of paper money is *over-issue*. There is nothing essentially fraudulent in a government use of promises to pay. A government need not resort to paper money to defraud its creditors.

Theory of Government Paper Money.

The issue of paper money is based on the same principle as seigniorage. It has been defined as money on which the seigniorage is 100 per cent. Debasement of currency does not mean necessarily depreciation. Government, it has been seen, can keep up the value of money (1) by influencing demand, as by making the money receivable in public dues, or making it legal tender, (2) by limiting the supply.

Economic Effects of Government Paper Money.

The economic effects of inflation and contraction of the currency have been already discussed. (Lecture VIII.) It remains to consider the effect of peculiarities in government paper money.

- (1) Government paper money, unless convertible, *i.e.*, unless paid in coin on demand and not re-issued except on receipt of coin, does not expand and contract in accordance with the commercial demand. This is not an argument against a government paper money in the hands of an administrative department of the government with discretionary power, as, for example, a properly constituted government bank. That is a separate question. Stability of prices cannot be maintained by a currency fixed in amount.
- (2) The "credit of the government," which is the basis of a paper currency, is an uncertain thing. The best and most honorable government in the world may be overthrown. In a democratic form of government, with the currency a matter of frequent legislative regulation, paper money introduces an additional element of uncertainty, and uncertainty disturbs the industry and commerce of the people. Sudden expansion of the currency

works loss to creditors. Sudden contraction of the currency works loss to debtors. The fear of such sudden changes is itself a disturbing force.

- (3) One of the chief difficulties in regard to government paper money is its effect on foreign trade. Not being exportable, it leaves a smaller amount of coin in the country than would otherwise circulate. This becomes a matter of great danger at times, when there is an unusual demand for foreign shipments of money. It may thus be a real menace to foreign trade, and hence to domestic industry and to financial soundness, even when specie payments are ordinarily maintained. There is always the danger of suspension through excess of paper money.
- (4) These difficulties in the way of government paper money, however, are not to be regarded as insuperable. An amount of paper money, safely limited, with immediate redemption amply provided for, issued by a government politically stable, and administered with honor and ability, may not only work no harm to the industry of the people, but may be a positive and gainful convenience.

Coin and Bullion Certificates.

There is a peculiar class of government notes which aims to secure the conveniences of paper currency and the security of a metallic money. The United States have made the greatest use of these notes. They are certificates issued for coin or bullion deposited with the government and held on deposit. It is practically a metallic money, and rests on no special theory. It effects no economy other than convenience.

Bank-Notes.

These are promissory notes of a banking firm or corporation payable to bearer on demand, in coin, and circulating as money. They are theoretically convertible, but sometimes become practically inconvertible. When inconvertible, the principles of their circulation are like those of government inconvertible paper.

Convertible Bank-Notes.

The chief questions involved are as to the policy of limitation of issues and as to methods of securing issues.

(1) *Limitation of Issues.*

The famous controversy in England which led to the Charter Act of 1844 turned on the question whether really convertible notes could be issued in greater amount than the coin which would have circulated. The "Banking Principle," championed by Mr. Tooke and others, was that really convertible notes acted in all respects like coin, and could not be issued in excess. The "Currency Principle" was advocated by Lord Overstone and others, and held that, under a system of free banking, over-issue is possible and likely to occur, inflating the currency. In England, the principle of limiting the issues was adopted in the Bank Act of 1844. A different application of the same principle obtains in this country under the National Bank system. Under present banking methods, however, the bank-note is losing its relative importance, through the enormous growth of the deposit and check system. The more vital question in banking is the question of reserves.

(2) *Securing of Issues.*

Where governments allow banks to issue notes, they usually require special security for notes. There are several methods :

- (1) A coin reserve.
- (2) A pledge of property.
- (3) A combination of reserve and pledge.

LECTURE X.

THE BANKS AND THE GOVERNMENT.

References.—Jevons, Chaps. XVIII, XXII, XXIV, XXV; James, "Banks of Issue" (Lalor); Dunbar, Chaps. II, IV, V, VIII, IX; Andrews, *Honest Dollar*; Publications of Amer. Economic Association, Vol. IV, No. 6.

The relation of the State to trade is a matter in regard to which few, if any, general rules can be laid down. The trade functions of governments vary in different countries and with every generation. To each special problem a special answer must be sought.

The State and Coinage.

By a sort of common instinct, the highest governing power in every country has claimed and been allowed to exercise the right of coinage, of regulating the issue of the money of the nation. This instinct is undoubtedly the result of a long experience, which the race has well-nigh forgotten, of the evils of private coinage.

• **Paper Money as a Government Prerogative.**

It was a natural and easy step from the regulation by the State of coined money to the regulation of its

paper representatives. There seems to be little question of the political right of governments to issue directly its paper promises for circulation as money. The disputes over the right of the United States to issue paper notes arose from the peculiar origin of our federal government. It was a mere question of the interpretation of the Constitution. But a political right does not necessarily carry with it an economic justification.

The State and the Banking System.

With the development of the modern system of organized credit, supplanting the actual circulation of money to a vast extent, the question takes a new form and becomes more complex. A simple coin currency, authenticated by the sovereign power, easily circulates in all the channels of trade, —it comes and goes at command. The same could be said of a good government paper money. But organized credit is not so mobile. Unless properly organized, it may prove a hinderance, not an aid, to commercial progress. What shall be the relation of the State to the banks? Free banking? State banking?

Banks of Issue and Banks of Deposit.

The development of the deposit and check system is one of the most notable features of modern banking. It has come to be more important than the note-issue, both as a source of profit to the banks and as a substitute for money payment. Note-issue was an earlier development in banking, and many writers claim that note-issue is no longer a legitimate banking function; that banks are the markets for local and temporary credit alone; that it was to this end that banks formerly issued

notes, and that the deposit and check system now serves this purpose better.

The State and Bank-Notes.

A bank-note circulates as money. It will not circulate beyond the limits of the credit that guarantees it. The old system of local bank-notes under "free-banking" was disastrous. The notes were discredited where the bank was not known. The guarantee of notes should be as wide as the circulation. If a national circulation is desired for the notes, the notes should have a national guarantee. With the modern developed system of deposit and discount the needs of local credit can be met. With the better means of transportation of our age there is a growing reason for a national, not a local, circulation for bank-notes, as for all other money. How shall this national guarantee be given?

Government Monopoly of Note-Issue.

The answer to this question has been substantially the same in the chief commercial nations. "Free-banking" in the old sense has been abandoned. Private note-issues have been practically destroyed. A monopoly system under government supervision or control has been established. In England, the Issue Department of the bank is virtually a government institution intended to monopolize the note-issue. The Reichsbank of Germany, under the controlling hand of the imperial government, has dealt the death-blow to other bank issues of notes. The French government regulates note-issue in the Bank of France. The National Bank system of the United States, while giving no one

bank a monopoly of note-issue, yet creates a government monopoly in the system, and gives the government guarantee to the issues.

Motives for Government Monopoly.

- (1) **Fiscal.**—The great banking systems of the world have been founded by government. Modern States are great borrowers, and must have a market for their credit instruments.
- (2) **Political.**—Governments have always appreciated the advantage of having the interests of the classes financially powerful united with the interests of the government.
- (3) **Industrial.**—The government is the largest industrial concern in a country, engaging in more enterprises, employing more men, with larger expenditures and larger receipts, than any other corporation or system. Governments dislike banking with strictly private concerns. It is a business advantage for a government to manage its own funds.
- (4) On the part of the financial leaders in the country there is an advantage in having this alliance with the government. Their influence with the government is more powerful, their grasp upon the money market more firm, in financial straits they can rely to some extent on government aid. Reckless competition in note-issue has been proved ruinous.
- (5) Unity and correlation of the banking system are accomplished,—a great desideratum in these days of quick transit, quick transportation, and an unlimited market.
- (6) Concentration of money and credit is rendered more effective and safer, having the government interests connected with the interests of capital.

Tendencies of the Time.

It is not probable that we have reached the final development. The present appears to be a transitional period.

- (1) There is a growing tendency to divorce note-issue from the deposit and discount functions of banks.
- (2) Countries where the deposit and discount functions are most highly developed, as England and the United States, show a relatively decreasing use of bank-note circulation.
- (3) There is at the same time a growing demand for paper money in some form, and particularly for paper of small denominations.
- (4) From one point of view there seems to be a tendency towards the extension of the government monopoly of note-issue, and towards placing this monopoly more directly in the hands of the government. The ideas emerging here are, that note-issue is essentially a part of the general circulating medium, and should be in government hands, like coinage; while the purposes of local credit are served by the extension of the deposit and check system of private banks.
- (5) The increasing use of savings-banks and like institutions puts into the hands of the wage-earners the advantages of the credit system.
- (6) The growth of trust companies shows a tendency towards a more secure concentration and effective organization of credit under private systems.
- (7) From another point of view, then, there is a tendency towards the doing away with the necessity of governmental organization of credit in every form, by making it safe and easy for all classes to make use of credit through the operations of private banking.
- (8) One theory claims that, since the State does not

control the expansions and contractions of trade, therefore the expansions and contractions of money and credit should be left to the operations of commercial demand and supply through freely acting private agencies.

- (9) Another theory claims that an elastic system of bank-note issue can be best secured by some system, like the present national banks, freely acting within prescribed governmental limits, and having the hand and faith of the government behind it.
- (10) Another theory claims that this desired stability of prices can be best secured by leaving to private banks the ordinary banking functions, placing in government hands the regulation of the entire currency, including paper money of all forms, and through the agency of a government commission measuring the changes of price and correspondingly expanding or contracting the currency.
- (11) No one can safely prophesy the outcome of these conflicting tendencies. It is hardly probable, however, that governments will soon give up the political advantages of controlling the bank-note circulation.

LECTURE XI.

THE "BATTLE OF THE STANDARDS." BIMETALLISM. THE SILVER QUESTION.

References.—Jevons, Chaps. VIII, IX, XII, XIV; Walker, Chaps. VI, VII; Andrews, Part III, §§ 77, 87; Part VI, §§ 134, 135, 136, 142-145; Nicholson, Ch. VIII, Part II, Chaps. IV, V, VI; Laughlin, Chaps. I, II, XIII, XIV.

This question of the standard is a more vital one now than ever before, owing to the enormous expansion of industry in this century, the development of transportation and credit systems, and the growing internationalism of trade. The great discoveries of both gold and silver since 1848 have intensified the interest. The change by England to a gold monometallic standard in 1816, and the French adherence to a bimetallic policy since 1803 (at the ratio 1 to 15½), have been already noted. It remains to state the issue between the single and the double standard theories.

The Silver Question in the United States.

This, so far as it is a scientific and not a political question, is one phase of the bimetallic controversy. "Free silver coinage" in the United States means bimetallism, and bimetallism in its most difficult form. Under the present silver law we have a gold standard, using silver only as an accessory to gold. "Bimetallic money is money formed by opening gold and silver both to free coinage, and making each an unlimited legal tender at a certain perma-

nent legal value-ratio to the other." (Andrews's Institutes, § 77.) We, therefore, merge this question in the larger one of

Bimetallism.

The advantages claimed for the bimetallic scheme are :

(1) Greater stability in the standard of value. The two metals held together at a fixed ratio will respond far less violently, than would either alone, to any forces making for a change in value. (2) A more adequate and convenient supply of money. Gold alone is not enough to furnish the basis of the world's exchanges. (3) A par-of-exchange between gold countries and silver countries. Nearly two-thirds of the world's population are silver monometallists, one-sixth are gold monometallists. Trade is much obstructed by the uncertainty of foreign exchanges where the value of gold in silver is fluctuating.

The monometallists, as a rule, do not deny these advantages. They attack the practicability of the scheme. They urge: (1) That a fixed ratio cannot be maintained by law. The two metals, having different sources of demand and supply, will fluctuate in value along differing lines. Their relative value is a result of natural, not legal, causes. (2) That, as a consequence, a nation will practically have only one standard at a time, and that standard the cheaper metal, while the undervalued metal, obeying Gresham's law, will go to other countries. (3) That gold is preferred in wealthier nations, and is less unstable in value than silver, and furnishes an ample basis for the credit system of the chief commercial nations. (4) That the two metals, so far as they could be held together, would feel the shock of any tendency in either metal to change in value,

and the value of the money standard would thus fluctuate more often.

National Bimetallism.

Complete bimetallism as the policy of a single nation has been virtually abandoned. The experience of France shows how far the action of a single nation can go to hold the metals near a fixed ratio, in spite of a vast increase of one metal in quantity. For seventy years (1803-1874) the mint of France, coining alike gold and silver freely at the ratio of 1 to 15½, held them near that ratio. The gold discoveries of 1848 and 1851, flooding the world with gold, only caused a slight premium on silver; both metals falling in value together. So long as France *maintained* free coinage of both metals, the ratio could not greatly vary.

This success was largely due to the equilibrium of demand for gold and silver between the nations. Germany, having a silver standard, wanted silver; England, having a gold standard, wanted gold. When, from 1871, Germany and other European States and the United States demonetized silver, thus causing a sudden fall in demand for silver and rise in demand for gold, France suspended silver coinage. This was followed by a fall in the value of silver, which in a few years reached about twenty-five per cent.

This experience seems to show that the value of a commodity, existing in quantity vastly greater than the annual production, responds much more readily to changes in demand than in supply. It furnishes the bimetallist with an argument, since law is more potent in acting on the demand for gold and silver than on supply. The experience of France, however, does not prove bimetallism practicable for

one nation. With both England and Germany against her, France failed even in alliance with the other states of the Latin Union.

International Bimetallism.

The bimetallists take refuge in another plan,—international agreement between the chief commercial nations to carry out a bimetallic policy. The International Monetary Conference of 1878 was an attempt towards such an agreement, as was also that of 1881. The argument is, that while one nation cannot successfully open its mints to the free coinage of both metals as legal tender money at a constant ratio without being flooded with the cheaper metal, yet the plan is perfectly practicable if attempted by a sort of *international gold and silver trust* formed by the governments of the principal commercial nations. Such a combination would monopolize the supply of the precious metals and control the demand. Gresham's law, it is claimed, could not operate, for the dearer metal would have nowhere to go, and the lack of demand would bring its value down again.

If such a combination could be maintained and could practically monopolize the supply of gold and silver, it would seem that a ratio fixed by law could be maintained within given limits. Without such an agreement, no nation is powerful enough to maintain the policy.

The demand of India and the East generally would have to be reckoned with, as well as the demand for consumption in the arts.

Political Aspects of Bimetallism.

- (1) It is argued by some bimetallists that England's policy has been dictated by her position as a great

creditor nation, unwilling as such to favor any increase in the world's supply of money, lest the value of her debts should be cut down. It is also argued that England favors monometallism because monometallism means cheap silver, and cheap silver makes a profitable export to India in payment for Indian goods. Whatever her motive, England clings to her policy.

- (2) Many writers on this question who theoretically favor bimetallism argue that an international agreement is practically impossible, and that hence bimetallism must be given up.
- (3) In the United States, the silver-mining industry creates a sentiment in favor of restoring silver to its former equality with gold. The United States as a nation have championed the plan of international bimetallism, and a strong party in the United States advocates national bimetallism as a policy for this country. Witness the "Free Coinage" agitation in the present Congress.

LECTURE XII.

MONETARY PANICS.

References.—Jevons, Chaps. XXIII, XXIV; Walker, Chaps. V, XI; Andrews, Part III, §§ 88-90; Dunbar, Chaps. VI, X; Bagehot, Chaps. II-VII; Willson, Currency, Chaps. XXVIII-XXXI; Wells, Recent Economic Changes, Chaps. I-IV; Patterson, Science of Finance, Chaps. X, XI, XII.

The Money Market.

A market is the meeting of demand and supply. In the money market the article dealt in is *money*, in the generic sense, including money and all forms

of credit. It was the establishment of a money market for the sale and purchase of *coined money* that led to the use of credit money and credit.

- (1) The money market arises from the necessity of borrowing capital under a system of specialized industry. Producers who are not capitalists must borrow.
- (2) Money and credit being the universal transfer medium, the loan of capital is in form a sale or barter of money and credit.
- (3) Banks are the great operators in the money market.
- (4) Centralization in the banking system widens the money market. The farmer in Iowa practically buys credit in New York.
- (5) Since credit rests on the basis of money,—*i.e.*, *cash*,—it is properly called the *money* market, although in practice mainly a *credit* market.
- (6) Legal tender money being the only commodity which will, without special agreement, pay debts, if credit is destroyed, the whole money demand falls upon money and enhances its value.
- (7) The permanent rate of interest is fixed by the demand and supply of capital; but there is a fluctuating and temporary rate fixed in the money market and affected by the demand and supply of money.

Credit and Panic.

Credit and panic are logical opposites. A panic is a wide-spread loss of credit. The development of credit enables the business of a country to be carried on with far less specie than could be the case without credit. In the industrial world most debtors are also creditors. The banks are at once debtors and creditors. The whole business of transfer of capital or other goods from hand to hand depends on the confidence of each debtor

that he can meet his debts promptly. For this end, the debts owing to him must be met promptly. The whole system is like a complicated chain, each link interlocked with many others. If one link breaks, it may weaken others, and they may snap, and still others, until the whole chain parts. So long as everybody believes that he can get cash—legal tender money—to pay his obligations if it is demanded, an enormous expansion of credit can be built up on a small cash reserve. If, however, this confidence is broken, and there is a general rush for the cash reserve, the whole credit system must collapse unless the panic is stopped.

Causes of Monetary Panics.

Panics are a psychological phenomena: difficult to trace the causes. Panics are the reaction after excessive hope, after speculative enterprise.

- (1) Speculative expansion of certain industries; over-production in these industries; prices fall below cost; merchants handling the goods unable to pay producers; producers unable to pay advances of banks; failure of banks, general alarm, panic.
- (2) Excessive extension of credit; raising prices; promoting speculative enterprise; reacting again to extend credit still further, until the bubble bursts.
- (3) Sudden changes in demand for certain goods might lead to undue production, or stop production of such goods, and thus precipitate an industrial crisis leading to a monetary panic.
- (4) A severe contraction of the currency is another assignable cause, making money too scarce in the money market.
- (5) The theory has been maintained, notably by Jevons (*Investigations, etc. Essays vi., vii., viii.*), that industrial crises, often precipitating panics in the

money market, occur in regular periods of about ten and one-half years, corresponding to the sun-spot cycle. The theory is that the variations in the sun, causing fluctuating harvests, affect the whole industrial world.

- (6) Inflation of the currency likewise an assignable cause.
- (7) Evidently a connection between banking system and panics. Banking is the organization of productive credit. Great panics do not occur where productive credit is not developed. England and the United States have chosen both the risks and the advantages of credit.

“The Problem of Managing a Panic.”

A panic being a frantic demand for money and credit in presence of an inadequate supply, the remedy is either to diminish the demand or augment the supply. It being a sort of mental disorder, it is often remedied by a species of mind-cure.

The Bank of England has both a preventive and a remedial course of action. (1) Speculative or excessive borrowing is checked by a rise in the rate of discount. (2) If this is ineffective, the requirement of coin or bullion deposits with the Issue Department in exchange for notes is “suspended,” and notes are issued to the Banking Department in return for securities. The effect of this is that the Bank has notes, which are legal tender, and can thus continue its loans to those seeking credit, or increase its reserve. The “mind cure” was so effective in the panic of 1857, that the knowledge that the Bank had added £2,000,000 to its reserve quieted the panic, although the day before the reserve was only about half a million, with thirteen millions liability for deposits.

The New York banks have a practice of combining their reserves so as to stand or fall together.

The United States Treasury has several times relieved the money market by a purchase of government bonds, thus liberating a quantity of money locked up in the National Treasury. The increase of money or loans at the point of greatest demand until confidence is restored is the remedy.

The problem of preventing industrial crises is another and a more difficult problem. It lies at the root of specialized or capitalistic production. The world-wide separation of producer and consumer makes the easy and harmonious meeting of demand and supply well-nigh impossible, even with the facilities of railroad and telegraph. The organization of the industrial forces is so intricate that any disturbance in one part may derange the whole. A plentiful harvest of wheat in India may, by affecting the price of American wheat, prostrate industry in the United States.

Industrial crises and panics in the money market, while interacting upon each other and seemingly standing in the relation of cause or effect to each other, are both the results of deeper causes.

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All are invited to the class, whether they have sent in exercises or not, while students are invited to add to their exercises questions that they desire further discussion on at a subsequent meeting.

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PART I.—PLANT FORMS.

LECTURE I.

THE PLANT UNIT.

I. What is a Plant?

This question is easily answered, if we consider only the higher forms, but as botany takes cognizance of *all* plants, and as many of these are simple and greatly resemble some of the lower animals, it is often difficult to frame a reply. We may, therefore, note,—

II. Resemblances between Plants and Animals.

(a) Both are built up of one or more little living vesicles or *cells*. The cell is, therefore, the living unit. The yeast-plant and proteus animalcule consist of one cell; the bean-plant and bird of many cells.

(b) Both show in every cell at some period of its history a jelly-like substance, which is the basis of all life, and is termed protoplasm.

(c) Both exhibit, as the result of the life activity of the protoplasm, the great functions of nutrition, respiration, irritability, and power of perpetuation.

III. Leading Differences of Plants and Animals.

(a) Plants take in simple food from the soil and air (water, salts, etc.), and in their green parts work these up into rich food for nourishment (starch, fats, protoplasm, etc.). They are, therefore, the great manufacturers in the world. Animals are incapable of building up rich food from simple materials, and therefore feed directly or indirectly on plants.

Exceptions to the above rule are fungi, and a few colorless parasites among plants, and perhaps a few green animals.

(*b*) Plants, with few exceptions, are green, since they have a green-colored compound, chlorophyll, united with the protoplasm, by which they build up food-supplies. Few, if any, animals have chlorophyll.

IV. Structure of the Typical Plant-Cell.

(*a*) Protoplasm. "The physical basis of life." It is a gelatinous substance resembling white of egg, and is the centre of all changes that go on in a plant. It can build up food-stuffs, or digest these by secreting ferments, or break them down into simpler compounds. It is irritable, being affected by mechanical pressure, by light, heat, chemicals, and electricity. It exhibits movements due to active chemical changes going on in it.

(*b*) The protoplasm of one cell is joined to that of neighbor cells by extremely fine threads that pass through pores in the wall (*e*). A multicellular plant, therefore, is not a mass of isolated living units, but a protoplasmic body permeated by scaffolding walls.

(*c*) Nucleus. A round or oval mass embedded in, and resembling the protoplasm, but of denser consistence.

(*d*) Nucleolus. A clear, shining sphere inside the nucleus. Both (*c*) and (*d*) are extremely important bodies, and may be likened to the relation of the human brain to the body, as from them radiate out many of the actions which affect the protoplasm.

(*e*) Cell wall. The least important part, intended only to give outline and strength to the living portions, from which it is derived.

V. Substances Formed in the Cell.

(*a*) Chlorophyll. The green color of plants is always formed by, and associated with, protoplasm: all living things are dependent on its action. Iron is a chemical,

and sunlight a physical, necessity for its formation. The gardener stops its formation when he blanches vegetables; while variegation is due to its unequal production. It usually occurs as chloroplasts. Each chloroplast is a machine at work during day in a cell or machine-room, and the cells collectively may be called a chemical factory.

(b) Starch, sugars, fats, etc. Starch is only formed in the green centres. The action of diastase on it, and its transfer as sugar to potato tubers and other parts, is similar to the changes effected on other rich food-stuffs.

(c) Ferments play a very important part. Diastase, emulsin, myrosin, are the best known.

(d) Accessory or waste cell contents. Bright flower colors, odors, acids, alkaloids, resins, tannin, and crystals will be referred to.

VI. Cell Formation.

(a) Asexual types, illustrated in green water-weed (*Vaucheria*), in yeast-plant, and skin cells (epidermis) of leaves.

(b) Sexual types, illustrated in pond-weed (*Spirogyra*), ferns, and flowering plants.

Home Reading.

Bessey's "Botany," pp. 1-50.

Exercises.

1. Compare a living and dead cell.
2. Explain why a potato tuber is filled with starch.
3. How does chlorophyll exist in plants? How could it be isolated?
4. "Sugar is abundant in most plants." Illustrate this statement by indicating as to its origin, occurrence, and destiny.
5. If *Vaucheria* be kept in a tumbler of water for three days, what will be noticed?

LECTURE II.

SEEDLINGS AND ROOTS.

Specimens of Bean, Marvel of Peru (*Mirabilis*), Maize, and *Pontederia* supplied to each student.

I. The Bean Seedling.

(a) It is one type of a plant just making a start in life. It owes so much to its parents, and has to do so much for itself.

(b) Its tissues illustrate division of labor in an individual.

(c) Note leathery seed coat, also that the seedling shows four great organs: 1st. The root, which, by gravitation force, always grows into or towards the earth. 2d. The stem, which always grows up into the air and light. 3d. The leaves, of which two—the seed leaves—are large, thick, and fleshy, while the others are thin and green. 4th. Hairs found equally on root, stem, and leaves.

II. Comparison of Marvel of Peru and Maize with Last.

(a) The main or primary root is well formed, and grows straight down in Bean and *Mirabilis*, but is not visible in Maize.

(b) Secondary roots grow out from the sides of the primary root in two first, and from the neck of the undeveloped one in the last.

(c) Stem in the two first is already well formed, but it is short and covered by sheathing leaves in Maize.

(d) Seed leaves in the bean retained inside the seed coat for some time, and the contained food is sucked out by the growing parts. Those of *Mirabilis* are soon pushed up above ground and become green, while food stored round

it is absorbed by seedling. In Maize is only one pale, small seed leaf.

III. Relation of the Cell Units in these Types.

(a) Some are carriers of raw material, others are manufacturers of rich food, others are breathing, or protecting, or storing, or strengthening units.

(b) Each unit has a structure appropriate to the work that it carries on.

IV. The Root is the Anchoring, Absorbing, and Disintegrating Organ.

(a) Its growing tip is protected by a cap of cells, and is sensitive to moisture, pressure, etc.

(b) Root-hairs grow out from its sides and curve round earth particles. Each is an anchoring and absorbing cell.

(c) The root has its soft cells packed round the outside as a cushion to the core of firm conducting elements that can resist tearing strains.

(d) Some roots have no root-hairs, and a fungus (*Mycorrhiza*) then takes the place of the latter. A case of symbiosis.

V. Some Roots may be specially modified to suit their Surroundings.

(a) In Ivy, Poison Ivy, and many Figs, roots become climbing organs.

(b) In *Tillandsia* of Florida, some Orchids, etc., roots are air-growers.

(c) In Mistletoe and Dodder they are parasitic.

(d) In Potato Vine they are storing centres.

(e) In Mangrove they are in some cases respiratory organs.

Home Reading.

Bessey's "Botany," pp. 65-88, 159-165.

Exercises.

1. Compare the seed-leaves of Bean, *Mirabilis*, and Maize.
2. How can the disintegrating action of roots be proved?
3. What is the root-cap, and how is it produced?
4. What relation between structure and function do air-roots exhibit?
5. Compare the growth of Mistletoe and Dodder roots in relation to their hosts.

LECTURE III.

THE FORMS AND STRUCTURE OF STEMS.

Branches of Horse-Chestnut, Poplar, Grass, Oak, and Palm supplied to each student.

I. Since the Stem supports and carries Sap to the Leaves, its Form and Structure are arranged accordingly.

(a) Its growing end is naked, but protective leaves may cover it at certain seasons.

(b) A stem or branch shows, as a rule, nodes and internodes. The leaves spring from the nodes, and leave a scar in perennial stems when they fall. Buds form in the axil of the leaves, and grow out into branches.

(c) Stems and branches exhibit variety in outline and mode of branching.

II. Like Roots, Stems and Branches may be specially modified.

(a) In Vine and Virginian Creeper, branches become climbing organs.

(b) In *Convolvulus* and Hop they are twiners.

- (c) In Solomon's Seal and Potato some are storers.
- (d) In Hawthorn some are defensive.

III. Some Stems and Branches may become Ant Cavities.

By this curious relationship the ants are housed and, it may be, fed, while they defend their host from injurious insects.

IV. The Minute Structure of Stems indicates the Affinities of Plants.

(a) The cellular stem of a Moss is simple, consisting of a core of sap-conducting tissue, with loose or firm cells around.

(b) The stems of Ferns and allies are complex, and show sap-conducting bundles scattered in cellular tissue. Frequently also there are hard strands of strengthening tissue. They grow in length by division of one—rarely more—cell at the top.

(c) The stem of Monocotyledons (lilies, rushes, palms, etc.) has many fine isolated bundles scattered in cellular tissue, but mostly massed towards the outer side of the stem. Growth in length is effected by division of many cells at the top.

(d) The stems of Dicotyledons and cone-bearing plants greatly resemble each other, and are the most complex and perfect in their formation. Starting with a few bundles arranged in a circle, these are expanded in width and depth year by year, through additions of annual rings of wood and—to a limited extent—bast. This is effected by a very important layer of active cells,—the cambium,—which is constantly forming new tissue, except during late autumn and winter. But unlimited wood and bast growth would mean the formation of rupture wounds in the outer bark. This is prevented by the development of the cork

cambium, which lays down protective or healing cork tissue. Two cambial layers are therefore at work,—an inner, or bundle cambium, which rapidly adds to the bulk of the stem, and an outer, or cork cambium, that forms natural bandages.

Home Reading.

Bessey's "Botany," pp. 106-127, 140-144, 405-409, 437-450.

Exercises.

1. How would you in all cases distinguish a root from a stem?
2. Contrast the climbing branches of the Vine and Virginian Creeper.
3. Why do we regard the potato tuber as a modified branch?
4. Why does tree bark readily strip in spring?
5. Name the zones that you would encounter in a five-year-old Dicotyledonous stem passing from the centre to the circumference.

LECTURE IV.

THE FORMS AND STRUCTURE OF LEAVES.

Leaves of Fern, Oak, Tulip-tree, Locust-tree, etc., supplied to each student.

I. The Leaf, Typically, is a Green Flattened Expansion of Tissue.

(a) As its main use is to build up food-material, chlorophyll is abundant in it, and it exposes a large surface to the light.

(b) The parts of a perfect leaf are (a) the leaf-stalk or

petiole, prolonged upward to form (*b*) the midrib, from which in most cases (*c*) veins pass off that are covered over by cells to form (*d*) the lamina. At the base of the leaf-stalk (*e*) stipules are often present.

(*c*) It is variously arranged in the bud during winter, and a few of the outer leaves or leaf parts (stipules, petiole) may be firm, leathery, and concave, to act as protective covers for the inner and more delicate ones that are to unfold in spring.

(*d*) The forms of leaf-veining are characteristic of the great plant groups.

(*e*) Leaves usually follow a spiral course on the stem, and the relation to each other is constant in normal growth of any species.

II. Leaf Forms are extremely varied as the Result of Hereditary and Environmental Action.

(*a*) Simple, lobed, cut, and compound leaves are related stages in the process of leaf evolution. Connecting types are often observed on the same leaf.

(*b*) The submerged, floating, and aerial leaves of many water plants yield instructive examples of adaptation to environment in the same individual.

III. The Minute Structure of a Green Leaf is appropriate to the Work that the Leaf performs as an Elaborating Organ.

(*a*) The entire leaf is surrounded by a wall of protective tissue,—the epidermis with its cuticle,—and this wall is pierced by apertures—the stomata—for passage of gas or water vapor.

(*b*) It shows closely-packed chlorophyll cells next the sunlight,—the palisade parenchyma,—and looser cells bounding intercellular spaces,—the loose parenchyma,—and in both of these, but particularly the upper, active food formation goes on.

(c) Veins that are continuous with those of the stem and root, distribute crude sap to the green cells, and draw off rich sap from them.

IV. Leaves, like Roots and Stems, may be specially modified.

(a) Leaf climbers, like *Gloriosa* and *Clematis*, twist the midrib of a leaf or leaflet round a support. Tendril bearers, like Vetch and Tare, have entire leaflets modified for climbing.

(b) Leaves may store food, as in green leaves of *Sedum*, and thick, fleshy scales of lily.

(c) Leaves that catch animal prey, like the Sundew, Venus's Fly-trap, and Side-saddle plant, are variously modified.

(d) Leaves, or parts of them, may be hard and act as organs of defence, as in Barberry, Gooseberry, Locust-tree, etc.

V. Fall of the Leaf.

This is not a hap-hazard event, but one that is carefully prepared for.

By gradual formation, during summer and autumn, of a line of cork cells, separation of the leaf and stem tissues is finally effected.

Home Reading.

Bessey's "Botany," pp. 90-105, 144-159.

Exercises.

1. Contrast seed, scale, and foliage leaves, as to position, arrangement on the stem, and consistence.
2. What leaf parts may be converted into tendrils and spines?
3. Name the parts seen in a transverse leaf section.

4. Describe a stoma, and state how stomata are distributed.

5. Describe the leaf and leaf movements of Venus's Fly-trap.

LECTURE V.

THE PARTS AND FORMS OF FLOWERS.

I. A Flower is a Collection of Leaves arranged to insure Production of Seeds.

(a) Though many parts of the flower may have withered before the fruit and seeds are matured, the above statement is still essentially true; for the forms, colors, scents, nectar secretion, and even time of blossoming, are all secondary adaptations that insure and lead up to seed-production.

(b) At least two types of floral leaf must be produced by every flowering plant. These are the stamens that form the fertilizing pollen cells, and the carpels (collectively called the pistil) that usually bear the ovules which are to mature into seeds.

(c) They are called the essential floral leaves, and may both occur in the same flower (hermaphrodite), or in distinct flowers on the same plant (monoëcious), or on separate plants (dioëcious).

II. Contact of a Pollen-Cell with the Egg-Cell of an Ovule is Necessary for Seed Formation, and Adaptations must exist for effecting this.

(a) In most instances the pollen from one flower is carried to the pistil of another, and this is termed cross-pollination. In such cases, water, wind, or small animals (insects, slugs, birds) are the agents employed.

(b) Self-pollination is the application of pollen from a flower to its own pistil. This is rarer than the last, but in some flowers (cleistogamic) it is carefully arranged for.

(c) As the stamens and carpels are specially connected with reproduction, accessory leaves may be formed for aiding in cross-pollination or for protecting the essential leaves. They are therefore termed the non-essential floral leaves.

(d) When one set only is present they are called sepals, and collectively the calyx; when a second and inner set is also developed they are called petals, and collectively the corolla.

III. The Non-Essential Floral Leaves exhibit Great Variety in Duration, Form, Color, Relation to Each Other, as well as Production of Odor and Honey.

(a) The duration of the sepals depends largely on their color and consistence; if firm and green, they may persist round the fruit till the seeds are ripe; if delicate and bright-colored, they soon wither. The petals are short-lived, and wither after pollen has reached the carpels. Therefore gardeners try to exclude pollen-carrying insects from conservatories to prolong the period of blossom.

(b) An endless variety of form is encountered, and a few will be referred to.

(c) If a flower is green and inconspicuous, it is either self-pollinated, or, if cross-pollinated, water or wind, rarely insects or slugs, transfer the pollen. If a flower is brightly colored, it is cross-pollinated usually, and insects, slugs, or birds effect the transfer.

(d) Often the petals, but failing these the sepals may secrete honey and odors. The latter may either be agreeable or the reverse, to attract the particular animal that can best transfer the pollen.

(e) In flowers of simple construction the sepals and petals are separate; in more specialized forms they are fused together.

IV. Staminal Leaves are constructed to form and set free Pollen-Cells.

(a) It follows from the above that as the anther is the pollen-forming part, it is important, and the filament may or may not be present.

(b) The structure of the anther is such that it can set free the pollen grains when mature, and when surrounding circumstances are favorable for their dispersion.

(c) Numerous contrivances are shown alike by filament and anther for promoting dissemination of the pollen. Thus swinging, irritable, and honey-producing filaments, or exploding, valvular, and porous anthers, are illustrations.

V. The Pollen-Grains are Cells so constructed that Part of their Contents can reach the Egg-Cell of the Ovule.

(a) So far as even the highest powers of the microscope reveal, these differ from ordinary cells only in having a firm coat to protect them till they reach the pistil. But their molecular structure must be very different, since they are the bearers of a great train of hereditary peculiarities.

(b) Their structure is adapted to the disseminating medium. Thus, floating and eel-like forms are found in water-plants; dry powdery ones, or that have balloons, are common in wind-pollinated plants; while sticky, spiny, or warted ones readily catch on to the bodies of animals.

(c) When the grain reaches the pistil, it germinates and sends a tube into the substance of it, which penetrates to the egg-cell of the ovule, and union of contents then occurs.

VI. Carpels are Leaves that carry, or cover in, Ovules.

(a) In cone-plants—*e.g.*, Pine—the ovules are formed on flat carpels, and are thus more exposed to accident than those of the higher plants which are covered in by the folded carpels, as in a hermetically-sealed flask.

(b) One carpel (pea, bean) or several may make up the pistil, and they may either be separate (apocarpous) or united (syncarpous).

(c) The cord or cushion that bears and carries nourishment to the ovules is the placenta.

VII. The Ovule encloses the Egg-Cell, part of which, after Union with the Contents of the Pollen-Tube, becomes the Embryo Plant.

(a) The structure of every ovule shows that special protection, nourishment, and accommodation for growth are provided for the cell in question.

(b) Fusion of nuclear parts of the pollen-cell and egg-cell takes place in fertilization.

(c) The egg-cell then rapidly divides, and abundant nourishment is passed either into it or round it.

(d) The ovule enlarges with the embryo, becomes firm, and in time is scattered as a seed.

Home Reading.

Bessey's "Botany," pp. 389-392, 404-409, 416-434.
Lubbock's "British Wild Flowers."

Exercises.

1. What parts of the flower may secrete honey?
2. What evidence is there that all the parts of the flower are modified leaves? Give examples.
3. Describe the structure of the anther. What effect has a prolonged season of rainy weather on it?

4. "Dry, breezy weather is favorable for setting the fruits of corn and other cereals." Explain this.
5. Describe the structure of an ovule.

LECTURE VI.

FRUITS AND SEEDS.

I. The Fruit is the Matured Ovary of a Flower.

(a) Care must be taken to distinguish between what is a true fruit and what is a part accessory to it. Thus, the receptacle of the strawberry and fig, the top of the pedicel of the cashew, the bract leaves of the pineapple, etc., are succulent, and usually mistaken for parts of the fruit.

(b) Some fruits, like mulberry, pineapple, and fig, are massed in clusters, and are called compound or multiple fruits. Most are separate, and are called simple fruits.

II. The Fruit protects the Seeds till Ripe, and has Arrangements for scattering them; or, if the Seed-Coats are Delicate, the Fruit covers them till the Embryo in each is ready to germinate.

(a) Some fruits as they enlarge and mature become dry; others swell up and become succulent.

(b) Dry fruits may either rupture and set free the seeds (capsular), or enclose the seeds till these are ready to germinate (achenial).

(c) In the first case, the seeds may fall out or be jerked out, as in the balsams, or projected with great energy by the separating carpels, as in "Monkey's Dinner-Bell" (*Hura crepitans*), or have hairs or vanes that float them away to a distance from the parent plant.

(d) In the second case, the fruits may be disseminated as are the seeds above mentioned.

(e) Succulent fruits are usually colored in a way that

either attracts certain animals to feed on them, and these distribute the seeds, or that warn off others which might destroy the seeds. In the latter cases poisons are usually found in the fruits or seeds.

III. The same Structural Parts are observed in Fruit Leaves as in Foliage Leaves.

(a) The above axiom is well illustrated by many of the succulent fruits, such as the peach, cherry, orange, grape, etc.

(b) The upper surface of a leaf becomes the inner surface of the fruit, while the under surface of a leaf becomes the outer fruit covering.

IV. The Seed is the Matured Ovule, containing an Embryo Plant.

(a) Most seeds are dry, and have a firm, protective coat, but those of pomegranate, etc., are succulent and bright, so as to attract birds.

(b) Except in a few groups, food is stored up in or round the embryo plant by the parent, so that the former may start fairly in life.

Home Reading.

Bessey's "Botany," pp. 435-437, and subsequent parts.

Exercises.

1. Describe a Pineapple, and explain how the edible part is formed.
2. Trace the relation between a cluster of folded green leaves and the fruit of the Orange.
3. Compare ripe capsular and achenial fruits, and give two examples of each.
4. What is a stone fruit? How is the "stone" formed, and what is its position?
5. Account for the two "eyes" and "nose" in the Coco-nut.

PART II.—PLANT FUNCTIONS.

LECTURE I.

GENERAL LIFE STUDIES.

I. The Functions of Nutrition, Respiration, Growth, Irritability, and Reproduction are shown by every Plant.

(a) The above thesis is universal, no matter whether the plant consists of a single cell, or is a large tree. But if all these functions are combined in a plant that is a single cell, it is said to be a *generalized* type. If special parts are set aside for special work, it is termed a *specialized* type.

(b) Generalized types have a short life-cycle, and may show all the above functions simultaneously; specialized types may take weeks, months, or years to complete their life-cycle. The former, therefore, are convenient for introductory study, and two simple types will first be chosen.

II. Life-Functions of *Pleurococcus Vulgaris*.

(a) This is a small, green, unicellular water-weed, common in two feeding-places. It either forms a green coating on tree-bark, or lives on the surface of decaying nitrogenous liquids. It therefore assumes a moving and a resting stage, each adapted to its surroundings.

(b) Nutrition is effected during daylight by absorption into its protoplasm of water with dissolved salts. The crude sap absorbed is built up by the chlorophyll into complex food,—*e.g.*, starch, albuminous compounds, etc.,—while it gives off oxygen bubbles in the process.

(c) Respiration is constantly going on in it, and consists

in the absorption of oxygen and giving off of carbonic acid gas and water vapor.

(*d*) It grows by additions of food particles to the wall and to the living protoplasm.

(*e*) It is highly irritable to light, heat, and electric currents, and the moving form can rapidly migrate from the dark into sunlight.

(*f*) Reproduction is effected by division of each individual in the resting form, and by brood-cells in the moving one.

III. Life-Functions of the Yeast-Plant. (*Saccharomyces Cerevisiæ*.)

(*a*) This is a minute, colorless, unicellular fungus, found floating in the air among dust particles, and is abundant in sugar solutions. In the latter it sets up vinous fermentation, and has therefore been termed an *organized ferment*.

(*b*) For nutrition it absorbs water along with sugar and some inorganic salts. Being devoid of green color or chlorophyll, it is unable to manufacture starch or sugar for itself, but, like all fungi, must absorb a certain amount of organic food. It uses a portion of the sugar as food, but splits up part of it into alcohol, carbonic acid, glycerin, and succinic acid, and thus acts as a splitting or decomposing ferment.

(*c*) In respiration oxygen is absorbed either from the liquid in which it lives, or it can split up food particles so as to set free oxygen.

(*d*) Growth is effected with great rapidity in sugar solutions.

(*e*) It is irritable to heat, to electric and chemical action. A low temperature (32°–45° F.) paralyzes the protoplasm, a high temperature (120°–150° F.) destroys it. It is most active at 75°–85° F. Mild electric currents increase its activity for food formation, strong currents kill it. Some chemicals stimulate it, others, like chloroform, destroy it.

(f) It is rapidly reproduced by budding when in rich sugar liquids, and by formation of brood-cells when starved.

IV. The Life-Functions of the Germ Fungi or Bacteria resemble those of the Yeast-Plant.

A few of these will be referred to.

V. The Life-Functions of Seedling Flowering Plants (Bean, Sunflower, and Palm) illustrate Functional Specialization.

(a) Every seedling shows actively-growing parts. Each growing region is made up of living cells that feed, breathe, enlarge, and divide.

(b) In the Bean and Sunflower, nourishment is at first absorbed by the young plantlet from the thick seed leaves, the cells of which are loaded with reserve food stored up from the parent.

(c) In the Palm, nourishment is at first absorbed from a mass of food-cells that fill the seed cavity, and is called endosperm.

(d) Comparison of the food-storing cells reveals interesting differences. Starch and aleurone granules in the bean, oil and albuminous granules in the sunflower, hard, ivory-like cellulose knobs and albuminous granules in the palm, form the reserve material.

(e) These can only be of use in feeding the seedling when they have been digested and rendered soluble by ferments.

VI. The Nutrition of a Seedling is dependent on the Activity of Ferments.

(a) Different kinds of ferment are formed to act on food substances, as diastase, emulsin, etc. Such are termed *un-organized ferments*.

(b) A very minute quantity of any ferment produces enormous digestive changes. Various chemical and physical explanations have been advanced to account for this.

(c) The food that has been dissolved by ferment action passes into the seedling as sugar, asparagin, etc. It is used up either in building cell-walls or as food for the protoplasm, or for production of heat by union with oxygen.

(d) The protoplasm in the root and stem cells of the seedling so reacts to gravity that the former grows into the soil or is positively geotropic, while the latter grows into the air or is negatively geotropic.

Home Reading.

Bessey's "Botany," pp. 212-223.

Goodale's "Physiological Botany," pp. 195-219, 459-469.

Exercises.

1. What changes does the Yeast-plant effect in sugar solutions? Why is it used for bread-raising?

2. What fundamental difference is there in *Pleurococcus* and the Yeast-plant as regards nutrition? State shortly the practical outcome of it.

3. "Starch, oil, and cellulose may replace each other in seeds." Explain this statement in relation to growth of the embryo plant.

4. What is a ferment? What is the difference between an organized and unorganized ferment?

5. How is seedling nutrition of such a plant as the Bean effected?

LECTURE II.

NUTRITION OF FLOWERING PLANTS.

I. The Root invades and takes Possession of a Soil Territory from which it draws Food-Supplies.

(a) The invasion is effected by the primary root growing straight into the soil and the secondary ones spreading out from it. The root-hairs of these grow round little stones or earth particles, and give off carbon dioxide and other disintegrating compounds which dissolve the particles.

(b) The crude sap is absorbed by the root-hairs through endosmotic action, and is passed from cell to cell of the root, till it reaches the wood portion, and is then passed up to the stem.

II. The Roots of some Plants are devoid of Root-Hairs, and Depend on a Fungus (Mycorrhiza) for Absorption of Liquids.

(a) This is one of the remarkable cases of symbiosis or consortium in the vegetable kingdom. The two plants mutually help each other. The following is an even more striking case.

III. Roots of the Bean, and Members of the Bean Order form Nitrification Tubercles.

(a) It was long a puzzle to agriculturists to understand why a clover or bean crop seemed to enrich the soil in nitrogen compounds, even while the crop itself required a large amount. The history of the little tubercles explains all. These are formed by a "bacteroid" or minute fungus that lives in the bean roots and gives up quantities of its nitrogenous food to the bean, while fresh nitrogenous supplies are handed on to it by another species that can directly absorb nitrogen from the atmosphere. The farmer of the

future may thus be able to obtain manure without keeping stock.

IV. The Crude Sap passes up through the Wood Region of the Root and Stem into the Leaves.

(a) Every element of the wood (wood fibres, tracheids, and vessels) is an extremely fine capillary tube, and by combined capillary action these pass the sap up the stem. Capillarity is therefore an agent in the sap ascent.

(b) But continued absorption by the root-hairs pushes forward that already absorbed. Root-pressure is thus another agent.

(c) Swaying of stems and branches by wind is a third agent.

V. Crude Sap from the Soil and Carbon derived from the Atmosphere are linked together in the Leaves to form Rich Food.

(a) The amount of carbonic acid gas absorbed by plants from the atmosphere is very great. It is wholly passed into the chlorophyll centres.

(b) In conjunction with protoplasm, chlorophyll can split up carbonic acid gas (CO_2) into carbon and oxygen. The former is retained, the latter is given off.

(c) Union of the carbon with water produces starch, the first visible organic compound that is formed. This again may have nitrogen and sulphur added to it, for the formation of protoplasm or of nitrogenous compounds.

(d) Carbon elaboration can only be effected in the green protoplasmic machines or chloroplasts.

(e) Transpiration and elaboration aid greatly in the ascent of sap.

VI. Ferment Action converts Insoluble Foods into Compounds that can be used up by the Tissues.

(a) The ferment diastase is formed in the cells of green leaves as in those of seedlings, and digests starch into

sugar. The latter may be used in building up a cell-wall, or it may migrate to some centre and be reconverted into starch and stored for future use.

(b) Storing centres may be formed in roots (Carrot, Turnip), or in stems (pith and medullary rays), or in branches (Potato tuber, Cactus), or in leaves (Lily and Onion scales), and the cells of these may contain starch, sugar, inulin, globoids, crystalloids, and other reserve products.

(c) All food is ultimately built up into the tissues, *i.e.*, assimilated; or it may be split up into simpler products that are of a disagreeable or poisonous nature, and used for defence, as tannin, acids, and alkaloids; or it may form bright, attractive colors, as in flower and fruit parts.

VII. The Sources of Plant-Food.

(a) The element carbon enters largely into the composition of every plant. It is wholly obtained from the atmosphere.

(b) A good natural soil, permeated by a moderate amount of water, supplies all the other requisites for plant-food.

(c) Light or exhausted land requires to be artificially helped by natural or artificial manures.

Home Reading.

Bessey's "Botany," pp. 175-193.

Goodale's "Physiological Botany," pp. 230-337, 354-365.

Exercises.

1. What are the functions of a root? What changes do roots effect on the soil around them?

2. May Fungi ever be of use in aiding the nutrition of flowering plants?

3. Compare crude and elaborated sap, and indicate how they are distributed throughout a plant.

4. What changes go on in chloroplasts?
5. What is an artificial manure? What guides a farmer in his selection of a particular kind?

LECTURE III.

NUTRITION AND RESPIRATION OF FLOWERING PLANTS.

I. Carnivorous Plants can supplement their Ordinary Food-Supply by an Animal Diet.

(a) In some cases elaborate contrivances exist to catch insects, whose decay is hastened through the presence of a liquid poured out by the leaves. This behavior is shown by the species of *Sarracenia*, *Roridula*, and probably the species of *Nepenthes*.

(b) In other cases a digestive ferment is poured out which effects changes on the animals caught similar to the action of ferments inside the plant tissue. Thus, insoluble pepsin is changed into soluble peptone. The Sundews, Venus's Fly-trap, and Butterwort are illustrations.

II. Saprophytes and Parasites show Exceptional Nutritive Arrangements.

(a) Some Saprophytes may absorb the whole or part of their food from decaying plants or animals. The roots of these are in many cases invested by the fungus *Mycorhiza*.

(b) Green parasites, like Mistletoe, draw crude sap only from their host, and their roots accordingly grow into the wood region.

(c) Colorless parasites, like Dodder, Beech-drops, and Broom-rape, draw all their food in an elaborated state from their host, and their roots penetrate into the bast region of it.

(d) The more complete the parasitism is, the more degraded does the parasite become.

III. Parasites are Comparable with Artificial or Natural Grafts.

(a) In both cases an intimate union between host or stock and parasite or graft is accomplished.

(b) Growth of the parasite or graft is more or less at the expense of the host or stock.

IV. Respiration is essentially a Heat-Producing Process.

(a) Every plant is continually absorbing oxygen and giving off carbonic acid while breathing. Various experiments afford proof of this.

(b) The oxygen may either be drawn in from the atmosphere, or be laid hold of during day as it is set free during elaboration, or results from splitting up of food compounds.

(c) The two former methods are observed in mature parts of green plants, the last occurs in seedlings. As much as half the entire amount of food stored up in or round a seedling may be used up for respiration.

(d) The absorbed oxygen unites with waste carbon compounds, and the whole is swept out as carbonic acid and water vapor. The tissues are thus kept in a healthy state.

V. The Heat evolved during Respiration results from Union of Oxygen with Carbon Compounds.

(a) By careful experiment it can be proved that the amount of heat evolved is in the same proportion as if a certain amount of oxygen had combined with carbon in the atmosphere.

(b) The heat thus evolved probably aids in the irritable action of the protoplasm.

VI. Respiration, like Nutrition, requires Favorable Temperature Conditions.

(a) A certain average temperature is necessary for normal respiration in any given plant, but it may vary in different species. Phosphorescent Fungi illustrate this.

Home Reading.

Bessey's "Botany," pp. 181-183.

Goodale's "Physiological Botany," pp. 337-352, 367-370.

Exercises.

1. What resemblances and differences obtain in *Drosera* and *Dionæa* as regards secretion of liquids?
2. Compare the nutrition of a saprophytic and colorless parasitic plant.
3. How are grafts made? On what factors does success in grafting depend?
4. Compare nutrition and respiration.
5. What experimental proof is there that heat is evolved during respiration?

LECTURE IV.

GROWTH IN FLOWERING PLANTS.

I. Growth is in all Cases dependent on a Supply of Food-Materials.

(a) The spring growth of buds on shrubs and trees, of shoots from Potato tubers, of flowers from bulbs are all effected at the expense of stored-up food.

(b) Flowers like the Snowdrop and Crocus, the tassels of Poplar and Willow, the spadix of Skunk Cabbage, are thus able to appear before the green parts.

(c) If the supply of food-material for some reason passes

more to one part than to another, the former will grow at the expense of the latter. This explains many peculiarities of branching and flower production.

II. Growth only proceeds when there is a Favorable Combination of Heat, Moisture, and Oxygen.

(a) In the germination of seedlings the above can be readily verified by experiment, when it will be found that if any one of the above requisites be not present growth will cease.

(b) But "intramolecular breathing" may for a time supply sufficient oxygen, though it is a constant drain on the strength of the plant.

III. Growth may be affected or arrested by Environmental Conditions.

(a) Gravitation has decided action on roots and stems.

(b) Growth in length takes place more rapidly in darkness than in light. Thus, the shoots of a Potato tuber that have sprouted in a cellar are longer than others formed in light. The food-materials, however, remain in a more plastic state, and thus gardeners resort to blanching of vegetables.

(c) Light may stimulate certain members to develop more perfectly than if these had remained in darkness. Thus, the underground scale-leaves of some plants may become green and enlarged by exposure above ground.

(d) Chemical agents may either stimulate or retard growth.

(e) Mechanical irritation often produces large and rapid growths. All the plant tumors known as "galls" are due to irritation by little insects, and each species of insect so acts on the plant tissues that a characteristic gall is the result. Some insects even that produce two brood types in a season form galls typical of each.

(f) Electricity, whether applied as a current or as an illuminant, promotes growth.

IV. Growth is usually limited to Certain Parts.

(a) Growth in length proceeds most actively at the plant extremities, and this is termed apical growth. But it may continue or reappear on older parts, constituting intercalary growth.

(b) All roots lengthen by rapid elongation of the tip and subsequent slow growth of the part that is already developed.

(c) Stems at first elongate rapidly at the apex, but later may increase greatly in width. Thus, the bundle cambium and cork cambium of dicotyledons and conifers may continue growth for hundreds of years.

(d) Leaves may grow most actively at the attached end, or at the tip, or over their entire area.

V. Periodicity of Growth is of Frequent Occurrence.

(a) Some plants start growth in early spring (Hepatica and Skunk Cabbage), some in late spring (Currant and Oak), some flower in early or in late autumn (Witch-hazel). Attempts to make these start at other seasons usually fail; thus, Potato tubers or Poplar-twigs will not form young shoots in autumn.

(b) Recent observations show that definite amounts of growth occur within stated times, and that these vary during different seasons of the year.

(c) Twining of stems, as in Hop and Honeysuckle, is due to constantly changing spiral growth that winds round the stem.

(d) The opening and closing of flower parts, as in Daisy, is explained by growth alternately above and below the point of attachment.

(e) The maturing of flower parts furnishes numerous illustrations of periodicity. Thus, the sepals grow steadily from their earliest formation till the flower opens; the petals

often rest for a time and grow rapidly just before blossoming; the stamens may ripen before the pistil; or the pistil may be mature before the stamens.

VI. Growth in Fruit and Seed Parts is often a Consequence of Fertilization.

(a) The great increase in size and the amount of food brought to bear on fruit formation is probably explained by chemical stimulation of the fruit cells.

Home Reading.

Bessey's "Botany," pp. 180-183.

Goodale's "Physiological Botany," pp. 373-390, 400-407.

Exercises.

1. Explain why a Hyacinth can grow and flower in a glass when supplied only with water.
2. Why do gardeners blanch Celery?
3. Compare gall and fruit formation.
4. Describe the growth of cambial tissue, and compare the work accomplished by bundle and cork cambium.
5. Why is it that a seedling twining plant, like Scarlet Bean, always lays hold of the nearest support?

LECTURE V.

IRRITABILITY OF FLOWERING PLANTS.

I. Irritability is the Power possessed by Living Protoplasm of responding to External Stimuli, such as Pressure, Heat, Light, Chemical Agents, or Electricity.

(a) This is a phenomenon so universal in the vegetable world, and as yet so imperfectly understood in all its rami-

fications, that we can only present physiological groups of cases, and their explanation so far as obtained.

(b) Several exhibitions of irritability may be combined in the same organ or member.

(c) It is in all cases dependent on suitable conditions of temperature, and on the general health of the plant.

II. Roots and Stems are Irritable to Gravitation.

(a) The statement that roots grow into the soil is so axiomatic that one seldom thinks of asking why they do so. But that they are attracted by the earth's mass, just as is a falling stone, can be proved by simple experiments. Their earthward growth is designated *geotropism*.

(b) Stems and leaves, as a rule, rise against gravity, and are negatively geotropic. Curious exceptions to the law will be noticed, particularly hydrotropic movements effected by growing roots when in search of moisture.

III. Roots, Stems, and Leaves are Irritable to Light.

(a) So far as we at present know, light is the most common and one of the most powerful stimulants of living protoplasm. The response which plants show to it is termed *heliotropism*.

(d) Roots usually grow away from the light, or are negatively heliotropic; but the roots of some orchids, etc., are exceptions.

(c) Stems, branches, and leaves are in most cases heliotropic; but the climbing branches of the Virginian Creeper are negatively heliotropic, since they grow away from the light. In the Ivy-leaved Toad-flax the flower-stalks are alternately positive and negative in their growth.

IV. Leaves may exhibit Sleep-Movements.

(a) These are common in the Bean order (*Leguminosæ*), but are rare or less evident in plants of other orders.

(b) They are due to variations in illumination at sunrise

and sunset, which irritate the protoplasm to redistribute the sap contained in each cell. Thus if sap is passed into the outer cells at the base of a leaf-stalk in the morning, these swell up and the leaf becomes erect.

V. Branches and Leaves may show Irritable Twining Movements.

(a) When contact between a twining organ and another body occurs, the mechanical irritation set up causes twining movement of the former round the latter. This is probably due to increase in length of cells on the side opposite to that irritated.

(b) By the above means many plants with weak stems and branches climb up into the light and air by twisting round a supporting body.

VI. Some Leaf Parts are Highly Irritable to Mechanical Touch.

(a) Sudden movements of position are sometimes executed by the vegetative leaves, as in Venus's Fly-trap, Sensitive Plant, and Sensitive Sorrel. These are probably all due to sudden irritation of the protoplasm in special cells, followed by transference of water from them into other cells.

(b) The physiological behavior of these in some cases resembles that of muscular tissue in animals.

(c) Equally rapid movements are shown by the stamens and pistil of various flowers. Thus the irritable movements of stamens in the Barberry and Corn-flower alliances, also the style movements of *Stylidium* and the movements of the stigmatic lobes in the Monkey flower (*Mimulus*), though intended to aid in cross-pollination, are due to the above causes.

Home Reading.

Bessey's "Botany," pp. 193-201.

Goodale's "Physiological Botany," pp. 392-424.

Exercises.

1. Describe two experiments which prove geotropism.
2. Describe the movements of a plant which exhibit positive and negative geotropism alternately. Of what value are these movements in the life of the plant?
3. Describe the phases of movement executed by the Sensitive Plant during the course of twenty-four hours. To what are these due?
4. Compare leaf-climbers and tendril-bearers, and give two examples of each.
5. Compare the movements of the stamens in Barberry and Thistle, and show how they act in relation to insect visitors.

LECTURE VI.

REPRODUCTION OF FLOWERING PLANTS.

I. The Function of a Flower is to insure Seed Production, and thereby Perpetuation of the Species.

(a) Three successive stages in the process are (a) pollination, (b) fertilization, (c) maturity and dispersion of the seeds.

(b) It may be postulated as a great physiological law that cross-fertilization is the rule, self-fertilization the exception, in the vegetable kingdom. Even when stamens and pistil are combined in the same flower, elaborate contrivances often exist to insure cross-fertilization. The Violet, Bell-flower, and Orchid are illustrations.

(c) But in order, perhaps, to check over-rapid variation in species, self-fertilization is, in some cases, arranged for. Self-fertilized flowers are mostly small and inconspicuous.

II. Pollination is the Transfer of Pollen from One Flower and its Application to the Pistil of Another, rarely of the Same.

(a) Inanimate or animate agents may be employed for the transfer. When the former, the flowers are green, unattractive, and inconspicuous; when the latter, some means are adopted to attract visitors, as by color, odor, or honey production.

(b) Water and wind are inanimate carriers of pollen, and flowers which depend on these exhibit the following as a rule:

Inconspicuous flowers.

Dispersion of a large amount of pollen.

Pollen grains that are dry, smooth, and light.

Exposure of a large stigmatic surface.

Vallisneria, *Elodea*, and *Eleocharis* are water-pollinated. Trees and shrubs that produce catkins, also grasses, sedges, and other herbaceous plants are wind-pollinated. In most cases wind-pollinated species either flower early before the leaves have unfolded, as is true of most deciduous shrubs and trees, or they are gregarious in habit, like the grasses, sedges, and rushes.

(c) The animate agents employed are chiefly insects, but in some cases birds or slugs. The flowers may be dull or lurid in color, and give off a fetid odor if slugs or insects that frequent carrion are the carriers. In other cases the flowers may have bright color, odor, and honey.

(d) As regards the relation of the stamens to the pistil for purposes of pollination, flowers may be classified as follows:

I. Dimorphic (two flower forms on distinct plants, as in Primrose), or Trimorphic (three flower forms on distinct plants, as in Swamp Loosestrife), or Tetramorphic (four flower forms on distinct plants, as in Ground Laurel) types.

II. Dichogamous types.

(a) Proterandrous forms (the stamens maturing and shedding their pollen before the pistil is ripe).

(b) Proterogynous forms (the pistil maturing and receiving pollen from another flower before the stamens are ripe).

III. Mechanical or physiological devices that prevent self- and insure cross-pollination.

III. Fertilization is the Fusion of Pollen-Cell and Egg-Cell Nuclei with Subsequent Formation of a Perfect Egg-Cell.

(a) The pollen-tube that protrudes into the viscid tip or stigma of the pistil often attains a great length, as in Maize and Crocus, and is fed by the pistil during its passage to the ovule.

(b) The results of fertilization are not confined to the egg-cell or ovule that is to mature into a seed, but may be shown in growth of the fruit-wall; production of color and succulence in it; persistence, growth, and even succulent enlargement of the calyx or of the bracts and receptacle.

IV. The Functions of the Fruit and Seed are to cover, feed, and start in Life the Contained Embryo Plant.

(a) The great variety in shape, color, and consistence alike of fruit and seed are either adaptations for protecting the embryo, or for setting it free when ready to germinate. Thus, warning and attractive colors, hard and soft coverings, presence or absence of hooks, wings, and hairs are all functionally of great import.

V. Hybridity is the Production of Crosses between Distinct Species.

(a) Hybrids are not uncommon in the wild state, and can perpetuate themselves to a limited extent. Under cultivation, a large number have been raised, in some cases even between remotely allied species.

(b) Hybrids, as a rule, exhibit the blended peculiarities of the parent plants, but sometimes resemble one more than the other.

(c) Hybrids can be produced by grafting, and may greatly resemble ordinary seed hybrids.

Home Reading.

Bessey's "Botany," pp. 390-392, 418-426, 435.

Goodale's "Physiological Botany," pp. 425-455.

Exercises.

1. What are the uses of hairs, color-lines, and ridges in flowers?

2. If three brightly-colored flowers were given you, one of which was saucer-shaped, another tubular, and a third funnel-shaped, what might you expect as to nectar secretion, and the kinds of insect that might visit the flowers?

3. How is the Milk-weed pollinated?

4. What is trimorphic pollen? Name any species which has it, and describe the relation of stamens and pistil in different individuals.

5. Describe five modes of seed dissemination.

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—, "A History of the Italian Republics" (the same condensed).

MARIOTTI, "Italy, Past and Present," 2 v.

SYMONDS, "Renaissance in Italy," 7 v.

—, Article on the "Renaissance," in *Encyc. Brit.*

BURCKHARDT, "The Renaissance in Italy."

SCHAFF, "Renaissance."

WOOLSEY, "Revival of Letters in the Fourteenth and Fifteenth Centuries." *New Englander*, October, 1864; January, July, October, 1865.

RANKE, "History of the Popes," 3 v.

CREIGHTON, "History of Papacy during Reformation," 4 v.

GIBBON, "Decline and Fall," vol. 6.

GRIMM, "Life of Michael Angelo," 2 v.

—, "Life of Raphael," 2 v.

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—, "Makers of Florence."

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—, "Life of Savonarola," 2 v.

DRAPER, "Intellectual Development of Europe," 2 v.

ROSCOE, "Lorenzo de Medici."

Full lists of works in English and other languages can be found in Schaff, "Renaissance;" Voigt, "Wiederbelebung der klassischhen Alterthums;" Geiger, "Renaissance und Humanismus." To one with a reading knowledge of German the last two will be most valuable. In the list above given only such books have been selected as are in English and readily accessible.

LECTURE I.

THE POLITICAL LIFE OF THE RENAISSANCE.

REFERENCES.

- GIBBON, "Decline and Fall," Ch. LXIX.
HALLAM, "Middle Ages," I, Ch. III, Pts. I, II.
BRYCE, "Holy Roman Empire," Chaps. VII-XVI.
FREEMAN, "Essays," First Series. "Holy Roman Empire." "Frederic the First, King of Italy." "Frederic the Second."
HUNT, "History of Italy," 1-116.
SISMONDI, "History of the Italian Republics," 1-295.
SYMONDS, "Age of the Despots," Chaps. II, III, IV.
BURCKHARDT, "Renaissance in Italy," Part I.

Italy from the twelfth to the fifteenth century in a peculiar political condition. Many disintegrating influences, effect of which was disunity, absence of uniformity in nationality and politics; jealousy within, coupled with free municipal government; interference from without, coupled with theory of imperial world-headship; linked with both was the Papacy, which from its position as head of a universal Church knew no limits of country or nationality.¹

Theory of the Mediæval Empire.²

The key to mediæval history, to the relations between Pope and Emperor to 1250 is the theory of the dual gov-

¹ Compare Italy with France of Philip Augustus and Philip the Fair, where feudalism (which is sovereignty dissipated) was transformed in absolute monarchy (which is the apotheosis of sovereignty centralized); compare with England, where monarchy and the people, often in conflict, grew strong together, dividing the powers of administration; a nation with a monarchy limited by the retention of local government and the growth of parliamentary rights.

² The Renaissance and Reformation cannot be appreciated or understood without a working knowledge of the main features of this

ernment of the world, the claim to universality of the Church and the Empire, which came into contact with the growth of nationality at every point. This, though in reality more or less of a fiction, was believed in by rulers and people alike, and formed an integral part of the European system to 1806.¹ The Empire a continuation of that of Rome; the emperors, lords of the world. The Church, growing up on the framework of the old Empire since Constantine, reproduced the same organization, embraced within its fold the ancient and mediæval world, and binding all with the oneness of its faith and the universality of its law did a magnificent work from the fifth to the ninth centuries.² Thus there was formed a dual universal headship, State and Church, in common accord ruling the world. An ideal government thrice approximately attained, at all other times in conflict or one dominant over the other.³ Henry IV, Gregory VII, and Canossa, Henry V and the Concordat of Worms.

When Otto I in 962 fastened the title of Emperor to the German House, a strange combination took place. German king became permanently Roman Emperor, two antagony-theory and its results. To begin European history with the Reformation is to cultivate religious prejudice, and leads to a total misconception of the place and work of the Mediæval Church.

¹ Read carefully Freeman's Essay on "Holy Roman Empire." Also, Bryce, Ch. VII.

² On the work of the Mediæval Church, Guizot, "Lectures on Civilization;" First course, Lecture XII. The Church was the only uniting body in an age of disunity, disorder; its law the only law which bound all; its brotherhood a protection for the weak, an aid for the suffering.

³ With Charles the Great and Leo, with Otto III and his Popes, Gregory V and Sylvester II, with Henry III and the Popes which he set up, there was an approximate attainment of this ideal government. But Canossa showed the victory of the Papacy; the Concordat of Worms, largely brought about because the crusading spirit was giving Europe other things to think about, showed a division of power, and made clear that two powers were ruling the world. Milman's "History of Latin Christianity" has the best account in English of the whole relation. See especially Vols. III, IV, V.

nistic headships united in one person.¹ To this a third headship added. German king was king of Italy as well as Emperor.²

The Italian Republics.

The kingdom of Italy, of which the Emperor was king, and which was, to all intents and purposes, a part of the Empire, was made up of many elements.³ Feudalism never struck deep root. It had to struggle with three other elements: (1) Papacy frequently striving to be the head, but never succeeding; (2) Emperor technically head, but too busy and too distant to be actually so; (3) the Italian cities, petty states in themselves, centres of democratic government, free, wealthy. These cities, given great impetus by the Crusades, increased in numbers, some two hundred in all. Genoa, Pisa, Venice, Amalfi.⁴ Love of liberty specially developed in Lombardy,—result in part of preaching of Arnold of Brescia,⁵—Milan, Pavia, Turin, and others. These cities often compared to those of old Greece in love of independence, individuality, jealousy, lack of unity, formation of leagues. Famous struggle between Frederic I (Barbarossa) and these republics (1158–78). In some respects the noblest period of their history.

With the fall of Frederic II (1250) in his mortal struggle with the papacy, interference from the side of the Empire

¹ In theory the Emperor was chosen from no family, no nationality. Italians had been Emperors, a Spaniard had been chosen, even an Englishman. (See Bryce, *Table*, pp. xxii, xxiv.)

² Freeman's *Essay* on "Frederic I, King of Italy," brings this out clearly.

³ Study a good map carefully. Spruner, if possible; Freeman's "Historical Geography" with text excellent; Labberton, if nothing else is obtainable.

⁴ An excellent discussion can be found in May, "Democracy in Europe," Vol. I, Ch. VII, which treats of the development of these cities.

⁵ On Arnold of Brescia, see Milman, "Latin Christianity," Vol. IV, 226-269.

ceases;¹ but the ineradicable marks of the long struggle left in hostility of Guelph and Ghibelline; era of papal supremacy (1250-1300). But the papal supremacy lost its hold in 1309, when the Pope removed to Avignon and Babylonish Captivity begins.² With these two elements no longer dominant, the cities, influenced by a thousand whims and torn by dissension, began to develop a life, intricate, complicated, brilliant, full of activity, but politically rotten and ruinous. This is the age when rulers (despots) and families of rulers gain the headship of the important cities, Visconti and Sforza in Milan, Medici in Florence. In these cities centres of the new life, under these rulers patrons of the new learning, bloomed the flower of the Renaissance. In the midst of such astonishing disunity, internal conflict, dangers from without, which lasted until the descent of Charles VIII in 1495, appeared the first impulses which were to change the current of European civilization.

¹ Freeman's Essay on "Frederic II," though somewhat high-colored, is admirable. Notice that the Empire did not recover its control in Italy until the time of Charles V, and that then the old things were passing away, the age of Pope and Emperor was gone, the Renaissance and Reformation had come, and the era of modern politics was beginning. It was Charles V's failure to realize this that explains his place and part in the Reformation movement.

² The Pope did not recover supremacy for nearly one hundred and forty years, and then a very different man (Nicholas V), with very different pretensions, a Renaissance Pope, sat in the papal chair.

LECTURE II.

THE ANTECEDENTS OF THE RENAISSANCE.

REFERENCES.

- HALLAM, "Literature in Europe," I, Ch. I.
 MAY, "Democracy in Europe," I, Ch. VI.
 BURCKHARDT, "Renaissance in Italy," Part III.
 SCHAFF, "Renaissance," Ch. II.
 DURUY, "History of the Middle Ages," Bk. VII.

The Renaissance was not a period, it was a condition; therefore it has no dates, no geographical boundaries; its antecedents many and strong. Europe to the fourteenth century in a state of intellectual youth. The Age of Faith an age of intellectual infancy, when man had lived enveloped in a cowl. Life a probation, beauty a snare, pleasure a sin; feudal chivalry the only brightness.*

The Ancient Learning and Monuments.

After the sixth century zeal and study of classical literature inactive. To the world learning was dead; secular learning discouraged by the Church as bound up with heathenism. Monks preserved manuscripts not so much for their own sake as for the parchment; palimpsests. Church had little reverence for ancient monuments. Heathen temples defaced or torn down; popes pillaged Coliseum of its iron, Pantheon of its bronze; Rome a quarry for building-stone; forum levelled, turned into a

* "The work that occupied men in the Middle Ages was to reconstruct society on a Christian basis. With the organization of Christendom, there was an opportunity to think somewhat about the vagaries of the structure; when society was struggling against anarchy there was no chance of this. The new spirit, bred of Crusades, bred of spirit of European unrest, now sought a channel."—*Creighton*.

cow-pasture.¹ Same spirit towards individual thought. If mediæval mind could hardly learn, it had equal difficulty in thinking, except formally. Ecclesiastical decrees, the Councils, the Fathers, Aquinas, Augustine—what need to think?*

Steps Leading to a Change.

Certain irresistible tendencies leading to a reawakening. (1) *Crusades*, the most potent precursor of the Renaissance. To feudal Europe a wonderful gain. Opened its eyes to narrowness of feudal life. Young Europe on its travels. Saw new lands, new culture, new life; brought back new ideas, commodities, inventions; commerce invigorated, navigation improved. (2) *Democratic movement of Fourteenth Century*. Spirit of popular discontent, feeling of uneasiness throughout Europe. Communes in France and Italy; Rienzi, 1347; Jaquerie in France, 1358; Peasant Revolt in England, 1381; Rise of Swiss Confederacy, 1315; Sem-pach, 1386. (3) *The Intellectual Development*. Centres of literary activity from ninth to thirteenth century. (a) Court of Charles the Great; literature and schools not lasting. (b) Court of Hohenstaufen, Frederic II, at Palermo, in Sicily; brilliant renaissance, but a pastime; no deep influence, dilettante; did not strike chord of national life. (c) Revival of Roman law; recovery of original text stimulated legal studies, and, indirectly, classics as a whole. More than all, it gave new zeal for learning, gave early outlet to accumulating activity. (d) Scholasticism, in the

¹ Compare Gibbon, LXXI. Burckhardt, Book III, Ch. II. Creighton, "Papacy," III, 104. Schaff, "Renaissance," 38.

* Interesting to note case of Nicholas I and John Scotus (latter excommunicated for applying pure dialectics to matters of faith). Also Saint Bernard and Abelard. "Who are you, and what benefit do you bring us?" cried Bernard. "What subtle discovery have you made? Tell us what revelation has been made to you that has been made to no one else before you. . . . As for me, I listen to the prophets and apostles. I obey the gospels. And even if an angel should come from heaven to teach us what was contrary to these laws, he should be accursed."—*Duruy*, "History of Middle Ages" (Holt).

main unfruitful, kept thought active, created mental strength, often led to restlessness and freer thought. (e) Universities, result as well as cause of activity; the Renaissance spirit growing when young Europe is seen centred about these sources of wisdom; University of Bologna, Paris, Oxford, Salamanca, Prague; hundreds, sometimes thousands, of students. As the Renaissance era approaches, we see nations taking on more united form. France and Philip the Fair. England and Edward I. Germany and the Diet of Rense.¹

The Out-Blossoming.

Thus there was gradually accumulating a spirit eager for change, for a break from the monotony of scholasticism, the narrowness of thought and life. A spirit limited to no country, but impregnating all in varying degrees; a spirit with no special object, an enthusiasm desirous of entering upon any new effort. This spirit first took definite form in Italy. It was the Italian, not the Teutonic life which first felt the influence of the new energy and gave it its direction. Reasons: 1. The peculiar genius of the Italian people. 2. Italy, the home of old Roman life and literature. 3. Italians, conscious of their past, turned to antiquity. 4. When new energy had once taken form, it permeated every phase of Italian life. 5. Italy first felt the impulse which came from without, through commercial and other intercourse with Eastern Empire and Eastern Church.²

The form which this energy took was the Revival of Learning.

¹ Edward I and the first perfect parliament (1295); his taxation of the clergy in defiance of Rome; Philip IV, burning of the papal bull; meeting of first States-General (1302); the electoral diet at Rense (1338) in Germany, and the declaration that a legally elected German king was Roman emperor without papal sanction or coronation mark the break of nationality from the theocratic domination of the pope.

² "The reason why Italy took the lead in the Renaissance was that Italy possessed a language, a favorable climate, political freedom, commercial prosperity, at a time when other nations were still semi-barbarous."—*Symonds*.

*

LECTURE III.

REVIVAL OF LEARNING AND HUMANISM.

REFERENCES.

- SYMONDS, "Age of Despots," 1-31.
 —, "Encycl. Brit.," s. v. "Renaissance," 384-388.
 SCHAFF, "Renaissance," Chaps. II-VIII.
 BURCKHARDT, "Renaissance in Italy," Parts II, IV.
 WOOLSEY, *New Englander*, October, 1864, 661-698.
 OLIPHANT, "Makers of Florence," Ch. I (Dante).
 GIBBON, "Decline and Fall," LXX.
 MILMAN, "Latin Christianity," VIII, 334-349.

The Revival of Learning, one phase of the greater Renaissance, gave shape and direction to the whole. The pent-up forces applied themselves to the activity first offered. Revival of learning a culmination rather than a cause. Its great importance was that by diverting the energies of the active Italian mind to the study of the classics, it brought that mediæval mind into contact with the mind of man, universal man, working apart from the influences which had sprung up since the days of Rome.

Humanism.¹

What, therefore, awakening Europe *first* discovered through the medium of the ancient literature was not a new astronomy, not new methods of war or navigation, not a new art or architecture, but man himself, his powers and capabilities; then the beauty of the world he lived in and the proper relations existing between himself and that

¹ "The terms *humanism* and *humanist*, from *litteræ humanæ* or *humaniores*, the more humane studies, the literature that humanizes."—*Schaff*, 9.

world. This was the humanism of the Renaissance; when man had learned this, all things were possible. Man was dignified, his individuality was increased, he became a free being, born on earth with a right to use and enjoy it. Humanism took the form in Italy of beauty, in Germany of thought.¹ "The humanist saw the finger of God in reason, in science, in nature, in art, and taught men that life is worth living."—*Schaff*.

The Forerunners.

The heralds of the movement were Dante, Petrarch, and Boccaccio. The first stands on the threshold. Dante did not break away from his surroundings, his thoughts mediæval, lover of the Church but hater of its corruption, "a citizen of two worlds, standing with one foot in the old, yet ready to advance as the mighty leader of the children of the new age."—*Geiger*. In the "*Divina Commedia*" are ideas on theology, philosophy, natural science, astronomy, history, politics, antiquity, all permeated with mediævalism. Yet Dante loved nature, truth, and longed for Italian unity.² As poet, he was creator of Italian literature; as statesman, he desired peace but lived in exile; as philosopher, he was mediæval; as theologian, in harmony with the orthodox faith of his age. "In the fifteenth century he would have sympathized with Savonarola against Alexander VI; in the sixteenth, with Luther against Tetzl (but no further); in the nineteenth, with the Italian Patriots in their struggle for the unity of Italy against the temporal power of the Papacy."—*Schaff*.

Petrarch (1304-74), founder of Italian humanism. He

¹ The individual freedom of Italy was freedom of the mind, intellectual freedom, freedom to expand the capabilities of that mind which had been discovered through the humanistic movement. In Germany it was freedom of the soul and body, religious and political freedom.

² In *De Monarchia*. See R. W. Church, "Dante, an Essay."

consciously warred with the past; presented a new method of scholarship; imbued with the active spirit of humanism; the most cultured man of his age; indefatigable collector, thus inaugurating the true revival of letters. Wrote much in Latin; knew Greek very imperfectly; high in honorary dignities. Set standard for poetry as Boccaccio did for prose.

Boccaccio (1313-75), a true humanist; lover of all that was classical, though he quenched his thirst for Greek with water from a very muddy stream.¹ He broke from the mediæval asceticism, and filled his pages with sunny skies, fair women, with the beauties of nature and life.

Centre of New Life.²

Florence, though not strictly speaking the birthplace of humanism, was the source whence spread its invigorating influence throughout Italy and the rest of Europe. Florence gave herself over body and soul to the Revival, a beautiful Renaissance city. Due to these causes: (1) The political condition was favorable to learning, because favorable to the growth of freedom and individuality and leisure; leaders in government were wealthy and lovers of learning. (2) The social life of Florence was favorable to a rapid absorption and assimilation of the new life and thought: it permeated the city from noble to peasant, cardinal to cook. (3) The reputation of Florence made it a centre, attracting foreign scholars. Florentines visited Constantinople. Greek teachers came to Florence. Education became highly developed.

¹ Petrarch had a few lessons in Greek from Barlaam in Avignon, and Pilatus in Venice, but difficulties were enormous. Boccaccio went further, and learned more, studying under Pilatus. He even went so far as to translate *Iliad* and *Odyssey* into Latin.—*Cf. Symonds, "Revival of Learning,"* 90-93.

² On Florence, see Burckhardt, 73-87; Grimm, "Michael Angelo," I, 1-12; Symonds, "Revival of Learning," 162-213; Woolsey, *New Englander*, October, 1864, 674-677. Notice the frequent comparison by humanists and later writers of Florence with Athens.

LECTURE IV.

THE EXPANSION OF HUMANISM.

REFERENCES.

SYMONDS, "Revival of Learning," II-VII.

BURCKHARDT, "Renaissance in Italy," Part III.

WOOLSEY, *New Englander*, January, 1865, 35-110; July, 1865, 413-460; October, 1865, 605-673.

SCHAFF, "Renaissance," VIII-XVIII.

CREIGHTON, "Papacy during Reformation," II, 329-344; III, 34-53, 141, 215-246.

The humanistic era divides itself naturally into two periods and four stages, which show growth, expansion, transformation, and decay. First period to the Council of Florence (1438) and the pontificate of Nicholas V (1447), during which the spirit was local, uncertain, feeling its way. Latin was known; little Greek.¹ This was the age of enthusiasm for the collection of all that was ancient, good, and bad: materials few, criticism not yet developed, copies rare, transcribing expensive, progress slow, no great names. John of Ravenna connects Petrarch with fifteenth century humanists. In later part of era, enthusiasm passes to Rome; though "learning was always an article of artificial luxury at Rome, not as at Florence, part of the national life."—*Symonds*.

Era of Bloom.

Divisions in the Church had developed criticism, sharpened wits, called for more secretaries and orators of a higher order. Famous Council at Florence brought in learned Greeks, located the papacy for a few years in a humanistic

¹ Symonds, "Revival of Learning," 52-100.

city.¹ Result seen in elevation of Nicholas V to papal chair; swept in on the wave of Renaissance feeling. New influx of Greek learning from fall of Constantinople in 1453.² Era of great Florentine patron, Cosimo de Medici, and of many leading humanists, Salutato, Marsigli, Poggio, Filelfo, Becadelli, Aretino, Valla. Humanists rewarded by gifts of money, annuities, secretaryships, and bishoprics, though always liable to suffer from niggardliness or hostility of patrons. Rapid growth of immorality, flippancy, conceit.

Era of Influence.

Invention of paper and printing altered the whole character of humanistic movement, wonderfully enlarging its influence. Period of books, publishing houses,³ academies. Age becomes critical; books become accessible; grammars, texts; knowledge increased; humanism diffused; humanists themselves lose unique prestige. Books spread beyond Alps to France (Rabelais); to Germany (Reuchlin, Melancthon); to England (Erasmus, Colet). Libraries greatly increase in size; become public. As Cosimo was patron in Florence to 1464, so Lorenzo de Medici from 1469 to end of century. Work now not collecting, but commenting on and annotating recovered texts. Discussion of ancient philosophy, chiefly Plato. Platonic Academy at Florence. Poliziano, Ficino, Pico Mirandolo. The Academy closed about 1514. Rome, after Florence, the most important centre. Since Nicholas V, the pope sought rather their secular and temporal interests than the spiritual. A dead level of indifference and paganism. The Roman Academy, its leaders Plautina and Pomponius Laetus persecuted by Paul II.

¹ For the great schism in the Church, the Councils of Constance, of Basle, and the attempt to unite Eastern and Western Churches at Florence, see Gibbon, LXVI; Milman, Bk. XIII (Vols. V, VI).

² Usually much exaggerated in the influence which it exerted. See Woolsey, *New Englander*, July, 1865, 435-441.

³ For the Aldine Press, see Oliphant, "Makers of Venice," 393-409.

Renaissance of Art.¹

The period of Leo X, the Leonine era, was marked by a "culture which was most superficial, empty, and voluptuous. It had no earnestness, no love of truth, no originality, except among the artists, no spur to anything manly or noble."—*Woolsey*. As the decadence in classical learning takes place, the renaissance of classical art begins. As classical literature showed man the capabilities and beauties of the human mind, so classical art (the Laocoön, Apollo Belvedere, etc.) showed man the beauties of the human form. Renaissance art marks the breaking away from the flatness, gracelessness of the mediæval artists. Holiness and beauty become one. Variety, exuberance, joy, naturalness, pervade the new art. Sculpture and painting reach their acme in this High Renaissance of Art. Leonardo da Vinci, Bartolommeo, Fra Angelico, Michael Angelo, Titian, Raphael, Correggio. "It is remarkable that these artists should have flourished within the same generation (1490–1520). Most of them stood¹ in personal relation, yet each had his own individuality; what a variety of gifts were combined in Leonardo da Vinci and Michael Angelo, who excelled alike as architects, sculptors, painters, and poets! The former was, besides, a chemist, engineer, musician, merchant, and profound thinker."—*Schaff*. Hallam says that he anticipated the work of many great men of later times.

¹ Hoppin, J. M., "The Early Renaissance and other Essays on Art Subjects." Symonds, "The Fine Arts." Rebers, "Mediæval Art."

LECTURE V.

DECADENCE AND MORAL DEFECTS.

REFERENCES.

- SCHAFF, "Renaissance," XXIII, XXIV.
 BURCKHARDT, "Renaissance in Italy," Pt. III, Chaps. VII-XI, Pt. VI.
 SYMONDS, "Revival of Learning," 217-218; 233-245; 254, 259; 267-289 (Filelfo); Ch. VII, 504-507, Ch. IX.
 CREIGHTON, "Papacy during Reformation," III, 35.
 WOOLSEY, *New Englander*, January, 1865, 90-110; October, 1865, 642-673.

In understanding the causes which led to the downfall of humanism and the corrupt condition of Italy during the last half of the fifteenth century, we must take into account three things: (1) The genius of the Italian, over-enthusiastic, lacking moderation. (2) The character of the new learning, much of it harmful and paganistic. (3) The rapid and complete absorption of this learning. Add to this that the Church presented no standard of morals and cared little for religious consistency. Italy, on this account, is said to have sacrificed herself in giving birth to the impulse which was so eagerly taken up by the Western world.

The New Literature not Creative.

While the impulse was vigorously progressive, the character of the literature and of the humanistic thought was retrogressive: looked backward not forward. Little originality, depth, or earnestness. No high moral purpose, no looking forward to society improved. Italy became choked with all that was classical; this checked the native impulses of the Italian people and prevented the growth of a fruitful native genius. Latin the fashion, classics the only model,

the standard of life ; and the bad were taken with the good. Little discrimination ; nay, worse, no desire to improve on past models. Humanists self-satisfied, vain, presumptuous. Filelfo greater than Cicero or Virgil.¹

Decadence in Morals and Faith.

With such retrogressive intellectual standard, with no political standard, it was to be expected that the moral standard would be low. "Because," said Machiavelli, "the Church and her representatives set us the worst example." In the later period the Papacy ceased to offer any resistance to the corruption of the age. The popes themselves libertines ; absence of purity, chastity, and virtue, though family life was preserved. The political rottenness a condition favorable to political immorality. Murder and poison in high places, vendetta, brigandage, principles seen in Machiavelli's writings. Such condition results from exaggerated independence of the individual, as possessing a sovereignty greater than law, whether moral, political, or religious. Absence of moral responsibility characterizes this era and explains its lawlessness.

If morals were bad, faith was gone. Curious mixture of paganism and Christianity ; revived antiquity brought gods,

¹ Yet due credit must be given to even the worst of the humanists. They "cleared the way for European culture. They were not men of creative genius ; their merits are scientific rather than literary. They rescued from destruction the treasures of antiquity and prepared the way for a proper understanding of them. Their method was crude ; their knowledge was imperfect ; their attention to the rhetorical forms ludicrously exaggerated. Yet they laid the foundation of classical philology, the science of grammar, of intelligent criticism, of clear expression. They stood at the opening of a new era, and their labors only furnished the foundation for others. One generation of scholars succeeds another and the past are soon forgotten, however great may have been their services to a better understanding of the classical spirit, however great may have been the impulse which that heightened knowledge gave to the thought of Europe."—*Creighton*.

goddesses, nymphs, and satyrs to the front. Belief in omens, magic, astrology, heightened. More than that, humanists often pagans in fact, though ostensibly Christians. "The populace had sunk into almost heathen superstition, and expected their salvation from mere ceremonial observance, which was but half understood; the higher classes were manifesting opinions of a tendency altogether antireligious."—*Ranke*.

A more dangerous tendency was the attempt to reconcile paganism with Christianity, to unify philosophy and religion. This prevented the purification of the Church by substituting unification for reformation. In this attempt to harmonize and make one the Christian age and the revived classical age the ancient philosophers as well as the gospels were considered as testifying to the truth of Christianity; the Sybils were placed on a level with the prophets.¹

Savonarola.²

This paganization of taste and morals, this loss of faith and obedience to law, called into being the great preachers of repentance, of whom Savonarola was the chief. He desired the purification of the Church, not her reconstruction. His work was political as well as religious; he was not the forerunner of Luther so much as of the leaders of the

¹ "There were, indeed, manifold signs that the new learning was eating out the heart of the religious sentiment of Italy, and that in so insidious a way that it was hard to see when and how the voice of protest should be raised. The Renaissance did not set before its votaries a definite system of thought, nor did it oppose any of the doctrines of the Church. It was an attitude of mind rather than a scheme of life. It did not attack Christianity, but it turned men's minds away from Christianity. It did not contradict ecclesiastical dogma, but it passed it by with a shrug as unworthy of the attention of a cultivated mind."—*Creighton*, III, 35.

² On Savonarola, see *Life* by Villari; Oliphant, "Makers of Florence," IX-XIII; Burckhardt, "Renaissance," 466, ff.—*Nation*, April 20, 1882, p. 336.

Council of Trent. His work marked a step in the reformation of the Church herself, that very reformation the sternness of which chilled the work of the literary renaissance in southern Europe in the next century. Italy had accomplished her work, other nations were to reap the fruits.

LECTURE VI.

THE GREATER RENAISSANCE.

REFERENCES.

- HALLAM, "Literature in Europe," I, Ch. III, § 137 to end, Ch. IV.
 DRAPER, "Intellectual Development of Europe," II, Chaps. VI-VII.
 GUIZOT, "Lectures on General Civilization," XI, XII.
 FISHER, "History of Reformation," 67-84.
 SYMONDS, "Catholic Reaction," II, Ch. XIV.
 —, "Encyc. Brit.," s. v. "Renaissance," 387-394.
 GREEN, "History of English People," Book V, Ch. II, §§ 503-526.
 "Revival of Learning" (for England).
 PALGRAVE, in *Nineteenth Century*, November, 1890 (for England).
 BEARD, "Martin Luther," Ch. III (for Germany).
 BRYCE, "Holy Roman Empire," XVIII.

Using "Renaissance" in its broadest and noblest sense, the Revival of Learning marks only the opening phase of an organic change in the equilibrium of society. Revival of Learning preceded Reformation, and was as necessary to it as Reformation was necessary to the renaissance in science and philosophy. The humanist was as necessary to Luther as was Luther to Bacon and Descartes. The broadening of the new life was not confined to letters.

Renaissance and Reformation.

The immediate results of the Renaissance in England brief, though of most important character. Erasmus, Colet,

More, in one sense humanists, were also reformers, and prepared the way for English reformation. Because, therefore, the disturbances of the Hundred Years' War and War of Roses prevented an earlier literary movement, and because the work of the Oxford reformers took so earnest and serious a turn, the full blossoming did not take place until the middle of the sixteenth century. This lateness may account for the richness and variety of the Elizabethan literature.

But in Germany the influence immediate and double. (1) It developed a slower but more thorough scholarship, which took for its study both antiquity and the religious writings. Scriptures studied in original; a standard raised wherewith to judge the Mediæval Church. As classics emancipated human mind in Italy, so Bible emancipated human conscience in Germany. (2) The moral defects of the Italian movement could not fail to be noticed by those who still revered the Church. Savonarola lived in the midst of this life. Erasmus was sobered by it in 1506. Luther was shocked in 1510. The Reformation followed in Germany and England; not as an isolated event, but as a part of "that accelerated action of the human mind which we call the Renaissance: the Reformation displays in the region of religious thought and national politics what the Renaissance displays in the sphere of culture, art, and science."—*Symonds*.

The Geographical Renaissance.

While printing was changing the educational equilibrium of society and gunpowder the military, a change of even greater importance was taking place. As the revival of letters had brought out the Bible and the Fathers to be restudied, to the weakening of authority of mediæval church, so it brought out famous old geographers, Strabo, Ptolemy, Mela, and others, to stimulate a movement in navigation and discovery. Printing spread the old views regarding

sphericity of earth.¹ The wandering spirit active since Crusades—Marco Polo, Xeno brothers—now received renewed impetus. Tales of Sea of Darkness, of Atlantis, of a western passage to India came to ears of navigators; the discovery of the world was taking place, and it was not an accident that Italy supplied all the great navigators, Cabot, Columbus, Vespucci, Verrazano. In an age of discoveries a new world was found,—America.*

Importance of this geographical movement inestimable; it displaced centre of gravity in politics and commerce. Italy and Mediterranean no longer centre. New lands, new waters, new peoples. Old lines of commerce displaced. Atlantic, queen of waters; bordering nations increase in importance. Instead of Empire and Papacy, new combinations of nations arise. Spain, France, Portugal, England, and their interrelations stand for a new order of things. The dual supremacy of Emperor and Pope broken both in politics and religion.

A Broader and Deeper Look.

Summing up what the Renaissance accomplished. (1) Man discovered himself and the powers of his own mind and body; this gives rise to a new era in art, literature, and philosophy. (2) Nations discover themselves, giving rise to firmer establishment of monarchy, to diplomacy, to international relations, to a new political era. (3) Man discovers the world in which he lives, thus enlarging his horizon, increasing the importance of nationalities, giving new domains to be colonized and Christianized; new wants, new commodities; new commercial routes. (4) With the work of Copernicus and Galileo and the telescope, man discovered

¹ For examination of views of old geographers as showing the advanced ideas held by many of them, see Winsor's "Narrative and Critical History of America," Vol. I, Chap. I.

* Mr. Winsor's work on Christopher Columbus shows, with commendable clearness, the bearings of this geographical Renaissance.

the universe, of which his world is but a part. Old Ptolemaic theory gave way to Copernican, which declared (1) that the earth revolved; (2) that it was not the centre of the universe.

Result, accumulation of new ideas. Man no longer satisfied with ready-made answers of churchmen. He wants new answers to old questions, and presents new questions. Conceptions of God change; the world a place of enjoyment as well as of probation; its phenomena to be studied; its laws to be discovered; its order to be understood.

EXERCISES.

I.

1. Who were the Hohenstaufens, and what did they do for the Mediæval Empire?
2. Explain the origin and later history of the terms Guelph and Ghibelline.
3. What influences led to the growth of the Italian cities? —take Venice, for example. Describe that form of government which was most common.
4. Which were the five leading States in Italy at the time of the Renaissance? Discuss briefly the life within them and the relations between them.

II.

1. How was classical learning preserved during the Middle Ages?
2. Why was the Church so strongly opposed to the secular learning?
3. Examine any one of the phases of the Intellectual Development mentioned in the syllabus.
4. Do the same for the Democratic Movement.
5. Why was Italy the first to feel the new impulse?

III.

1. Define humanism. What was a humanist, and why so called? Who was the first humanist, and why?
2. Compare Dante and Petrarch in their relation to the Revival of Learning.
3. Prove by illustration that in Florence the Renaissance was a part of the national life.
4. Compare the character of the classical revival in Venice with that of Florence.

IV.

1. Analyze carefully the periods of humanism as given by Symonds.
2. Give a brief sketch bringing out the individual characteristics of any two of the following : Poggio, Filelfo, Pomponius Laetus, Pico Mirandolo, Nicholas V, Pius II, Paul II.
3. Discuss the work of the Platonic Academy.
4. Do the same for the Roman Academy.
5. Characterize the art of the later Renaissance, with selected examples.

V.

1. Why has so little of the humanistic literature survived ?
2. Show by examples that Italy was losing its love for Christianity in its zeal for the classics. What explanation can you offer ?
3. Discuss the attitude and opinions of Leo X. What was the character of the Leonine Era ?
4. What was Savonarola's work ? Who was Vittoria Colonna, and what tendency does she represent ?

VI.

1. Compare a humanist of Italy with a humanist of Germany (Reuchlin) or of England (Erasmus).
2. What was the effect of printing upon the expansion of learning ? Note this with special reference to Germany.
3. What old geographers were brought to light by the Revival of Learning ? Who was Toscanelli ? What is the bearing of this upon the work of Columbus ?
4. Rome did not fall in 476. Can we say that it was not until the Renaissance and Reformation had done their work that the living influence of old Rome came to an end ? Explain.

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No. 39.

Price, 10 cents.

BOOKS BEARING ON THE SUBJECTS OF THE COURSE.

Chisholm's *Hand-book of Commercial Geography* will be found the most useful book of reference, especially in relation to the last lecture. Gibbons's *History of Commerce in Europe* is one of the only small books bearing on the whole subject. The following volumes are all useful in their several departments: Rawlinson's *Phœnicia*, Bosworth Smith's *Carthage and the Carthaginians*, Hunt's *Italy*, Zimmern's *Hansa Towns*, Hutton's *James and Philip Van Arteveld*, Morse Stephens's *Portugal*, Rogers's *Holland*, and Loftie's *London*. Arnold Toynbee's *Industrial Revolution*, and Cunningham's *History of English Industry and Commerce* are invaluable, but refer too specially to England for the purposes of this course of lectures. Students should have by them, for reference in matters of general political history, Freeman's *General Sketch of European History*, and will do well to read Seebohm's admirable little volume on the *Protestant Revolution*, taking special note of the commercial changes recorded. They should also have accessible a good atlas.

REFERENCE BOOKS.

	Publisher's Price.	University Extension, Student's Price.	Post- paid.
Chisholm's <i>Hand-book of Commercial Geography</i>	\$5.00	\$3.75	\$3.94
Gibbons's <i>History of Commerce in Europe</i>80	.90
Rawlinson's <i>Phœnicia</i>	6.00	4.50	4.75
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Cunningham's <i>History of English Industry and Commerce</i>	4.00	3.60	3.80
Seebohm's <i>Era of Protestant Revolution</i>	1.00	.75	.83
Hutton's <i>James and Philip Van Arteveld</i>20	.16	.18
Toynbee's <i>Industrial Revolution</i>	1.00	.80	.90

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LECTURE I.

TYRE AND ALEXANDRIA.

1. The great centres of population in the valleys of the Euphrates and the Nile.
2. The caravan traffic through Tadmor and Damascus.
3. The land of Phœnicia. The position of Tyre and Sidon.
4. The Phœnician colonies. Gades. Carthage. The lands of Tarshish and Ophir.
5. The Phœnicians among the Greeks.
 1. The Greeks round the Ægean and Ionian Seas. Corinth.
 2. *Naucratis*, the Greek Shanghai.
 3. The March of Alexander. Antioch. Alexandria.
 4. Four ancient trades:
 - a. The amber trade.
 - b. The tin trade.
 - c. The corn trade.
 - d. The eastern trade.
 5. The relation of the city of Rome to trade.

NOTE.—Four passages in the Bible have a close bearing on the subjects here discussed: 1 Kings, V to X inclusive; 2 Chron., II to IX inclusive; Ezekiel, XXVI to XXVIII inclusive; Acts, XXVII and XXVIII.

Important Dates.

Alexander the Great reigned B.C. 336–323.
Augustus, Emperor, B.C. 27–A.D. 14.
Alaric sacked Rome, A.D. 410.
Rome void of inhabitants, 546–7.
Alexandria taken by the Saracens, 640.

LECTURE II.

THE SOUTHERN SYSTEM OF THE MIDDLE AGES—VENICE AND GENOA.

1. Constantinople, Byzantium, New Rome—"the great city"—the centre of such trade as existed from the seventh to the eleventh centuries.

2. Amalfi and Venice, the chief western traders with Constantinople. The slave-trade.

3. The rise and position of Pisa. Her struggles with the Saracens, the Genoese, and the Florentines.

4. Genoa. Her struggles with Venice. Her trade in the Black Sea. The Bank of St. George.

5. Florence. Her weavers, goldsmiths, and bankers. The bankruptcy of the Peruzzi and the Bardi. The acquisition of Leghorn by the Medici.

6. Milan. Her armorers and weavers.

7. Venice. The Huns. Salt, Fish, and Corn. The Crusaders. The taking of Constantinople. The struggle with Genoa. The trade of the fifteenth century—*a*, overland (by Augsburg and Cologne to Bruges); *b*, by sea (to Tarsa, the Aleppo ports, Alexandria, and Flanders).

8. The Turkish Conquests.

9. The Italian pilots,—Columbus, Vespucci; the Cabots.

10. The last voyage of the Flanders fleet.

11. The Venetian wars with the Turks.

Important Dates.

Constantinople made capital of the Empire, 330.

Foundation of Venice, A.D. 451.

Fall of Amalfi, circa 1200.

The Fourth Crusade. Fall of Constantinople, 1204.
 Fall of the Latin Empire in the East, 1261.
 Battle of Meloria. Victory of the Genoese over the
 Pisans, 1234.
 Travels of the Venetian, Marco Polo, 1272-1295.
 Bankruptcy of the Bardi and Peruzzi, 1345.
 War between Venice and Genoa, 1379-81.
 Pisa taken by the Florentines, 1406.
 America discovered by Columbus, 1492.
 The Cape road to India discovered by Vasco da Gama,
 1497-98.
 Venetian and Egyptian fleet at Suez, 1508.
 The League of Cambray, 1509.
 Fall of Florence, 1530.
 The "Flanders galleys" last at Southampton, 1532.
 Venice taken by Napoleon, 1797.

The Turks enter Europe, 1343; take Adrianople, 1361;
 defeat the Servians at Kossovo, 1389; are defeated by
 Timur at Angora, 1402; take Constantinople, 1453; take
 Kaffa, 1475; enter Italy in the North, 1477-78; enter Italy
 in the South, 1480-81; conquer Syria and Egypt, 1516-
 17; take Buda, 1526; besiege Vienna, 1529; besiege Nice,
 1543; are defeated at Lepanto by Don John of Austria,
 1571.

LECTURE III.

THE NORTHERN SYSTEM OF THE MIDDLE AGES—BRUGES AND HAMBURG.

1. Many towns founded in Saxony by Charles the Great, among them Hamburg.
2. In the tenth and eleventh centuries the Counts of Flanders foster the growth of Bruges and Ghent.
3. The Norman Conquest makes England the great wool-growing country of Europe.
4. Hamburg and Lübeck make an alliance in A.D. 1200, which by 1300 has been extended to some seventy cities. The Hansa.
5. The four great Hanseatic "factories,"—Bruges, London (the Steelyard), Bergen, and Novgorod.
6. The merchants of the "staple" in England.
7. The Treaty of Utrecht. The culmination of the power of the Hansa.
8. The fall of the Hansa.
9. Augsburg and Nuremberg.
10. The terms "Hansard" and "Sterling."

Important Dates.

Charles the Great, Emperor, A.D. 300-314.
 Battle of Hastings, 1066.
 Treaty of Utrecht, 1475.
 Novgorod destroyed, 1570.
 End of the Steelyard, 1597.
 The Thirty Years' War, 1618-48.

LECTURE IV.

THE TRANSITIONAL AGE—LISBON AND ANTWERP.

1. The causes of the great change in Trade routes :
 - a.* Material—the mariner's compass, gunpowder, printing.
 - b.* The Books of Ptolemy and Marco Polo.
 - c.* The Conquests of the Turks.
2. The Crusade of seven centuries in the Spanish peninsula. The Portuguese cross the sea to attack the Moors in Africa.
3. Prince Henry the Navigator.
4. The Portuguese in the Indian Ocean. Their struggle with Egypt and Venice. Albuquerque.
5. The Goa fleet.
6. The harbor of Bruges blocked.
7. The struggle between the Staplers and the Adventurers. The fall of Bruges and the rise of Antwerp involved in the victory of the Adventurers.
8. Antwerp at her greatest.
9. The Spaniards conquer Portugal and ruin Antwerp.

Important Dates.

Cannon used at Cressy, 1346.

Gutenberg's Latin Bible printed, 1456.

Battle of Xeres, 711.

Centa taken by the Portuguese, 1415.

Maximilian of Austria blocked the harbor of Bruges, 1482.

Triumph of the Adventurers over the Staplers, circa 1516.

Portugal conquered by the Spaniards, 1580.

Antwerp taken by the Duke of Parma, 1585.

See also the dates appended to Lectures II. and III.

LECTURE V.

AMSTERDAM AND LONDON.

1. The "Holtland" or Woodland. The Rhine Delta and the Danes.
2. The Counts of Holland. The Herring fishery.
3. Migration of Antwerp Protestants to Holland.
4. Lisbon closed to the rebellious Dutch by the Spaniards. The Dutch driven to trade with the East.
5. Amsterdam equivalent to both Lisbon and Antwerp. The Portuguese Colonies legitimate prey for the Dutch.
6. The Dutch East India Company.
7. The Bank of Amsterdam.
8. The Spice monopoly. The massacre of Amboyna.
9. The English Navigation Acts.
10. William of Orange's struggle with France. His conquest of the English throne.
11. The English National Debt and the Bank of England.
12. London supreme in the commerce of the eighteenth century. The Commercial History of London.

Important Dates.

- Lisbon closed to the Dutch, 1591.
 The Dutch East India Company, 1602.
 Massacre of Amboyna, 1624.
 Navigation Act, 1651.
 William III. of England, 1688-1702.
 Bank of England founded, 1694.

LECTURE VI.

NINETEENTH CENTURY CHANGES.

1. The Industrial Revolution.
2. The Great War.
3. Railways, Steamers, and Telegraphs.
4. The Erie Canal, the Alpine Tunnels, the Trans-American and Trans-Asiatic Railways.
5. The growth of the American and Colonial populations.
The Corn trade to Europe.
6. The English tongue.
7. The coming difficulties of Commerce.

Exercises.

1. Compare Tyre and Alexandria as centres of ancient trade.
2. The histories of the two great commercial cities, Constantinople and Venice, are constantly related, and yet strangely different. Exemplify this statement.
3. Describe the functions of the "merchants of the staple" and of the Hanseatic League.
4. Point out the causes which led to the victory of Antwerp over Bruges as the commercial metropolis of the north.
5. Point out the causes which led to the rise and to the fall of the Dutch as the leading commercial nation of the world. Was the fall inevitable?
6. Estimate the commercial results of the Industrial revolution.

NOTE.

The class will be held at the end of each lecture, during which further information will be given on points not fully treated. Those who desire to do the exercises, given at the end of the syllabus, are requested to send them in writing to Dr. F. W. Moore, University of Pennsylvania, West Philadelphia, who has kindly consented to assist Mr. Mackinder. The papers will be examined and returned at the class following the next lecture. Shortly after the close of the course an examination will be held, open to those who have attended at least four of the lectures and classes, and written a corresponding number of satisfactory papers. On the basis of the weekly papers and the examination, certificates of the American Society for this course will be awarded.

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FOR THE
EXTENSION OF UNIVERSITY TEACHING.

SYLLABUS
OF A
COURSE OF LECTURES
ON
The Change in Political Economy
With an Outline of a Course of Study.

BY
MICHAEL E. SADLER, M.A.,
STUDENT AND STEWARD OF CHRIST CHURCH, OXFORD; SECRETARY, AND
FORMERLY LECTURER, TO THE OXFORD UNIVERSITY EXTENSION.

Price 20 Cents.

"Interest, which blinds some people, enlightens others."

FRANKLIN, *Poor Richard*, for 1745.

"Deux mouvements de nature différente agitent aujourd'hui la société; l'un de désorganisation, l'autre de réorganisation."

AUGUSTE COMTE, *Catéchisme des Industriels*, 1824, p. 10.

"Toute la société doit travailler à l'amélioration de l'existence morale et physique de la classe la plus pauvre; la société doit s'organiser de la manière la plus convenable pour lui faire atteindre ce grand but."

ST. SIMON, *Nouveau Christianisme*, 1824, p. 173.

"The practical issues which are a motive in the background to economic inquiries vary from time to time and from place to place. But the following problems are now of special urgency. How should we so act as to increase the good, and diminish the evil, influences of economic freedom? . . . What are the proper relations of individual and collective action in a stage of civilization such as ours? . . . What scope is there for the moral pressure of social opinion in constraining and directing individual action in those economic relations in which the rigidity and violence of government interference would be likely to do more harm than good?"

PROFESSOR ALFRED MARSHALL, *Principles of Economics*, 1890, pp. 96-98.

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SELECTED LIST OF BOOKS.

I. SUBJECT-MATTER.

- The Wealth of Nations.* By Adam Smith.
L'Industrie.
L'Organisateur. } By St. Simon.
Du Système Industriel.
Catéchisme des Industriels.
Nouveau Christianisme. }
Principles of Political Economy. } By John Stuart Mill.
Autobiography. }
Economic Studies. By Walter Bagehot.
The Wages Question. By General Francis Walker.
Principles of Economics. By Alfred Marshall.

II. HISTORY.

- History of Political Economy,* with Introduction, by Edmund J. James. By Dr. Ingram.
The Industrial Revolution. By Arnold Toynbee.

III. CRITICISM.

- Essays in Political Economy.* By T. E. Cliffe Leslie.
Adam Smith. By R. B. Haldane.
St. Simon et le St. Simonisme. By Paul Janet.
Les Économistes Français du XVIII^{me} Siècle. By Léonce de Lavergne.
Histoire des Doctrines Économiques. By A. Espinas.
Unto this Last. By John Ruskin.

SUGGESTED COURSE OF READING ON THE SUBJECT.

The best book to begin with is Dr. Ingram's *History of Political Economy*, originally published in Part 74 of the *Encyclopædia Britannica*. The student will do well to read the whole of Dr. Ingram's treatise beginning with the section headed "Third Modern Phase; System of Natural Liberty."

This done, the reader should turn to Mons. de Lavergne's *Economistes Français de dix-huitième siècle* (1870, Paris, Guillaumin). Convenient chapters will also be found in Mons. Espinas' *Histoire des Doctrines Economiques* (Paris, Colin, 1891), especially Part 4.

Next, the student should certainly read Adam Smith's *Wealth of Nations*. He is strongly advised not to content himself with any summary or analysis of this great work, the style of which has an incommunicable charm. Taken in its historical position, this classical treatise on Political Economy will be found by the student to be of immense value to him in later researches.

After reading Adam Smith, turn to Cliffe Leslie's *Essays on Political and Moral Philosophy*, second edition, especially Essays 3, 5, 7, 14, 15, 16. Special attention should be paid to Book 5, Chapter 1.

Haldane's *Life of Adam Smith*, 1887, will also be found useful, but advanced students will also derive much pleasure from Dugald Stewart's *Account of Life and Writings of Adam Smith*, prefixed to Wakefield's edition of *Wealth of Nations*, 1843.

At this point Toynbee's *Lectures on the Industrial Revolution* should be carefully read, together with Brentano's *Guilds and Trade Unions*.

He should then turn to Saint Simon, reading his *Autobiography* (Volume I of the collected works, Paris, Dentu, 1868), and paying special attention to Vols. III, IV, V, VI of the collected edition and particularly to *L'Industrie, L'Organisateur, Du système industriel*, and the *Nouveau Christianisme*.

For the life of Saint Simon, read *Saint Simon et le Simonisme*, Janet (Paris, Bailliere, 1878).

Then take Vol. IX of Saint Simon's Collected Works, and read *Catéchisme des Industriels* (troisième cahier) which is really Comte's work. Next compare this with Comte's *Système de Politique Positive*, especially *Appendice Général*, troisième partie (édition, Paris, 1854). Also refer to Littré, *Auguste Comte et la Philosophie Positive*, especially Chapter III.

For the influence of these ideas on English Political Economy read John Stuart Mill's *Autobiography*, especially the end of Chapter II and the whole of Chapter V and the greater part of Chapter VII.

For the later development of Political Economy read Bagehot's *Economic Studies* and Professor Henry Sidgwick's *Principles of Political Economy*, especially Books I-III.

For the protest against Political Economy make a careful study of John Ruskin's *Unto this Last*; also read Ruskin's *Munera Pulveris* and *Fors Clavigera*. Refer also to Karl Marx's *Capital*.

For a summary of the present position of Political Economy consult Professor Marshall's *Principles of Economics*.

TABLE OF DATES.

- Adam Smith born 1723.
Meets the Physiocrats in Paris 1764.
Publication of *Wealth of Nations*, 1776.
Arkwright invents the water-frame, 1769.
Hargreaves patents the spinning-jenny, 1770.
Crompton's mule introduced, 1779.
James Watt patents the steam-engine, 1769.
Steam-engine applied to cotton manufactory by Boulton and Watt, 1785.
Power-loom patented by Cartwright, 1785.
Adam Smith died 1790.
Saint Simon born 1760.
Saint Simon publishes *Réorganisation de la Société Européenne*, 1814.
Saint Simon died 1825.
John Stuart Mill born 1806.
John Stuart Mill first meets Saint Simon 1820.
John Stuart Mill deeply affected by Saint Simonian writings, 1829 onward.
J. S. Mill's *Principles of Political Economy*, published 1848.
Darwin's *Origin of Species*, published 1859.
Ruskin's "*Unto this Last*," published 1860.
Karl Marx's "*Capital*," published 1867.

LECTURE I.

ADAM SMITH AND THE REACTION AGAINST OBSOLETE RESTRICTIONS.

Adam Smith and the reaction against obsolete restrictions. Alleged decline in the authority of Political Economy examined. Reasons for believing that Economic literature was never more studied than at present. The only real loss that suffered by a narrow and somewhat artificial school of economists working under self-imposed limitations.

The need of a wider point of view in Political Economy, together with a careful retention of accurate methods of observation and analysis.

It is necessary that Political Economy should be regarded as an Art as well as a Science, and that it should take its place in the group of sociological studies.

Since the publication of *Wealth of Nations* in 1776 the true aim of Political Economy has been practical, and it has become more increasingly responsive to the ideals of Social Reform.

Adam Smith cannot be understood unless his historical environment is also considered. He will then be found to belong to the negative and critical movement of the revolutionary period of the eighteenth century. The object of these lectures is to show at once the permanent value and yet the incompleteness of his teaching; to trace the influence of the reaction led by Saint Simon in favor of reorganization and State interference; and, in the third place, to show that recent Political Economy, as compared with that of fifty years ago, shows a significant change of temper and of attitude, which is due to it having incorporated the best influences of both Adam Smith and Saint Simon.

Adam Smith's own definition of the practical objects of Political Economy. The narrowness of this definition as compared with that given by Mr. Ruskin in *Munera Pulveris*. The difference between the two definitions significant of the progress of economic studies.

Adam Smith's view of the Labor Question that of a man who lived before the Industrial Revolution. He regarded the nation as an aggregate of independent producers, mostly working on a small scale, and, by division of tasks, severally undertaking with the rapidity and precision attained by practice, that department of production for which they were fitted by geographical position, native aptitude or acquired skill. He believed that the removal of all interference would safeguard and promote the interest of each of these separate economic units. His belief in the mysterious guidance of Nature was the metaphysical substratum of his economic doctrine.

Adam Smith's life and studies at Glasgow and Oxford, Professor at Glasgow 1751. The comprehensive scope of his professorial lectures, throwing light on Adam Smith's view of the relation between Political Economy and Ethics. The invigorating contact of his academic interests with practical life. His visit to France and friendship with the French Economists, the Physiocrats. Close connection between Adam Smith's theories and those of the Physiocrats. The attitude of the latter school toward obsolete methods of State interference and their enthusiasm for a policy of liberty, which they advocated, partly on economic, partly on metaphysical grounds. Adam Smith's sympathy with, but corrections of, their doctrine.

Adam Smith fitted by nature, education and foreign travel, for his position as a great economist. His great book to be regarded as neither the commencement nor the conclusion of Political Economy, but as a most significant episode in the history of the science.

Adam Smith's prejudice against State interference led him to minimize the possible usefulness of the Govern-

The Change in Political Economy.

ment. The significant exception which he makes to this doctrine of non-interference in regard to public education. Possible influence of Turgot on Adam Smith during the composition of *Wealth of Nations*.

His inability to grasp the democratic ideal of the State makes Adam Smith's work old-fashioned. We see, however, in the prominence which he gives to *labor* in the "Wealth of Nations," the stirrings of the democratic movement. But he is, however, significantly deficient in sympathy with the misfortunes of the poorest class. He failed to touch the conscience of humanity as well as its prudence. Inevitable reaction followed.

LECTURE II.

ST. SIMON AND THE REACTION AGAINST CRITICAL POLITICAL ECONOMY.

The historical study of Economics deprives the great works of their *unexpectedness*. The inevitableness of economic developments. Nature of Economic reaction. Reaction itself, shown to be almost always a form of growth; a development, not a see-saw. This view confirmed by the nature of the development of economic facts to which economic theories are related; individualism and socialism, properly viewed, being necessary complements to one another, not mutually exclusive alternatives; antithetical, not contradictory.

The reaction against the revolutionary criticism, and disappointment at the failure of the system of "Natural Liberty" to heal economic wrong. Increasing tendency to employ historical methods in economics; (compare Malthus' use of historical arguments in his controversy with Godwin, who relied more on *a priori* assumptions).

The great contributions of Saint Simon to Political

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Economy. His profound influence on its temper and ideals. His life and political career, and summary of his economical position. Philosophical tenets of Saint Simon :

- (1) Organic and critical periods follow one another in human development.
- (2) Social changes are the result of long chains of causes.
- (3) Historical study is needed to throw light on social developments.
- (4) The government of an industrial country should be in the hands of the industrial classes ; should be strong, open to suggestions, originaive, critical and administrative ; careful to protect and to further the artistic and decorative side of human life, as an agency in human education and civic well being.

The debt that we owe to Saint Simon for the moralization of economics. The relation between Saint Simon and his pupil Comte, the founder of Positive philosophy. The influence of Saint Simon on John Stuart Mill and, through Mill, on English economics.

The weakness of Saint Simon's schemes was their arbitrary nature. He had not really grasped the scientific method. Like Adam Smith, though in a different sense, he was under the impression that it was somehow possible to discover a pattern of social reorganization suitable for general adoption. The ideal State of Saint Simon too dogmatic and *doctrinaire*. Mazzini's criticism of it. Saint Simon blind to the industrial revolution and its economic consequences. Yet he and his like were prophets of a new era. While we discard their errors, we must retain what was of permanent value in their contribution to economics.

Chief ideas of Saint Simon :

- (1) Peaceful Federation of European Nations.
- (2) Technical and unsectarian education.
- (3) Suggestion that the administrative ability of the

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working classes should be employed in the Government.

- (4) The theory that true civic liberty is realized not in isolation, but in development of associated effort.
- (5) Ideal of democratic sovereignty.
- (6) Plea for philanthropy and for the discharge by the State of its duty to the poorest class.

LECTURE III.

THE NEW DEPARTURE.

The facts of the Industrial Revolution speedily made many of the proposals of Adam Smith and St. Simon obsolete. And, in a deeper sense than their author knew, St. Simon's words, "the Revolution is not ended," are still true. The Industrial Revolution was no sudden crisis, but a long process of economic change, still unconsummated, and therefore involving incessant modifications and readjustments of economic theory.

The three great economic revolutions of the Christian era: (1) the organization of feudalism; (2) the decay of feudalism and gradual rise of free industry; (3) the rise of the factory system and of machine-production.

The chief characteristics of the last economic revolution—agrarian change, improvements in communications, new inventions of machinery, application of steam to manufacture, concentration of industrial populations, practical shrinkage of the world through electricity. The facts of this Industrial Revolution gradually discredited alike Adam Smith's faith in "the obvious and simple system of natural liberty" and St. Simon's schemes of arbitrary reconstruction. But economists were led, on the one hand, increasingly to share Adam Smith's admira-

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tion of the power of individual enterprise in a free society, and, on the other hand, to admit with St. Simon the necessity of State interference on behalf of the weakest class of the community. These views were co-ordinated by John Stuart Mill, whose work, however, was *transitional*, because, during and since his time, the Industrial Revolution has been progressing and is still unfinished.

In short, the economic situation presents the phenomena of *life*; there is no immobility in industrial organization. Economists are therefore predisposed to be influenced by the methods and results of the rising growth of *biological* sciences, just as their predecessors were influenced by the group of mathematical sciences.

The influence of biological studies has profoundly modified economic thought and has split up economic literature into three chief schools, viz. : (1) the historical, which traces the development of the economic organism; (2) the statistical and realistic, which analyzes its present condition; and (3) the proleptic or prophetic, which seeks to forecast the direction of its future evolution. Examples in recent economic literature of these three schools. The influence of general historical studies on the first school; of the published reports of State Commissions, etc., on the second; and of the Socialist writers on the third. Special notice of the work of (1) Roscher, de Laveleye, Cliffe Leslie, Arnold Toynbee, Thorold Rogers, Professor Ashley and Dr. Gross; of (2) Mr. Atkinson, Dr. Giffen, the American Economic Association, the American Academy of Political and Social Science, General Francis Walker, Mr. Charles Booth, and of (3) Mr. Ruskin, the Fabian Society, etc.

Recent attempts at systematization. The works of Professor Henry Sidgwick and Professor Marshall. Such attempts must be provisional only, but are important as reflecting the changed temper of economics. One effect of Socialist criticism shown to be the recasting of economic theory : (1) as regards the Wage Fund; (2) as regards Value;

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(3) as regards Interest. The new work of the Austrian economists in this direction.

General Conclusions of the Course.

1. The scope of economic science has been widened; its temper changed; its methods perfected and elaborated. Result—greater economic tolerance.

2. Political Economy can be no longer used as a merely party weapon in industrial disputes.

3. Though more widely read, and embracing a wider variety of opinion than ever before, political economy is now quoted by no one school of writers with the dogmatic assurance with which forty years ago it used to be spoken of by a limited number of hangers-on. The sudden expansion of knowledge, the diversity in the economic practice of civilized nations, the inrush of new theories, have produced in some minds, if not economic skepticism, at least a chill in economic faith.

4. But, because it is more diffident in reaching conclusions, and more careful in its investigations, recent political economy deserves more, and not less, of public confidence.

5. The splitting up, however, of most economic work into special monographs, while providing invaluable material for future generalizations, has deprived political economy of its old breadth of authority. It requires more intimate knowledge to appreciate the collective result of scattered monographs than to gather a general impression from a single man's attempt at systematization.

6. But the fact that special monographs are now such an important feature in economic literature makes it desirable that the private student, the man of business, the citizen, should formulate and summarize any economic facts of special interest which happen to have come under his personal observation. University Extension classes, statistical societies, reading circles, may thus quickly aid

the cause of economic study by organizing co-operative investigation into economic facts.

7. Political economy at present suffers from an undeserved suspicion: Socialists suspect it of individualistic bias, Individualists suspect its alleged socialistic tendencies. Examination of this double charge, as giving an example of the triple method of economic study.

(a) Historical inquiry shows that the world has never been wholly individualistic or wholly socialistic, but has always needed freedom of enterprise safe-guarded by appropriate institutions for the restraint of excessive egoism.

(b) An analysis of the present economic situation in Great Britain shows that there are two strong currents (not one only as the Fabian Socialists allege) in social life—one making for proper restraint, the other for proper freedom.

(c) A forecast of the social future leads us to believe that mankind will always require scope for individual energy on the one hand and the corrective action of State interference on the other.

8. Political economy therefore rejects the extremes of Individualism and Socialism alike. But it must be guided by the influence of both Adam Smith *and* St. Simon. It must, in other words, inculcate the *complementary*, not *antagonistic*, truths that the world needs individual energy but that individual energy in turn needs to be corrected, and partly guided and inspired, by collective authority.

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erence given, by the institutions of Mr. Colbert, to the industry of the towns above that of the country.

If the rod be bent too much one way, says the proverb, in order to make it straight you must bend it as much the other. The French philosophers, who have proposed the system which represents agriculture as the sole source of the revenue and wealth of every country, seem to have adapted this proverbial maxim; and, as in the plan of Mr. Colbert, the industry of the towns was certainly overvalued in comparison with that of the country, so in their system it seems to be as certainly undervalued.

(2) Adam Smith on the "Simple System of Natural Liberty."

(From "Wealth of Nations," Book IV, Chapter IX.)

All systems, either of preference or of restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man or order of men. The sovereign is completely discharged from a duty, in the attempting to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people and of directing it towards the employments most suitable to the interests of the society.

(3) Adam Smith on Public Education and the Intellectual Effects of the Division of Labor.

(From "Wealth of Nations," Book V, Chapter I.)

In some cases the state of society necessarily places the greater part of individuals in such situations as naturally form in them, without any attention of government, almost all the abilities and virtues which that state requires, or perhaps can admit of. In other cases the state of the society does not place the greater part of individuals in such situations, and some attention of government is necessary in order to prevent the almost entire corruption and degeneracy of the great body of the people.

In the progress of the division of labor, the employment of the far greater part of those who live by labor, that is, of the great body of the people, comes to be confined to a few very simple operations, frequently to one or two. But the understandings of the greater part of

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men are necessarily formed by their ordinary employments. The man whose whole life is spent in performing a few simple operations, of which the effects, too, are perhaps always the same, or very nearly the same, has no occasion to exert his understanding or to exercise his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as ignorant and stupid as it is possible for a human creature to become. The torpor of his mind renders him not only incapable of relishing or bearing a part in any rational conversation, but of conceiving any generous, noble or tender sentiment, and consequently of forming any just judgment concerning many even of the ordinary concerns of private life. Of the great and extensive interests of his country he is altogether incapable of judging, and unless very particular pains have been taken to render him otherwise, he is equally incapable of defending his country in war. The uniformity of his stationary life naturally corrupts the courage of his mind and makes him regard with abhorrence the irregular, uncertain and adventurous life of a soldier. It corrupts even the activity of his body and renders him incapable of exerting his strength with vigor and perseverance in any other employment than that to which he has been bred. His dexterity at his own particular trade seems, in this manner, to be acquired at the expense of his intellectual, social and martial virtues: but in every improved and civilized society this is the state into which the laboring poor, that is the great body of the people, must necessarily fall, unless government takes some pains to prevent it.

The same thing may be said of the gross ignorance and stupidity which, in a civilized society, seem so frequently to benumb the understandings of all the inferior ranks of people. A man without the proper use of the intellectual faculties of a man, is, if possible, more contemptible than even a coward, and seems to be mutilated and deformed in a still more essential part of the character of human nature. Though the state was to derive no advantage from the instruction of the inferior ranks, a people it would still deserve its attention that they should not be altogether uninstructed. The state, however, derives no inconsiderable advantage from their instruction. The more they are instructed, the less liable they are to the delusions of enthusiasm and superstition, which, among ignorant nations, frequently occasion the most violent disorders. An instructed and intelligent people, besides, are always more decent and orderly than an ignorant and stupid one: they feel themselves each individually, more respectable and more likely to merit the respect of their lawful superiors, and they are, therefore, more disposed to respect those superiors. They are more desirous to examine and more capable of seeing through the interested complaints of faction and sedition: and they are, upon that account,

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less apt to be misled into any wanton or unnecessary opposition to the measures of government. In free countries, where the safety of government depends very much upon the favorable judgment which the people may form of its conduct, it must surely be of the highest importance that they should not be disposed to judge rashly or capriciously concerning it.

(4) St. Simon's Theory of Social Development.

Le xviii. siècle porta la critique des deux pouvoirs jusqu'à ses dernières bornes, et il acheva la ruine de l'ancien système dans ses éléments et dans son ensemble. . . . On ne peut point organiser la société sur une base critique. . . . Mon intention étant d'imprimer au xix. siècle le caractère organisateur.

L'Organisateur, pp. 104, 193, 220.

Tout par l'industrie ; tout pour elle. *L'Industrie*, Title page.

Messieurs, le but direct de mon entreprise est d'améliorer le plus possible le sort de la classe qui n'a point d'autres moyens d'existence que le travail de ses bras ; mon but est d'améliorer le sort de cette classe non seulement en France, mais dans le monde entier.

Du Système Industriel, p. 81.

(5) St. Simon's Scheme of Social Organisation.

(From L'ORGANISATEUR, Sixième Lettre.)

Je vais exposer la marche que la chambre des communes (composée, comme je l'ai dit dans la lettre précédente, des chefs de l'industrie) aurait dû suivre. Pour m'expliquer d'une manière plus ferme et plus rapide, je ferai parler cette chambre :

" Il sera formé une première chambre qui portera le nom de *Chambre d'invention*.

" Cette chambre sera composée de trois cents membres ; elle sera divisée en trois sections qui pourront s'assembler séparément, mais dont les travaux n'auront le caractère officiel que dans le cas où elles auront délibéré en commun.

" Chaque section pourra provoquer l'assemblée des trois sections réunies.

" La première section sera composée de deux cents ingénieurs civils ; la seconde de cinquante poètes ou autres inventeurs en littérature, et la troisième de vingt-cinq peintres, de quinze sculpteurs ou architectes et de dix musiciens.

" Cette chambre s'occupera des travaux suivants :

" Elle présentera, à l'expiration de la première année de sa formation, un projet de travaux publics à entreprendre pour accroître les

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nuitesses de la France et pour améliorer le sort de ses habitants, sous tous les rapports d'utilité et d'agrément : elle donnera, ensuite, tous les ans, son avis sur les additions à faire à son plan primitif et sur les améliorations dont il lui paraîtra susceptible.

« Les reasselements, les défrichements, les percements de routes, les ouvertures de canaux, seront considérés comme la partie la plus importante de ce projet : les routes et les canaux à faire ne devront pas être conçus seulement comme des moyens de faciliter les transports ; leur construction devra être combinée de manière à les rendre le plus agréables possible aux voyageurs.¹

« Cinquante milliers d'arpents de terres, et plus, si cela est jugé convenable, seront choisis parmi les sites les plus pittoresques que les chemins ou que les canaux traverseront. Ces terrains seront consacrés à servir de lieu de repos pour les voyageurs et de séjour de plaisir pour les habitants du voisinage.

« Chacun de ces terrains contiendra un musée des produits naturels, mais que les produits industriels des contrées environnantes ; ils renfermeront aussi des habitations pour les artistes qui voudront s'y adonner, et il y sera toujours entretenu un certain nombre de musiciens, destinés à enflammer les habitants du canton de la passion dont les circonstances exigent le développement pour le plus grand bien de la nation.

« La capitale du roi français doit devenir un superbe parc à l'anglaise, entouré par tout ce que les beaux-arts peuvent ajouter aux beautés de la nature. Depuis longtemps le luxe est concentré dans les palais des rois, dans les habitations des princes, dans les hôtels et les palais de quelques hommes puissants. Cette concentration est très-nuisible aux intérêts généraux de la société, parce qu'elle tend à étouffer deux degrés de civilisation distincts, deux classes d'hommes différents, celle des personnes dont l'intelligence est développée par la vie nationale, les productions des beaux-arts, et celle des hommes dont les seules imaginations ne reçoivent aucun développement, les travaux matériels dont ils sont exclusivement occupés ne stimulant point leur intelligence.

« Les circonstances actuelles sont favorable pour rendre le luxe national. Le luxe deviendra utile et moral quand ce sera la nation entière qui en jouira. C'est à notre siècle qu'étaient réservés l'honneur et l'avantage d'employer d'une manière directe, dans les combinaisons politique, les progrès des sciences exactes et ceux faits dans les beaux-arts depuis la brillante époque de leur régénération.

« Il sera formé une seconde chambre qui prendra le nom de *Chambre d'artisans*.

« Elle examinera tous les projets présentés par la première chambre, et elle dira son opinion détaillée et motivée sur chacun de ces projets.

¹ *The Change in Political Economy.*

"La Chambre d'*examen* se constituera en remplissant les mêmes conditions que la Chambre d'*invention*.

"La chambre d'exécution sera chargée de diriger l'exécution de tous les projets arrêtés; elle seule sera chargée d'établir l'impôt de le faire percevoir.

"Les trois chambres réunies formeront le Parlement nouveau, lequel sera investi du pouvoir souverain, tant constitutionnel que législatif.

"La chambre d'exécution pourra appeler l'attention des deux autres sur les objets qu'elle jugera convenables.

"Ainsi tout projet sera présenté par la première chambre, examiné par la seconde, et ne sera définitivement adopté que par la troisième.

"Tous les projets présentés au Parlement seront publiés aux frais de la nation. Le Parlement choisira le projet de code civil et le projet de code criminel qui lui paraîtront les meilleurs; il accordera une récompense importante à leurs auteurs, et il les admettra dans les chambres lors de la discussion des codes qu'ils auront présentés, en leur donnant voix consultative dans cette discussion.

"Tous les Français (particulièrement les ingénieurs militaires) seront invités à présenter un projet de défense générale du territoire. Ce projet devra être conçu de manière à exiger le moins de troupes permanentes possible."

(6) Comte's Early Intellectual Obligation to St. Simon.

(From Catéchisme des Industriels, 3^{me} Cahier, par A. Comte, 1824.)

Ayant médité depuis longtemps les idées-mères de M. St. Simon je me suis exclusivement attaché à systématiser, à développer et à perfectionner la partie des aperçus de ce philosophe qui se rapporte à la direction scientifique . . . J'ai cru devoir rendre publique la déclaration précédente, afin que si mes travaux paraissent mériter quelque approbation elle remonte au fondateur de l'école philosophique dont je m'honore de faire partie.

(7) John Stuart Mill's Obligations to St. Simon and Comte.

(From John Stuart Mill's Autobiography, Chapter V.)

From the winter of 1821 I had what might truly be called an object in life; to be a reformer of the world. My conception of my own happiness was entirely identified with this object.

But the time came when I was awakened from this as from a dream. It was in the autumn of 1826. I was in a dull state of nerves,

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such as everybody is occasionally liable to, unsusceptible to enjoyment or pleasurable excitement; one of those moods when what is pleasure at other times, becomes insipid or indifferent; the state, I should think, in which converts to Methodism usually are when smitten by their first "conviction of sin." In this frame of mind it occurred to me to put the question directly to myself: "Suppose that all your objects in life were realized; that all the changes in institutions and opinions which you are looking forward to could be completely effected at this very instant; would this be a great joy and happiness to you?" And an irrepressible self-consciousness distinctly answered, "No!" At this my heart sank within me: the whole foundation on which my life was constructed fell down. All my happiness was to have been found in the continual pursuit of this end. The end had ceased to charm, and how could there ever again be any interest in the means? I seemed to have nothing left to live for.

The experiences of this period had two very marked effects on my opinions on character. In the first place, they led me to adopt a theory of life very unlike that on which I had before acted, and having much in common with what at that time I certainly had never heard of, the anti-self-consciousness theory of Carlyle. I never, indeed, wavered in the conviction that happiness is the test of all rules of conduct and the end of life. But I now thought that this end was only to be attained by not making it the direct end.

The other important change which my opinions at this time underwent was that I, for the first time, gave its proper place among the prime necessities of human well-being, to the internal culture of the individual.

The cultivation of the feelings became one of the cardinal points in my ethical and philosophical creed.

If I am asked, what system of political philosophy I substituted for that which, as a philosophy, I had abandoned, I answer, No system, only a conviction that the true system was something much more complex and many-sided than I had previously had any idea of, and that its office was to supply, not a set of model institutions, but principles from which the institutions suitable to any given circumstances might be deduced. The influences of European, that is to say, Continental, thought, and especially those of the reaction of the nineteenth century against the eighteenth, were now streaming in upon me. They came from various quarters: from the writings of Coleridge, which I had begun to read with interest even before the change in my opinions, from the Coleridgians with whom I was in personal intercourse, from what I had read of Goethe, from Carlyle's early articles in the *Edinburgh and Foreign Reviews*, though for a long time I saw nothing in these (as my father saw nothing in them to the last) but insane rhapsody. From these sources

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and from the acquaintance I kept up with the *French literature* of the time, I derived, among other ideas which the general turning upside down of the opinions of European thinkers had brought uppermost, these in particular : That the human mind has a certain order of possible progress, in which some things must precede others, an order which governments and public instructors can modify to some, but not to an unlimited, extent : that all questions of political institutions are relative, not absolute, and that different stages of human progress not only *will* have, but *ought* to have, different institutions : that government is always either in the hands, or passing into the hands, of whatever is the strongest power in society, and that what this power is does not depend on institutions, but institutions on it : that any general theory or philosophy of politics supposes a previous theory of human progress, and that this is the same thing with a philosophy of history. These opinions, true in the main, were held in an exaggerated and violent manner by the thinkers with whom I was now most accustomed to compare notes, and who, as usual with a reaction, ignored that half of the truth which the thinkers of the eighteenth century saw. But though, at one period of my progress, I for some time undervalued that great century, I never joined in the reaction against it, but kept as firm hold of one side of the truth as I took of the other. The fight between the nineteenth century and the eighteenth always reminded me of the battle about the shield, one side of which was white and the other black. I marvelled at the blind rage with which the combatants rushed against one another. I applied to them, and to Coleridge himself, many of Coleridge's sayings about half truths; and Goethe's device, "many-sidedness," was one which I would most willingly, at this period, have taken for mine.

The writers by whom, more than by any others, a new mode of political thinking was brought home to me, were those of the St. Simonian school in France. In 1829 and 1830 I became acquainted with some of their writings. They were then only in the earlier stages of their speculations. They had not yet dressed out their philosophy as a religion, nor had they organized their scheme of Socialism. They were just beginning to question the principle of hereditary property. I was by no means prepared to go with them even this length; but I was greatly struck with the connected view which they for the first time presented to me, of the natural order of human progress : and especially with their division of all history into organic periods and critical periods.

In Carlyle, indeed, I found bitter denunciations of an "age of unbelief," and of the present age as such, which I, like most people at that time, supposed to be passionate protests in favor of the old modes of belief. But all that was true in these denunciations I

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thought that I found more calmly and philosophically stated by the St. Simonians. Among their publications, too, there was one which seemed to me far superior to the rest; in which the general idea was matured into something much more definite and instructive. This was an early work of *Auguste Comte*, who then called himself and even announced himself in the title page as a *pupil of Saint Simon*. In this tract M. Comte first put forth the doctrine, which he afterwards so copiously illustrated, of the natural succession of three stages in every department of human knowledge: first, the theological, next, the metaphysical, and lastly, the positive stage; and contended that social science must be subject to the same law; that the feudal and Catholic system was the concluding phasis of the theological state of the social science, Protestantism the commencement and the doctrines of the French Revolution the consummation, of the metaphysical; and that its positive state was yet to come. This doctrine harmonized well with my existing notions, to which it seemed to give a scientific shape.

I looked forward through the present age of loud disputes, but generally weak convictions, to a future which shall unite the best qualities of the critical with the best qualities of the organic periods; unchecked liberty of thought, unbounded freedom of individual action in all modes not hurtful to others; but also convictions as to what is right and wrong, useful and pernicious, deeply engraven on the feelings by early education and general unanimity of sentiment, and so firmly grounded in reason and in the true exigencies of life that they shall not, like all former and present creeds—religious, ethical and political—require to be periodically thrown off and replaced by others.

M. Comte soon left the St. Simonians, and I lost sight of him and his writings for a number of years. But the St. Simonians I continued to cultivate. I was kept *au courant* of their progress by one of their most enthusiastic disciples, M. Gustave d'Eichthal, who, about that time, passed a considerable interval in England. I was introduced to their chiefs, Bazard and Enfantin, in 1830; and as long as their public teachings and proselytism continued, I read nearly everything they wrote. Their criticisms on the common doctrines of Liberalism seemed to me full of important truth; and it was partly by their writings that my eyes were opened to the very limited and temporary value of the old political economy, which assumes private property and inheritance as indefeasible facts, and freedom of production and exchange as the *dernier mot* of social improvement. The scheme gradually unfolded by the St. Simonians, under which the labor and capital of society would be managed for the general account of the community, every individual being required to take a share of labor, either as a thinker, teacher, artist or producer, all being classed according to

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their capacity, and remunerated according to their work, appeared to me a far superior description of Socialism to Owen's. Their aim seemed to me desirable and rational, however their means might be inefficacious; and though I neither believed in the practicability nor in the beneficial operation of their social machinery, I felt that the proclamation of such an ideal of human society could not but tend to give a beneficial direction to the efforts of others to bring society, as at present constituted, nearer to some ideal standard. I honored them most of all for what they have been most cried down for—the boldness and freedom from prejudice with which they treated the subject of family, the most important of any, and needing more fundamental alterations that remain to be made in any other great social institution, but on which scarcely any reformer has the courage to touch. In proclaiming the perfect equality of men and women, and an entirely new order of things in regard to their relations with one another, the St. Simonians, in common with Owen and Fourier, have entitled themselves to the grateful remembrance of future generations.

LIST OF ESSAY-QUESTIONS.

1. Examine the points of resemblance and difference in the doctrines of the French Physiocratic Economists and of Adam Smith's *Wealth of Nations*.
2. Consider the evidence which points to Adam Smith being under special intellectual obligations to Turgot.
3. How far is it true to say that the *Wealth of Nations* is specially distinguished by its unflinching advocacy of *laissez-faire*?
4. Contrast the economic standpoint of the *Wealth of Nations* with that of St. Simon's *Nouveau Christianisme*.
5. How far has later experience confirmed St. Simon's theory that the nineteenth century was to be a century of social reorganization?
6. Estimate John Stuart Mill's position in the history of economic theory and his obligations to Adam Smith and to St. Simon, respectively.
7. Consider the effect of biological studies on economic theory and methods.
8. Explain the intellectual connection between Malthus' *Essay on Population* and Darwin's *Origin of Species*, and between the latter book and modern economics.
9. How far do Socialism and Individualism represent *complementary* ideals of social organization?

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"It seems . . . in accordance with the received division of Economic Science . . . to recognize at least a possible Art of Distribution, of which the aim is to apportion the produce among the members of the community so that the greatest amount of utility or satisfaction may be derived from it."

H. SIDGWICK, *Principles of Political Economy*, Bk. iii, Chap. 1.

"The real Political Economy is that which teaches nations to desire and labor for the things that lead to life, and which teaches them to scorn and destroy the things that lead to destruction."

JOHN RUSKIN, "Unto this Last," p. 119.

"That low man goes on adding one to one,
His hundred's soon hit;
This high man, aiming at a million,
Misses an unit."

R. BROWNING, *Grammarians' Funeral*.

"Wherever competition is not, monopoly is."

J. S. MILL, *Political Economy*, Bk. iv, Chap. 7, § 7.

"Our instruments of action are indeed necessarily material, but our aims touch the highest sphere of human activity, by addressing themselves to the profound principle of moral will. We seek to make men richer by making them better, to banish fraud from commerce, and to *transmute* in the ordinary affairs of life *the bitterness of competitive struggle into the nobleness of a generous emulation*. We seek to abate the flood of misery by diverting its springs; to equalize position by gradually removing the causes of its great inequality; and to convert the productive powers of mankind, unparalleled in any former age, into the sources of a general well-being corresponding to the magnitude of these powers."

E. VANSITTART NEALE.

Address from the Co-operative Congress to the University of Cambridge, June 13th, 1889.

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LIST OF SELECTED BOOKS ON THE SUBJECT.

[The following is offered as a working list for the student. It does not pretend to be an exhaustive bibliography. The asterisks indicate those books which the student will do best to read first in the study of this branch of Economics.]

1.—General Accounts of Socialism.

(a) *Historical, or mainly so.*

- Le Socialisme Contemporain. By Emile de Laveleye. Paris, F. Alcan, 1885.
- Socialism of To-day (Translation of the above by Orpen).
- Contemporary Socialism. By John Rae. Second edition.
- Les Origines du Socialisme Contemporain. By Paul Janet. Paris, Germer, Baillière & Co.
- Article "Socialism" in Encyclopædia Britannica. Ninth edition.
- Communist Societies of the United States. By C. Nordhoff.
- Socialism, New and Old. By William Graham.

(b) *Expository or Critical.*

- *The Quintessence of Socialism. Schäffle. Translation edited by B. Bosanquet.
- An Inquiry into Socialism. By Thomas Kirkup. London, Longmans, 1887. 5s.
(A friendly but critical examination by the writer of the article mentioned above.)
- J. S. Mill. Political Economy, Book ii., chap. 1. People's edition, pp. 123-133.
- *H. Sidgwick. Political Economy, Book iii., chap. 7, pp. 517-541.
- W. Roscher. Political Economy, Book i., chap. 5. Translation by Lalor, 235-267.
- Economic Aspects of State Socialism. By H. Llewellyn Smith.
- Essays and Lectures on Social and Political Subjects. H. and M. G. Fawcett. Lectures 1, 2, 4, 5.
- Thoughts on Democracy and The Duties of Man. Joseph Mazzini.
- Justice. Being Part iv. of the Principles of Ethics. By Herbert Spencer.
- Fabian Essays. Edited by G. Bernard Shaw.

The Claims of Labor. An Essay by William Morris, called "The Labor Question from the Socialist Standpoint."

The Modern State. By P. Leroy Beaulieu. Translated by A. C. Morant.

2.—List of the Socialist Writings chiefly referred to in the Lectures.

J. J. Rousseau. Discours sur l'origine de l'inégalité parmi les hommes Vol. 4 of Works. Paris, Emmer, 1826.

Comte de Saint Simon. } *L'Organisateur.
 } *Catechisme des Industriels.
 } *Nouveau Christianisme.

Ch. Fourier. Théorie des quatre Mouvements. Third edition Œuvres I. Paris, Librairie Sociétaire, 1846.

Le Nouveau Monde Industriel. Œuvres VI. Brussels, 1840.

R. Owen. Revolution in the Mind and Practice of the Human Race. London, 1849.

*Ferdinand Lassalle. The Workingman's Programme. Translation, by E. Peters of "Arbeiter Programm."

*Karl Marx. Capital. A critical analysis of Capitalist Production. Translation by Moore and Aveling. [See also the "Students' Marx." By Aveling.]

3.—Critical Accounts of Particular Socialists.

*Articles in Encyclopædia Britannica (ninth edition) on Saint Simon, Fourier and Lassalle.

*John Morley. Rousseau. London, Macmillan, 1886. 10s.

*Paul Janet. Saint Simon et le Saint Simonisme. Paris, Germer, Baillière & Co., 1878.

A. J. Booth. Saint Simon and Saint Simonism.

*A. J. Booth. Two Articles on Fourier in *Fortnightly Review*, 1872.

*G. J. Holyoke. History of Co-operation, vol. 1 for Owen.

Lloyd Jones. Life of Robert Owen.

W. L. Sargent. Social Innovators and their Schemes.

4.—Books on the History of Political Economy.

ILLUSTRATIVE OF VARIOUS PARTS OF THE LECTURES.

*Article on Political Economy, by J. K. Ingram, in Encyclopædia Britannica. Ninth Edition, part 74.

[Published separately in a revised form, as History of Political Economy.]

Lavergne. Les Economistes Français du dix-huitième siècle. Paris, Guillaumin, 1870.

- *John Morley. *Miscellanies*, vol. 2. *Essay on Turgot*.
- *Adam Smith. *Wealth of Nations*, books 3 and 4.
- *T. E. Cliffe Leslie. *Essays in Political and Moral Philosophy*. Second Edition. *Essay on the Political Economy of Adam Smith*.

5.—Some Books on Various Forms of Voluntary Association.

- *W. J. Ashley. *Economic History*, Vol. I, chap. 2 "Merchant and Craft Guilds."
- W. Cunningham. *Growth of English Industry and Commerce*, book iii., chap 4, and book v, chap. 4.
- *L. Brentano. *Guilds and Trade Unions*.
- George Howell. *Conflicts of Capital and Labor*. (Trade Unions chiefly.)
- G. Howell. *Trade Unionism, New and Old*.
- J. Burnett. *Report on Trade Unions by the Labor Correspondent of the Board of Trade*.
- A. H. D. Ackland } *Working-Men Co-operators*.
and B. Jones. }
- G. J. Holyoake. *History of Co-operation*, 2 vols.
- G. Frome Wilkinson. *Mutual Thrift*. (Friendly Societies.)
- *J. M. Baernreither. *English Associations of Working-Men*. English translation, by Alice Taylor.
- N. P. Gilman. *Profit-sharing between Employer and Employed*.

6.—List of Some Writings on the Theory of Voluntary Association.

- *Adam Smith. *Wealth of Nations*. Book i., chaps. 1, 2, 8 and 10 Rogers.
- *J. S. Mill. *Political Economy*. Book iv., chap. 7; Book v., chap. 10.
- W. T. Thornton. *On Labor, its wrongful claims and rightful dues*. London, Macmillan, 1869, O. P.
- *Arnold Toynbee. *Lectures on the Industrial Revolution*; specially those on "Ricardo and the old Political Economy," "Wages and Natural Law," "Are Radicals Socialists?" and the 7th, 8th, 11th, 12th, 13th and 14th lectures on the Industrial Revolution.
- *Francis Walker. *The Wages Question*.
- *A. & M. P. Marshall. *Economics of Industry* (especially Book iii., chapters 4-9).

In considering the development of economic teaching on the subject of Voluntary Association the student will also find it desirable to consult

*David Ricardo. Principles of Political Economy, chaps. 1-6, complete edition.

J. Bonar. Malthus and his Work-Book, ii.

F. Bastiat. Harmonies of Political Economy. English translation by Stirling.

W. Bagehot. Economic studies (specially Essays 3, 4 and 5).

* * * The student should also read Weismann's Essays on Heredity—a book which will probably have a deep influence on socialistic theory.

SUGGESTED COURSE OF READING ON THE SUBJECT.

EVERYONE who is interested in the subject will like to begin it in his own way. But it is often useful to check one's own reading by an outline suggested by another. The following is therefore offered as a possible course to be taken by one wishing to study the development of Socialism.

To get a general view, read Laveleye's *Socialisme Contemporain*, or Graham's *Socialism, New and Old*, or Rae's *Contemporary Socialism*. The second edition of the latter book is excellent.

Then go back to the *Wealth of Nations*; read particularly the 1st and 3d books, and get the substance of book 4. Then examine the social condition of Adam Smith's time (in Toynbee's *Industrial Revolution*, pp. 32-57); and the influence on Adam Smith of the social and economical philosophy (particularly the French philosophy) of his day. For this, read Lavergne's *Economistes Français du XVIII Siècle*; the part of Ingram's article on Political Economy (in *Encyclopædia Britannica*) bearing on the subject; Cliffe Leslie's *Essay on the Political Economy of Adam Smith*; and Toynbee, *Industrial Revolution*, pp. 72-84.

The above reading will make Adam Smith's position in Political Economy clear, and will explain the political causes which gave point to the economical reasoning in favor of free trade and free labor. It will also throw light on the philosophical assumptions which underlay the theory of "*laissez-faire*," and predisposed thinkers to accept it as a too absolute guide in legislation.

But the same causes, which brought more moderate minds to the acceptance of "*laissez-faire*," engendered in other men still more revolutionary ideas. For, while the former believed in a simple and beneficent *order* of nature, to which the free play of human self-interest would happily conform, if only the stupid and obsolete interferences of

governments were removed, the latter conceived the idea of a *state* of nature from which mankind had foolishly departed, and to which it should return.

Rousseau was the man who made this notion of an antecedent and blessed state of nature a political force. Read John Morley's Rousseau on this, or Rousseau's own *Discours sur l'origine de l'inégalité*. At this point it is important to read Maine's *Ancient Law*, chapters 3 and 4, on the Law of Nature and its modern history. Then Paul Janet's *Origines du Socialisme Contemporain*, pp. 67-169, will explain the development of Rousseau's influence into the earlier forms of revolutionary socialism. The chief writers, whose work it was to bring about this development, were Morelly (*Code de la Nature*, 1755), Mably (*Législation ou Principes des Lois*, 1776), and Babeuf (*Tribun du Peuple*, 1794).

Paul Janet shows that the French Revolution itself was not directly socialistic in its results (*Origines du Socialisme Contemporain*, pp. 1-66.) The Revolutionary Socialists were disappointed at its failure to fulfil their extremer hopes. But, when the Revolution had fallen into better perspective, the socialistic movement began to gather force again. It did so chiefly through the writings of the Comte de St. Simon—himself a member of one of the old noble families. Read Paul Janet's *Saint Simon et le St. Simonisme*. Of St. Simon's own writings, the *Catéchisme des Industriels* and the *Nouveau Christianisme* should be read first. St. Simon's influence was very great; he represents part of the reaction against the blindly destructive liberalism of the Revolution. He had a strong sense of the value of pre-revolutionary efforts for social regulation. His writings are marked by a sense of the value of the experience of the past, and contain many suggestive and brilliant generalizations. His idea was that a socialistic reconstruction of society should be effected by means of a democratic government truly representing the industrial classes. A deep feeling of pity for the disinherited in society runs through his writings, especially the *Nouveau Christianisme*.

Now, between St. Simon and his predecessor, Mably, there had intervened, not only the French Revolution, but the earlier stages of the Industrial Revolution which, among other vast changes, decided that *domestic* production was in the future to be gradually superseded by *fac-*

tory production. At this point, therefore, in order to understand the later developments of Socialism, it is well to read Toynbee's Lectures on the Industrial Revolution, pp. 27-105.

It is doubtful, however, whether St. Simon realized the bearing of this great industrial change on his proposals for the amelioration of the lot of the working-classes. And, without understanding the magnitude of the Industrial Revolution, which was proceeding during his lifetime, it is not possible justly to estimate the degree in which Saint Simon was detached from the real facts of life.

The same remark applies to Fourier (1772-1837), a contemporary of Saint Simon (1760-1825), but probably independent of Saint Simon's influence. Fourier had a marvellous power of imagining the details of a reconstructed society. But he was a man of small judgment, little in touch with real life, and apparently without any sense of the ludicrous. His style is difficult, and much of his matter unpleasant. There is an entertaining account of his ideas in articles by A. J. Booth, in the *Fortnightly Review*, 1872. Fourier's writings gain importance from their having provoked practical attempts to realize them. Godin, who established a great palace of industry for the workpeople employed in his ironworks at Guise, began his work under the influence of Fourier's books.

The third of this group of Socialists, who aimed at arbitrary and more or less fantastic reconstructions of society, was Robert Owen (1771-1858). He was himself one of the leaders in the Industrial Revolution, and devoted a great fortune, earned in the management of mills, to the socialist propaganda. There is a good account of him in Holyoake's History of Co-operation. Look also at his own "Revolution in the Mind and Practice of the Human Race." But, prominent as he himself was in the movement of industrial change, he does not seem to have realized the new difficulties which the Industrial Revolution was putting in the way of the arbitrary reconstruction of society by making the various parts of the industrial fabric of society infinitely more complex and interdependent.

With Owen the old school of Socialism ended. The Socialists who succeeded him had realized (possibly through the diffusion of the knowledge of science and of the organic processes of nature) that (1) the socialistic state of the future must, if it is to exist at all, be *evolved* naturally

out of the present economic state of society; that attempts at arbitrary, out-of-hand reconstructions of society are hopeless, and that Fourier's and Owen's belief in the immediate and universal realization of a reconstructed society through the force of successful individual examples was futile; and that (2) out of current political economy, out of the very stronghold of "laissez-faire" itself, could be forged the theories which might predispose thinking men to become socialists.

To understand this change, it is important to comprehend the effect of the Industrial Revolution on political economy. Read Toynbee's *Industrial Revolution*, pp. 1-26, 105-137, also H. Sidgwick, *Political Economy*, chapter 2; Malthus, *Essay on the Principle of Population* (in any but the first edition); consult Bonar's *Malthus and his Work*; and read Ricardo, *Principles of Political Economy*, chapters 1, 2 and 5; as Mr. Ashley suggests, chapters 2 and 5 may be read first, and then chapter 1. In connection with chapter 2, F. Walker's *Land and its Rent* may be read, and Thorold Rogers' *Political Economy*, chapter 12 (on rent). Ingram's *History of Political Economy* gives an interesting summary of the changes in English political economy at this time.

Now turn to the employment of Ricardian economics in modern Socialism. Read Laveleye (*Socialisme Contemporain*), or Rae (*Contemporary Socialism*) on Lassalle and Marx. And Toynbee's Lecture, *Are Radicals Socialists?* in his *Industrial Revolution*, pp. 203-221. Next, study the Socialist employment (a) of the supposed Ricardian theory of wages in Lassalle's *Workingman's Programme*; (b) of the Ricardian theory of value in Karl Marx's *Capital*; (c) of the Ricardian theory of rent, in Henry George's *Progress and Poverty*.

For an excellent and lucid summary of modern Socialism, see Schäffle's *Quintessence of Socialism*, and for a more general account of its relation to modern industrial problems, consult Kirkup's *Inquiry into Socialism*. Read also the "Fabian Essays on Socialism."

It remains to study the development of political economy since the Ricardian period, at which point the greater part of the modern socialist theory branches off from orthodox political economy. For this purpose, Ingram's *History of Political Economy* is useful as an introduction and a guide. After reading that, the best thing is to take

a good modern text-book, *e.g.*, F. Walker's *Political Economy*, or Marshall's *Economics of Industry*, and compare it with Ricardo. Then read Giffen's *Progress of the Working Classes* in the last half century, and see how far the forecast of the Socialists, based on their version of Ricardo's theories, has been hitherto actually fulfilled. Finally, read the recent replies on the part of the economists to the socialist theories of wages, value and interest. On the wage-fund theory, read General Walker's *Wages Question*; on value, Professor Smart's *Introduction to the Theory of Value*; on interest, Smart's translation of Böhm-Bawerk's "*Capital and Interest*" and "*Positive Theory of Capital*."

The above course of reading is a long one. Those who wish to acquaint themselves in a shorter time with the general drift of the subject might begin with Laveleye (*Socialisme Contemporain*), or Rae (*Contemporary Socialism*), or Graham (*Socialism, New and Old*); then read Toynbee's *Industrial Revolution*, for an account of Adam Smith, the rise of factory production, Ricardian economics, and the relation of Socialism to them. Next, Schäffle's *Quintessence of Socialism* might be read; and, lastly, *Socialist Theories* (as expounded in the *Fabian Essays*) contrasted with those of more orthodox economics, by the study of such a book as F. Walker's *Wages Question*, or Marshall's *Economics of Industry*, Books 2 and 3.

LECTURE I.

THE FORERUNNERS.

POLITICAL Economy is both a Science and an Art. This view of the province of political economy is justified (*a*) by its origin (1) in Italy and England in the publication of practical advice to governments as to the best means of developing their resources, and (2) in Germany in the course of technical instruction for branches of the civil service; (*b*) by the authority of Adam Smith (Introduction to Bk. iv of the *Wealth of Nations*. Compare H. Sidgwick, *Political Economy*. Introduction, chapter 2, and Book iii, chapter 1).

It follows that one of the proper objects of political economy is to provide an Art of the most equitable division of wealth: the apportionment, among the various workers in the community, of the produce of their united labors in the most just, useful and satisfactory way.

Now it is the interest of all the workers that the amount of the produce, which is to be so divided, should be as large as possible. The increase of this produce depends chiefly on the division of tasks. But the division of tasks inseparably involves the co-operation of the workers, who become more interdependent. Division of labor thus implies the association of laborers.

As to the best means of bringing about such association, and the best form for the association to take, there have been since 1750 six chief schools of opinion. These may be represented in outline as follows :

OBJECT.		MEANS.	CHIEF EXPONENTS OF THE IDEA.
THE REMEDY OF EXISTING INEQUALITIES IN THE DIS- TRIBUTION OF WEALTH.	by means of	1. Revolution- ary and ar- bitrary recon- struction of Society.	Mably. Babeuf. St. Simon. Fourier. Owen.
		2. The natural operations of unimpeded and individu- al self-inter- est.	The Physio- crats. Adam Smith. Frédéric Bas- tiat.
		3. Readjust- ment of exist- ing econom- ical organiza- tion of Soci- ety, chiefly by State-pro- moted pro- ductive co- operation.	Karl Marx. Ferdinand Las- salle.
		4. Readjust- ment of ex- isting eco- nomical or- ganization of society, chief- ly by means of voluntary associations, of which the formation is facilitated, but not pro- moted, by the State.	J. S. Mill. Co-operators. Trades Unio- nists.
		5. Experiments in Collectiv- ism, Municip- al Socialism and Commu- nity-Life.	"Fabian So- cialists."
		6. The free play of economic forces.	Herbert Spen- cer. Auberon Her- bert Individu- alists.
			A 1750-1847 (about).
			B
			C
			D 1847 to the present time.
			E
			F

These six schools fall into three pairs : Groups C and E having now superseded Group A, as Groups D and F have practically superseded Group B. The theories of the two schools in each pair have been colored by the industrial facts, the scientific studies, and the social philosophy of their time. Apart from the history of the times in which they have severally prevailed, it is impossible to understand the significance of either group of theories, or the relation between the two rival schools in each group. As

Professor Ashley says (Syllabus of Reading in Political Economy, Oxford, 1888), "The student should aim, above everything else, at bringing theories into relation to the actual condition of the period at which they arose, and at tracing the influence of changing facts upon theories and of changing theories upon facts." That is to say, it is impossible really to appreciate the development of political economy without historical sympathy. The only danger of this kind of treatment is that it is apt to incline us to become patrons of every shade of economic doctrine.

The great historical fact which, roughly speaking, separates the first two groups, is the Industrial Revolution, the Industrial Revolution being the name given to that complex process of economic development which, beginning in England with agrarian change in the earlier part of last century, was accelerated by the improvements in communication by road and canal, by important mechanical inventions, by the application of steam to manufacture, by the consequent substitution of the factory system for the domestic system, by the rapid growth of population, and by the expansion of trade. The Industrial Revolution was in process during the predominance of the earlier form of Socialistic thought, but its economic significance was not at first fully realized. When it was perceived that the problem of social inequality had been changed by the Industrial Revolution, there followed naturally a change in the remedies offered for its solution by orthodox Political Economists and by Socialists alike.

The great intellectual fact which separates Groups E and F from Groups C and D is the development of biological studies and the general acceptance of the doctrine of natural selection. Weismann's criticism of the theory of the transmission of acquired characteristics is sure to have an effect on the Socialistic programme, as they really re-open the case for community-life.

The Advocates of Arbitrary Reconstructions of Society.

THE economic sufferings of France in the earlier half of the last century predisposed men to accept suggestions of subversive change. Other causes had resuscitated the juridical fiction of a state of nature which was supposed to have been a blessed primitive state from which mankind had departed for its sins and to its great loss. [This idea of a State of Nature had descended through a long legal tradition from Roman jurisprudence, in which it had borne a different and narrower significance. Cf. Maine's *Ancient Law*, chaps. 3 and 4.] The theory was caught up by Rousseau, and in his writings (first in the *Discours sur l'origine de l'inégalité parmi les hommes*, published in 1750) became politically important.

The conception of ideal states of society was stimulated at this time (*a*) by a true zeal to abolish needless inequalities, and (*b*) by a want of historic sense which caused men to accept "guesses drawn from the nature of things as a valid substitute for history."

The first of these ideal reconstructions in which Rousseau's influence is clear, is Morelly's *Code of Nature* (1755). In his community, private property is to be abolished, daily necessities distributed, luxury restrained.

The next in order is Mably's *Legislation*, or the principles of law (1776), which prescribes a disciplinary and puritanical communism.

Next, Socialism became not only literary, but an affair of practical politics in the agitation and subsequent conspiracy of Babeuf (1790 to 1796), who advocated a reconstruction similar to that urged by Mably, but with franker brutality of temper and more practical power.

The apparently wide acceptance of these schemes may be explained by five chief causes :

- (*a*) Rousseau's successful presentment of the state of nature as a historical fact.

- (b) The fame of Plato's Republic and More's Utopia.
- (c) The fashionableness of classical precedents. Mably and Babeuf both appeal to Lycurgus.
- (d) The semi-socialism of military arrangements. Babeuf quotes the army as a proof that communism is practicable.
- (e) "The prevalent conviction that the one condition of human progress was plentiful increase of light."

Then there follows a gap in the older Socialism. It was filled at last by the writings of the Comte de Saint Simon (1760-1825; chief writings 1817-1825).

St. Simon contributed four suggestive thoughts:

- (1) Social reconstruction to be guided not by sham history, but by political economy.
- (2) Its aim to be to *increase* wealth, not to restrict it.
- (3) The modern state to be organized by industry and for industry.
- (4) The ideals of the middle ages not rubbish, but full of guidance for the future.

According to St. Simon the aim of all reconstruction should be "the exploitation of the globe by man associated with man"; Society should strive to help the poorest class, for this is the teaching of true religion: the social unit in the new community to be a man and woman united in the exercise of duties toward religion, the state and the family. The political form of the St. Simonian state would be "a spiritual and scientific autocracy."

Contemporary with St. Simon, but probably independent of his influence, was François Charles Fourier (1772-1837; chief writings 1820-1837). Fourier possessed an extraordinary power of devising the minutest regulations for his ideal communities, called "phalansteries," each of which was to be a complete agricultural association, loosely federated with its neighbors, of about 1,600

* Socialism.

persons, rich and poor, housed in uniform palaces, one in every square league. The details of Fourier's regulations for these phalansteries are occasionally sensible, but often ludicrous.

Fourier started from a theory of "natural optimism," viz., that the free development of human nature and the unfettered indulgence of human passion will ultimately lead to, and coincide with, perfect happiness and virtue. His theory is in ethics what pure *laissez-faire* is in economics. His arguments in favor of this theory are often ingenious but very pedantic. Thus Fourier's community would be a great palace on the principle "*Fais ce que voudras*."

Similar in many respects to Fourier's scheme was that of Robert Owen (1771-1858). He, too, wished to parcel the land into equal areas, and plant on each a separate community organized on Socialistic lines. Like Fourier, he thought that his scheme, if once tried, would succeed, and, once successful, would cause the whole civilized world to rush headlong into imitations of it. The first step was to be taken by government, which should seek a remedy for pauperism in planting these agricultural colonies of paupers.

The paradox of Owen's life is that, before he dreamed of these socialistic reconstructions of society, he had made a fortune as one of the most brilliant masters of industry under the new system of factory production. Probably he was actually the first cottonspinner in England. Yet he devoted the best part of his life and wealth, not to making more money, but to a rather obscure agitation which almost everybody thought fanatical and most people wicked.

Fourier and Owen both found disciples willing to put some of their theories into practice. The list is a melancholy one, as all the attempts were failures. Fourierism was tried in 1832 at Condé sur Vesgne, near the forest of Rambouillet, by a M. Delary, and in 1841, at Brook

Farm, near West Roxbury, Mass. Nathaniel Hawthorne took part in the Brook Farm experiment.—(Cf. his *Blithedale Romance*.) Owenism was tried in 1825, at Orbiston, near Glasgow, and in the same year at New Harmony, Indiana.

How was it that their authors could seriously entertain these schemes?

Partly because they were extreme necessarians without having any adequate conception of the influence of heredity on human character and of the difficulty of maintaining isolated, socialistic communities in an individualistic state. Improvements in communication have made isolation increasingly difficult.

Partly because they lived in a time of restless, penetrating change, and did not realize how tenaciously men and women hold on to older forms of belief and of life.

In fine, the earlier Socialists conceived fantastic plans which in actual trial have proved hitherto impracticable; but their works have no doubt given impetus and direction to later, though different, movements for social reform.

LECTURE II.

LASSALLE AND KARL MARX.

(a) *Laissez-Faire and the Industrial Revolution.*

THE Physiocratic School of Political Economy was chiefly built up by Quesnay (1694–1774) and Gournay (1712–1759). The common principle in which they agreed was that industry should be free. Their experience had convinced them that national prosperity was being hindered by State interference. They believed that under the distorted order of the French Society of their time there lay hidden a better and divine order to which the social order would naturally conform itself if only left free to do so.

Adam Smith (1723-1790), predisposed by his own philosophical speculations to enter into sympathy with such a view as this, made the acquaintance of the leading Physiocrats in Paris in 1763. In England, also, trade and labor were hampered by stupid restrictions. Accordingly, the *Wealth of Nations*, published in 1776, shows the same zeal for freedom of industry and commerce, and the same, though generally latent, faith in the natural order of society.

Adam Smith relied on the operation of the unaided, unimpeded self-interest of each individual, acting as an individual unit, as being the best and only means of establishing the "system of Natural Liberty." This system he apparently conceived as a congeries of free industrial individuals extending over each nation or the whole world, naturally associated with one another by the simple link of reciprocal needs, and collectively producing, through perfect division of labor, the maximum aggregate of the fruits of industry.

Now, Adam Smith wrote before the results of the Industrial Revolution were manifest. He had in his mind the domestic system, not the factory system, of manufacture.

Under circumstances of domestic manufacture it probably *might* be true that if you could give each laborer a free career and free movement from place to place, you would have done all that is necessary to enable every steady workman to realize his best interest.

But, *with* the domestic system of manufacture, the simplicity of the problem vanished. In the factory system, the individual *alone* can less and less realize his own freedom unless in combination with others. Under modern conditions, the true industrial unit is more and more, *not* the individual workman, but the workman + the whole body of his fellow-workpeople employed at tasks interdependent on his own in one department of factory production. The "system of Natural Liberty" thus fails us, because it regarded the individual workman as the unit.

Assuming that Adam Smith wrote the last book of the *Wealth of Nations* after the first four books, there are indications that his view on the theory of Natural Liberty was gradually developing, and that he was beginning to realize its limitations. Thus he does not think it safe to trust the future of all public education to the natural perception by individuals of their private interests. His reason for making this most important exception is that "in the progress of the division of labor the great body of the people spending its life in performing a few simple operations has no occasion to exert its understanding and generally becomes stupid and ignorant." Therefore, he concludes that, as education is most important, the more enlightened public should facilitate, encourage and *impose* upon almost the whole body of the people the necessity of acquiring the most essential parts of education. (*Wealth of Nations*, Book V, chapter 1, article 2.)

This is an indication that, could Adam Smith have foreseen the results of the Industrial Revolution, his view of the efficacy of merely individual freedom of action would have been modified.

But even Adam Smith's prescription of perfect freedom was not fairly tried. He admits that, in 1776, "masters are always and everywhere in a sort of tacit but constant and uniform combination not to raise the wages of labor above their actual rate." (*Wealth of Nations*, Book I, chapter 8.) But workmen were not allowed to combine in Great Britain to secure their interests until 1824, and even then the concession was imperfect. Yet there is much to be said, from the point of view of pure theory, in favor of unrestricted competition. The issue of such a competition might conceivably be the survival of the fittest. But the process would be intolerably cruel.

The theory of the beneficence of unhindered competition was championed in later days by Frédéric Bastiat, who argued that "to annihilate the freedom of individual

action is to annihilate men," and that "the natural social order is a mechanism marvellous and divine, having as its singular but unquestionable effect that the sum-total of satisfactions which falls to each member of society is much superior to those which he could procure by his own efforts." Competition is the great socializer; it makes what was in the last generation the privilege of the rich in the next generation the possession of everybody. Everyone at birth enters into the enjoyment of much of the genius, self-sacrifice and ingenuity of the past, the results of which have been nationalized through the free play of competition.

In reading Bastiat, as in reading Smith, it should be remembered that the latent assumption which underlay his thoughts is made up of two beliefs—the belief in the government of the world by an all-wise Providence, and the belief in a simple Order of Nature to which mankind will return, if only it is let alone and left free. These two beliefs are distinct and separable.

There is no evidence for the existence of the supposed simple Order of Nature. The social order is what mankind chooses to make it. There is no reason why men should refuse to struggle against the devastation caused by the unrestrained operation of some processes of nature. For it is the province of intellect to protect humanity by setting off the working of one process of nature against the working of another process.

Such protection had to be sought in consequence of the vast changes in the social order which were brought about by the Industrial Revolution.

The chief features of the earlier stages of the Industrial Revolution were as follows (see Toynbee's *Industrial Revolution*):—

1. Agricultural improvement; consolidation and enclosure of common fields; introduction of scientific farming; concentration of small farms into large; consequent increase of food supply and immigration of agricultural laborers into towns.

2. Great opportunity for England to develop her trade after military successes over the French and Dutch; England herself had not been overrun with foreign armies; her geographical position favored her trade.

3. Improvements in communications; scientific road-making began with the work of Metcalf of Knaresborough and was continued by Telford and Macadam; Brindley and the Duke of Bridgewater made canals; later, Stephenson improved the locomotive and developed railways.

4. New mechanical inventions; Arkwright invented the water-frame in 1769; Hargreaves the spinning-jenny in 1770; Crompton's mule introduced in 1779; Cartwright's power-loom in 1789; in 1769 James Watt had patented his steam-engine.

The chief results of the Industrial Revolution were as follows :

1. Increase of population (for details see Toynbee, Industrial Revolution).

1700, England and Wales (estimated)	5,134,516
1750, " " "	6,039,684
1801, " " "	9,187,176
	Increase.
1750, " " "	17½ per cent.
1801, " " "	52 "

2. Changes in the distribution of population.

3. Substitution of factory system for domestic system of manufacture (see Brentano, Gilds and Trades Unions, page 133-140), with employment of labor under new and unsanitary, because ill-regulated, conditions: gradual separation of employer and workman.

4. Increase of wealth.

Capital of Great Britain (see Mulhall, Dictionary of Statistics, p. 71).

As estimated by Petty	in 1664	- - -	£250,000,000
" Davenant	1701	- - -	490,000,000
" Young	1770	- - -	1,100,000,000

As estimated by Pitt	1800	- - -	1,800,000,000
“ Colquhoun	1811	- - -	2,180,000,000
“ Porter	1840	- - -	4,100,000,000

5. Increase of pauperism.

Poor relief in England and Wales (see Mulhall, Dict. of Statistics, p. 347).

Period.	Annual Expenditure.	Pence per inhabitant.
1702-14	£910,000	41
1760-75	1,520,000	58
1783-93	2,050,000	66
1815-20	7,106,000	152

Now what explanation can be given of the failure of the working classes to obtain their due share of the products of industry under the new conditions?

The chief causes which help the working classes in their competition for the products of industry (see Walker, Wages Question, chapter 18) may be contrasted as follows with the opportunities given in Great Britain for the free play of those causes during the earlier stages of the Industrial Revolution.

(a) Education.

No money voted by the State for education till 1832. Education not *universally* compulsory till 1880 (see Craik, State and Education, p. 117). On August 26, 1880, out of a population of 26 million, only 16,652,596 were under by-laws compelling education.

(b) Thrift.

First Savings Bank Act 1817. No Government control over actual calculations of Friendly Societies till 1846. Legal status not given to Co-operative Societies till 1846.

(c) Combination.

Trades Unions criminal till 1824. No legal protection for Trades Union funds till 1871 (apparent protection given by Act of 1854 having been declared illusory in the eye of the law in 1866).

- (d) Equitable taxation.
Through taxes on food and necessities, as late as 1834 half the workman's wages went in taxes (Toynbee, Industrial Revolution).
- (e) Free movement of labor.
Laws of settlement not mitigated until 1834.
First railway opened (between Stockton and Darlington) in 1825.
- (f) Laws regulating the conditions of factory life.
Factory legislation began in 1802, but not made really effective till 1833. (See Jevons, State in Relation to Labor, chapter 3).
- (g) Payment of wages in *money*.
"Truck," or payment in commodities, not prohibited until 1831. Cf. Lord Beaconsfield's Sybil, Book iii, chapter 3, for a vivid picture of the Truck system.
- (h) Cheap diffusion of news.
Stamp duty on newspapers not abolished until 1855.

The moral effects of the Industrial Revolution might have been far more terrible, had not the great religious revival preceded it. The dangers of the economic transition were lessened by the previous labors of Wesley, Whitfield, Berridge, and Grimshaw. (See Lecky, History of England in XVIIIth Century, chapter 9: specially volume 2, pp. 544-637).

To sum up: the theory of pure *laissez-faire* was conceived before the Industrial Revolution. If allowed to work itself out to the bitter end, unrestricted competition might possibly (though not probably) result in the survival of the economically fittest. It would certainly lead to waste of human talent. Anyhow the struggle was too pitiful to be tolerated by the moral sense of the community. Hence *laissez-faire* as a remedy for inequalities of wealth gradually fell into disfavor.

Query: what is to be the substitute in advanced civil-

ization for the operations of Natural Selection—as the latter is constantly being checked by humanitarian interferences? This is the crux of the problem.

(b) **The State Socialists.**

The Industrial Revolution affected Political Economy:—

First, in the writings of the Rev. T. R. Malthus (1766–1834). Alarmed by the increase of population and pauperism, he wrote the *Essay on the Principle of Population* [first edition 1798: second edition, changing its ground, 1803]. William Godwin, the English representative of the French Socialism of the older school, had argued in *Political Justice* (published 1793) that the evils of society were due to vicious human institutions which could and should be altered. Malthus' essay is a retort, that change social conditions as you may, food is limited, and mankind has a tendency to increase up to the limit of the accessible supply of it. In other words, want of moral self-control is at the bottom of human misery.

Next, David Ricardo (1772–1823), writing under the influence of the new and incessant stir caused by the Industrial Revolution, caused many of his readers to fail to see that, in assuming the existence of an all-pervading competition, he was arguing about an economic world which, even in England, did not really exist, except perhaps on the Stock Exchange, where he made his fortune. To simplify economic reasoning, he abstracted from human conduct the disturbing elements, and tacitly assumed that the constant and determining motive is the desire of personal gain (see Ruskin's *Unto this Last*, pp. 1–3).

Ricardo wrote a sort of economic shorthand. He compressed his reasoning too much, let too much go without saying. He has himself to blame for having been misunderstood. His most pessimistic conclusions are really qualified and limited by other parts of his works but more often Ricardo trusts the reader to supply the

qualification himself. [This view of Ricardo is not taken in Toynbee's *Industrial Revolution*, see pages 28, 138 156.]

Anyway, Ricardo has influenced Socialism through what he was *believed* to have meant. In the history of Socialism, the Ricardo-myth is important, however badly it may misrepresent Ricardo's real meaning.

The gist of Ricardo's supposed meaning was that (though wages will *nominally* rise through the increase caused in the price of food by the fact that food will have to be got from less and less fertile soils as population increases), real wages cannot permanently rise because, as soon as the rise of wages permits, the number of laborers will increase, and the competition of these newcomers will bring down wages again to the old level, *i. e.* the level of wages which will just provide a man, his wife, and two or three children, with the necessities of life.

[This interpretation of Ricardo is based on a passage in Chapter V. of his *Political Economy*, viz.: "When by the encouragement which high wages give to the increase of population, the number of laborers is increased, wages again fall to their natural price, and indeed, from a reaction, sometimes below it."

Note that Ricardo does not state that the fall in wages *will take place* in any event: he makes it *contingent* on the avowedly hypothetical increase in population. If the hypothetical increase did not take place (and we know it often does not), then by the form of his sentence the consequence fails to follow.

As a matter of fact the issue turns on the standard of comfort demanded by the laborer. If the standard of comfort is rising, and should the increase of population tend to become slower if the rising standard of comfort is endangered or impaired, *then* population does not increase so as to bring down wages again to the level of necessary wages. And Ricardo only *seems* to ignore this elasticity of the standard of comfort. He is really for simplicity of argument, assuming the standard of comfort to remain at a given level. Cf. the second paragraph of chap. 5.]

But, as before, the important thing is, not what Ricardo really meant, but what he was imagined to mean.

The Socialists took him to mean that the future of the working classes was to be a heart-breaking struggle on the minimum of subsistence. Understanding him to mean this believing him to have established this conclusion, the Socialists were perfectly right in demanding a reorganization of the wage-system in the name of social progress and for the sake of the "dim millions." [Cf. De Quincey's *Opium-Eater* (small edition, page 85) for a proof of the convincing power of Ricardo's reasoning, though De Quincey is not a very satisfactory witness, as he admits he was at the time taking opium in too large quantities.]

"Capitalist production saps the original sources of all wealth,—the soil and the laborer."—KARL MARX. *Capital*. (English Translation, vol. 2, p. 515.)

"The unhindered exercise by each of his own faculties leads to this: that the stronger, the cleverer, and the richer fleece the weaker and pick their pockets."—FERDINAND LASSALLE. *Working-Man's Programme*. Eng. Trans., p. 52.)

Marx's fundamental position is that the Capitalist organization of industry robs the workman by the subdivision of employments, and by the law of wages which forces the operative classes back upon minimum wages.

Therefore he and Lassalle agree that the present industrial system must be reconstructed.

Carl Marx's practical programme changed during his life.

In 1847, he demanded the expropriation of landed property: application of rent to State expenditure: abolition of inheritance: State monopoly of banks: means of transport to belong to the State: compulsory labor: free education: formation of national factories. (Cf. Rae, *Contemporary Socialism*, pages 140 and 148.)

In 1864 he urged the International Working-men's Association to aim at the promotion of productive co-operation on a national scale by State help.

This latter programme is in effect the same as Lassalle's.

To sum up : Marx started from a misunderstanding of Ricardo. But he has been a great critical force. He has helped to correct an impression, often derived from the older political economy, that the increase of material wealth is the chief object of national concern. He has justly disturbed public complacency, and has given a powerful impulse to "positive social reform." [Cf. Schäffle. Quintessence of Socialism, pp. 124, 125.]

LECTURE III.

THE PRESENT PROBLEMS OF SOCIALISM.

(a) Free and Voluntary Association as a Remedy.

HAS the history of the last fifty years in Great Britain borne out what the Socialists supposed to be Ricardo's forecast ?

Ricardo's *Principles of Political Economy and Taxation* was published in 1817. Since 1820, the population of the United Kingdom has increased from 20,710,000 to 34,650,000 (in 1880). Have wages fallen in consequence ?

Comparing wages in 1834 and 1884, Mr. Giffen (*Progress of the Working-classes in England in the last Half-century*, p. 4) says, "In all cases where I have found it possible from the apparent similarity of work to make a comparison, there is an enormous apparent rise in money wages, ranging from 20, and in most cases 50, to 100 per cent." [But fluctuations in employment must be allowed for. See Foxwell: *Essay on "Irregularity of Employment"* in *Claims of Labor*, pp. 186-275.]

This increase in money wages is not due to a rise in the price of food. Giffen (page 11) says, "It may be stated

broadly that, while sugar and such articles have declined largely in price, and while clothing is cheaper, the only article interesting the workman much, which has increased in price, is meat, which was not an article of the workman's diet fifty years ago as it has since become. . . . The increase of the money wages of the working-man in the last fifty years corresponds to a real gain."

Deposits in Savings Banks have increased (Giffen, p. 19):

	1831.	1881.
Number of Depositors -	429,000	4,140,000
Amount of Deposits	£13,719,000	£80,334,000
“ per Depositor -	£32	£19

Pauperism has declined (Giffen, p. 18):

Paupers in receipt of relief:

	1849.	1881.
England - - -	934,000	803,000
Scotland - - -	122,000*	102,000
Ireland - - -	620,000	109,000

United Kingdom 1,676,000 1,014,000

In Mr. Charles Booth's valuable *Labor and Life of the People*, Vol. 1 (London: Williams and Norgate, 1889), it is shown (page 156) that, in East London and Hackney, there are 63,000 more people in receipt of "regular standard earnings" than there are in all the criminal, very poor, casually employed, and "*small* regular wage-earning" classes below them; and 177,000 more people in receipt of "regular standard earnings" than there are in all the richer classes above them.

Class A.	Lowest class—loafers, semi-criminals	11,000
B.	Casual earnings, very poor - - - -	100,000
C.	Intermittent earnings - - - - -	74,000
D.	Small regular earnings - - - - -	129,000
E.	Regular standard earnings, above the line of poverty - - - - -	377,000

*1859.

F. Higher class labor - - - - -	121,000
G. Lower middle class - - - - -	34,000
H. Upper middle class - - - - -	45,000

And, if this is true of East London, at least an equally favorable account could be given of all England.

It therefore follows that it is not a choice between Socialist experiments and national destitution. Socialism falls into its place as one of several offered remedies for admitted grievances. Socialism not being our *one* chance, we can calmly compare its *expediency* with that of other remedies.

Socialism hitherto has been chiefly a critical force : it has been hitherto vague in its suggestion of detailed practical remedies. The promiscuous endowment of industry by the State would tend to diminish thrift, industry, and care in business management. There is no sign of a demand by the thrifty working classes for such an endowment. The history of the attempts of the State to promote industrial undertakings is discouraging ; the guilds, sanctioned but not directly promoted by the State, became ineffective apparently before industrial causes made them necessarily obsolete ; it needed the force of the revolutionary movement at the end of the last century to sweep away the dangerous restrictions which had been heaped upon French and English industry during the 17th and 18th centuries. Government effort, even in its present limited range, is not free from inefficiency and irresponsibility. Distributing letters, etc., is a simple matter compared with the distribution and production of the other commodities required in modern life. One nation could not dare to become socialistic alone, as competition is world-wide ; yet the simultaneous overthrow of the existing organizations of society in all civilized countries is not in the sphere of practical politics. The atmosphere of a government office does not seem to conduce to making the bold, costly experiments on which the development of industry depends. The Industrial Revolution is still in process : no one

knows what it may bring forth; Socialism would anticipate the possible—but as yet unimagined—state of economic equilibrium which *may* follow the Industrial Revolution.

Now, though Socialism has never been tried, it is clear that some other economic causes have been bettering the position of the working classes. What are these causes? and may we fairly expect them to continue in effective operation?

The fundamental economic cause has been competition, in the absence of which dulness, idleness, monopoly prevail. The efficacy of competition in the industrial world has its counterpart in Nature. [See Darwin, *Origin of Species*, new edition, vol. i, pages 5, 79, 96, 132; but compare D. G. Ritchie, *Darwinism and Politics*, Lond., Sonnenschein, 1889.]

But this competition is not necessarily between individual units. The healthy industrial competition of the present is less between individuals acting singly than between individuals acting in groups. The true industrial unit, under modern conditions, is generally the body of fellow-workpeople employed in interdependent tasks in one department of factory production. In association alone can the individual workman in modern industry realize his freedom.

But such association must be free, because to be effective it must be various in form, gradually evolved from practical experience, and guided by deeply interested persons, familiar with the special circumstances with which each different association has to contend. (Cf. Mazzini *Democracy in Europe*, pp. 243-4, 257.)

Now under what law of wages can voluntary association help the workmen to obtain a larger share than would otherwise naturally fall to them, in the division of the products of industry?

DISTRIBUTION OF WEALTH.

AMOUNT TO BE DIVIDED.	PARTIES AMONG WHOM IT IS DIVIDED.
<p>THE PRODUCT OF THE CONJOINT SERVICES OF THE VARIOUS PARTIES WHO WILL PARTICIPATE IN ITS DISTRIBUTION.</p>	<ol style="list-style-type: none"> 1. Rent to the Landlord. 2. Interest to the Capitalist. 3. Taxes to the Government. 4. <i>At least</i> necessary wages <ol style="list-style-type: none"> (a) to the employing manager for superintendence; (b) to the workpeople for labor. [If they do not receive the wages which they severally regard as necessary, the employer will give up business, and the workmen will tend to be the last of their race.] 5. Any residuum—to the employer or his workpeople according as each party is industrially the stronger.

The amounts payable as rent and interest are usually settled beforehand, and are determined by different causes. The division of the residuum, over and above the necessary remuneration of employer and workpeople, will depend on the industrial strength of the employer and workpeople respectively.

On what does this industrial strength on either side depend? On habits of, and loyalty to, associated action; on intelligent foresight; on frugality; on the accumulation and possession of savings to be used, if necessary, in industrial struggles.

On what depends the amount of produce turned out by a given quantity of labor and capital? On bodily health and strength; on inherited aptitude and acquired skill; on general and technical education; on the wise employment of machinery; on the stimulus of an industrious environment; on the prospect of future security and comfort in proportion to their present self-control (see Walker, *Wages Question*).

The interests of employers and workpeople are thus neither identical nor antagonistic, but reciprocal. Both are helped by combination among themselves.

To sum up: to free voluntary association we may most safely look for the ultimate and permanent abatement

of extreme inequalities in the distribution of wealth. Other associative forces—*e. g.*, Limited Liability Companies—are working in the same direction. But the operation of these various forms of combined effort, specially of productive co-operation, will probably be very slow, and will depend for success on the stamina and moral force of the working classes.

(b) THE ADVOCACY OF SOCIALISTIC EXPERIMENTS.

This is the new phase of Socialism, and much more promising than the older programme. Socialism is becoming opportunist. The effect of Weismann's investigations (*Essays on Heredity*) is to indicate the enormous power of *environment* on the organism during the short space of a lifetime. Not that human nature is plastic (as the older Socialists believed), but that each nature contains, as it were, springs of hidden potentiality which a favorable environment may touch and start into activity. Hence the argument for experiments in isolated Socialistic communities is about to be reopened.

(c) INDIVIDUALISM AND LAISSEZ-FAIRE.

This is the economic outcome of a Darwinian fatalism. It may be optimistic (as usually) or pessimistic. Weismann's theories will be seized by the individualists as a proof that the acquisition of better habits of one generation does not enable that generation to transmit a better character or physical constitution to its successors. Hence, why trouble so much about reform? This fallacy of this view examined. The real bearing of Weismann's theories on economics.

NOTES AND ILLUSTRATIONS.

1. Adam Smith on Political Economy as an Art.

"Political Economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsistence for the people or, more properly, to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services. It proposes to enrich both the people and the sovereign."—Wealth of Nations. Introduction to Book 4.

2. Adam Smith on the Guidance of Nature in Economics.

"By directing his industry in such a manner as its produce may be of the greatest value [a man] intends only his own gain; and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention."—Wealth of Nations, Book 4, chapter 2.

"All systems, either of preference or restraint, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord."—Wealth of Nations, Book 4, chapter 9.

3. Schaffle on the Gist of Socialism.

"The economic quintessence of the socialistic programme is as follows. To replace the system of private capital (*i. e.* the speculative method of production, regulated on behalf of society only by the free competition of private enterprises) by a system of collective capital, that is, by a method of production which would introduce a unified organization of national labor on the basis of *collective* or common *ownership* of the *means of production* by all the members of the Society. This collective method of production would remove the present competitive system, by placing under official administration such departments of production as can be managed collectively (socially or co-operatively) as well as the distribution among all of the common produce of all, according to the amount and social utility of the productive labor of each."—Schäffle. Quintessence of Capital. Eng. trans., page 304. (Lond., Sonnenschein, 1889.)

4. Mazzini on Free Association.

"Association can be fertile only in so far as it exists among free individuals among free nations . . . It is necessary that working men's associations should be free, spontaneous, and various; for I do not believe that it is given to any man, no matter to whom, to improvise at a given hour a perfect plan for the organization of humanity." —Democracy in Europe, pages 243 and 244 (Lond., H. S. King, 1877).

5. Outline of the Lives of Writers Referred to in the Lectures.

(i) JEAN JACQUES ROUSSEAU.

Born at Geneva	June 28, 1712
Paris	1741
Conceives the "Discourses"	1749
Publishes "Social Contract"	1762
In England	1766-67
Died at Ermenonville, near Paris	1778

(ii) ADAM SMITH.

Born at Kirkcaldy	June 5, 1723
University of Glasgow	1737
Balliol College, Oxford	1740-7
A lecturer at Edinburgh	1748
Professor of Logic at Glasgow	1751
Professor of Moral Philosophy at Glasgow	1752
"Theory of the Moral Sentiments"	1759
Travels as tutor to the Duke of Buccleuch	1764-66
Ten years quietly writing the "Wealth of Nations" at Kirkcaldy	1766-76
Publication of the "Wealth of Nations"	1776
A Commissioner of Customs in Scotland	1778
Lives in Edinburgh with his mother	1778-84
Dies in Edinburgh	July, 1790

(iii) CLAUDE HENRI, COMTE DE SAINT SIMON.

Born at Paris	1760
(Educated under direction of D'Alembert; a volunteer in the American War of Independence)	
Publishes "L'Industrie"	1817
" " "Système Industriel"	1821
" " "Catéchisme des Industriels"	1823
" " "Nouveau Christianisme"	1825
An old age of great poverty; died	1825

(iv) FRANÇOIS CHARLES MARIE FOURIER.

Born at Besançon	April 7, 1772
Son of a rich draper; well educated; travels: two years in army	1793
Then becomes a broker in a small way; publishes "Théorie des Quatres Mouvements" at Lyons	1808
Publishes "Nouveau Monde Industriel" . . .	1820
Attempt to realize his ideas by M. Dulary at Conde sur Vesgne, near Forest of Rambouillet	1832
Died	1837

(v) ROBERT OWEN.

Born of middle-class parentage at Newtown, Montgomeryshire	1771
To Stamford as a draper's assistant	1781
To Manchester	1785
Manager of the first cotton mill	1790
Marries Miss Dale	1800
Manager and part owner of New Lanark Mills, on the Clyde; 18 years of philanthropic mill-owning; gradually becoming rich and famous	1817-1828
Presents a Socialistic proposal to a Committee of the House of Commons on the Poor Law	1817
Practical attempts to carry out Owen's schemes at Orbiston, near Glasgow, and at New Harmony, Indiana, U. S. A.	1825
Both fail; Owen poor again	1827
Resigns all connection with New Lanark . . .	1828
Equitable Labor Exchange (labor notes instead of the middleman)	1832
Rest of life an indefatigable organizer of the Socialistic movement in England.	
Dies at Newtown	1858

(vi) FRÉDÉRIC BASTIAT.

Born at Bayonne, son of a landed proprietor . .	1801
Takes to economic writing	1834
Learns, through a stray copy of the <i>Globe</i> , of the Anti-Corn-Law League	
Writes an article for the <i>Journal des Économistes</i> which makes him famous.	

Friend of Cobden	1840-1845
Publishes "Harmonies Économiques"	1849
Dies at Rome	1850

(vii) FERDINAND LASSALLE.

Born at Breslau, son of rich Jewish parents . .	1825
Educated at Breslau and Berlin for a philosopher.	
Meets and impresses Heine	1846
Publishes "Philosophy of Heraclitus"	1858
" "System of acquired rights"	1861
" "Working Man's Programme"	1863
Imprisoned for this.	
Attacks Schultze-Delitsch for his efforts for voluntary co-operation	1864
Dies at Geneva after a duel with a rival lover .	1864
<i>(See G. Meredith, "Tragic Comedians," for a story based on his life.</i>	

(viii) KARL MARX.

Born of Jewish family at Treves.	1814
Educated at Bonn and Berlin	
Editor of newspaper at Cologne	1842
Paper suppressed by Government	1843
Exile at Paris	1843-4
Expelled at Paris, exile at Brussels	1844-6
Economical writings begin	
Publishes "Discourse on Free Exchange" . . .	1846
Manifesto of Communist party	1848
Expelled from Brussels	1848
Back to Germany: Editor again	
Expelled from Prussia	1849
Back to Paris; then to London	
Works quietly in London at Political Economy	1849-62
International Association of Working Men meets in London	1864
Publishes "Capital"	1867-1873
Died at Paris	1883

ESSAY QUESTIONS.

1. Trace the history of the theory of the "State of Nature," and examine its effects on economic science.
2. "Weismann has practically reopened the whole case in favor of socialistic communities." Criticise this statement.
3. Estimate the influence of Karl Marx's writings on current economic speculations.
4. "Civilized society would start back in horror from the crude brutalities of *laissez-faire*." Explain and criticise this statement.
5. Can civilized societies devise any substitute for the agency of natural selection regarded as the means of improving the *physique*, etc., of the human race?
6. Contrast the social ideal of Karl Marx and Mr. Herbert Spencer.



THE AMERICAN SOCIETY
FOR THE
EXTENSION OF UNIVERSITY TEACHING.

The Literary Study of the Bible.

THE position here taken is the vindication of the Bible as a medium for Higher Literary Education. This is distinct from

the question of the Bible in elementary education,
the distinctively religious use of the Bible,
the study of Scripture in the original tongues.

The present argument is from the literary, not from the biblical, point of view; the complaint is, *not* that the Bible is neglected, *but* that literary study is neglected; either literary study is altogether ignored—or assumed to need no training—or is swamped in other interests: linguistic (Classics), antiquarian, textual, bibliographical, etc.

Meanwhile there is an enormous educational waste in the storehouse of Biblical Literature being untouched for purposes of literary study—although

The Bible is a whole literature within the compass of a single volume—universally distributed and perfectly familiar.

It is universally recognized (apart from more sacred considerations) as being on the highest conceivable literary level.

Its range extends from the earliest literary efforts of the world to a period in touch with modern thought; thus the Bible lends itself directly to the Historical (or Evolutionary) study of literature.

The Bible (so far as it is not universal in character) is the literature of the Hebrew people; it thus provides for English readers the Comparative study of literature without the necessity of learning a new language.

Considering that the basis of higher education at present is the Classical literatures of Greece and Rome, why should not the Hebrew literature of the Bible occupy a similar place in more general education? Why not, in the highest education of all, place the Biblical and the Classical-literatures side by side?

CAUTION. (1) The whole question has been immensely prejudiced by the unfortunate antithesis, “literature *versus* dogma.” This antithesis is here altogether disclaimed: the treatment advocated is one consistent with all dogmatic positions. [Thus a Messianic, an individual, or a national interpretation of a psalm would all start from the same literary interpretation.]

(2) To many people “literary study” suggests only estimates of comparative worth, discussions of beauties and faults, which seems out of place in reference to Scripture. But such “judicial criticism” should be banished from all literary study, and is one of its greatest hindrances.

ILLUSTRATION of the literary standpoint.—*The Plagues of Egypt*.—The literary student, as such, would have no concern with questions respecting the miraculous character of the events, the authorship and date of the Pentateuch, etc.—but he would notice three presentations of this topic in the Sacred Writings, illustrating three different literary forms: Epic (*Exodus* vii. 8—xv. 21), Lyric (*Psalms* lxxviii. 42 or cv. 23), Picturesque (*Wisdom* xi. 5-26 and xvii. 1—xviii. 19).

I.

The Matter of Biblical Literature to be read in the light of contemporary History.

To a certain extent this is a universally recognized principle. Examples: *Psalms* xvi. and lxxvi. and overthrow of Sennacherib—especially *Psalms* xxiv. (add xv., ci.) and inauguration of Jerusalem as the seat of a new dispensation marked by a new Divine Name; compare last verse with ii. *Samuel* vi. 18. [An interesting exercise is to analyze the imagery, etc., of a writer for the purpose of creating the surroundings amid which he wrote; given *Job*, to describe the land of Uz; given *Ezekiel*, to study the prophet's place of exile.]

But an important practical principle needs assertion: *Contemporary history and literature must be studied independently, side by side, and not merely brought together by annotation.* Examples: Read continuously the history of the separate kingdom of Israel, and side by side study the prophet's Jonah, Amos, Hosea, Nahum—or study universal history previous to the rise of Greece, and then the "Burdens" of the prophets over surrounding countries, such as *Ezekiel* xxv—xxxii. [Stanley's *History of the Jewish Church* is a typical work for the interweaving of literature and history.]

II.

Literary form in application to Details. Parallelism.

1. The rhythmical style called "Parallelism," that is, the symmetry of clauses in a "verse," is the foundation of Hebrew versification—thus corresponding to rhyme and syllabic numbers in English, alliteration in old English, syllabic quantity in Latin and Greek. In such a language there is no hard-and-fast line between verse and prose, but rapid transitions and intermediate styles.

2. Parallelism may be made clear to the eye by printing—principle; similar members of a verse similarly indented.

3. For parallelism in its simplest form take *Job* xli.—the term includes antithesis, e.g. *Proverbs* xii.

4. Parallelism becomes more pronounced in distinct "figures."

(a) The Couplet:

*The Lord of Hosts is with us.
The God of Jacob is our refuge.*

and Triplet:

*He maketh wars to cease unto the end of the earth.
He breaketh the bow and cutteth the spear in sunder.
He burneth the chariots in the fire.*

[Modern chanting makes no distinction between verses which are couplets and verses which are triplets; which is like singing a "Common Metre" tune to a "Long Metre" hymn.]

(b) The Simple Quatrain, like Common Metre (*Ps.* xviii. 25):

*With the merciful
Thou wilt show Thyself merciful;
With the perfect man
Thou wilt show Thyself perfect.*

[Verses 25 and 26 make a Double Quatrain.]

- (c) The Quatrain Reversed, like the metre of *In Memoriam* (*Ps.* li. 1; *Ps.* cxxiii. 1, 2):

*Have mercy upon me, O God,
According to Thy loving-kindness:
And according to the multitude of Thy tender mercies
Blot out my transgressions.*

There is a Double Reversed Quatrain in *Psalm* cxxxv. 15-18:

*The idols of the nations are silver and gold,
The work of men's hands.
They have mouths, but they speak not;
Eyes have they, but they see not;
They have ears, but they hear not;
Neither is there any breath in their mouths.
They that make them shall be like unto them;
Yea, every one that trusteth in them.*

- (d) The Double Triplet (*Isaiah* xxxv. 5; *Matthew* vii. 7-8, xii. 35):

*Ask, and it shall be given you;
Seek, and ye shall find;
Knock, and it shall be opened unto you:
For every one that asketh receiveth,
And he that seeketh findeth,
And to him that knocketh it shall be opened.*

[For a Triplet see below, *Psalm* i. 1].

- (e) The Triplet Reversed (*Proverbs* xxx. 8-9; *Luke* xvi. 13; *Ezekiel* i. 27):

*Remove far from me vanity and lies;
Give me neither poverty nor riches;
Feed me with the food that is needful for me:
Lest I be full, and deny Thee, and say, Who is the Lord?
Or lest I be poor, and steal;
And use profanely the name of my God.*

- (f) Unbalanced figures (*Proverbs* xiii. 5):

*A righteous man
hateth lying:
But a wicked man
is loathsome,
and cometh to shame.*

There are still more elaborate figures:

- (g) The Chain figure: the goal of each clause becomes the starting point of the next (*Joel* i. 4; *Hosea* ii. 21-2; *Romans* x. 14-15; especially *2 Peter* i. 5-7):

*That which the palmerworm hath left
hath the locust eaten;
and that which the locust hath left
hath the cankerworm eaten;
and that which the cankerworm hath left
hath the caterpillar eaten.*

- (h) The Envelope figure: a series of parallels enclosed between an identical (or equivalent) Opening and Close (*Matthew* vii. 16-20; *Psalm* viii)

*By their fruits ye shall know them.
 Do men gather grapes of thorns?
 Or figs of thistles?
 Even so every good tree bringeth forth good fruit,
 But the corrupt tree bringeth forth evil fruit:
 A good tree cannot bring forth evil fruit,
 Neither can a corrupt tree bring forth good fruit.
 Every tree that bringeth not forth good fruit
 Is hewn down and cast into the fire.
 Therefore by their fruits ye shall know them.*

5. Such figures occur either pure, or intermixed with a sequence of words that does not enter into the rhythm, like the "Recitative" of a chant. Such a "Recitative" may occur

at the beginning: *Ps. i. 1* is a Recitative and Triple Triplet (see next page).

or at the close: *Isaiah vi. 10* is a Reversed Triplet and Recitative.

*Make the heart of this people fat,
 And make their ears heavy,
 And shut their eyes:
 Lest they see with their eyes,
 And hear with their ears,
 And understand with their heart:
 And turn again and be healed.*

or even by interruption in the middle: *Matthew xxiii. 16-19* has two Reversed Quatrains interrupted.

*Whosoever therefore shall swear by the Temple, it is nothing,
 but whosoever shall swear by the gold of the temple, he is a debtor:*

(Ye fools and blind)

*for whether is greater, the gold?
 Or the Temple that sanctifieth the gold?*

*And, whosoever shall swear by the Altar, it is nothing,
 but whosoever shall swear by the Gift that is upon it, he is debtor:*

(Ye fools and blind)

*for whether is greater the Gift?
 Or the Altar that sanctifieth the Gift?*

6. Parallelism has often an interpretative value: in the Lord's Prayer compare
Our Father which art in heaven, Hallowed be thy name. Thy kingdom come. Thy will be done in earth as it is in heaven.

with the same arranged as an Envelope figure:

*Our Father which art in heaven:
 Hallowed be thy name,
 Thy kingdom come,
 Thy will be done,
 In earth as it is in heaven.*

7. But the study of it is mainly important for training the sense of rhythmic style, which is as essential for the appreciation of biblical poetry as an ear for time is for the appreciation of music.—There are no positive laws of parallelism; the same passage admits of diverse arrangements, the only principle being symmetry.

- (a) Often a passage may be arranged wholly in figures: e.g. *Psalm* i.

Blessed is the man
That walketh not
in the counsel
of the ungodly,
Nor standeth
in the way
of sinners,
Nor sitteth
in the seat
of the scornful;
But his delight
Is in the law of the Lord;
And in his law
Doth he meditate day and night.
 And he shall be like a Tree
Planted
by the rivers of water,
That bringeth forth his fruit
in his season,
His leaf also
shall not wither,
And whatsoever he doeth
shall prosper.
The ungodly are not so,
But are like the chaff which the wind driveth away.
Therefore the ungodly shall not stand
in the judgment,
Nor sinners
in the congregation of the righteous.
For the Lord knoweth
the way of the righteous,
But the way of the ungodly
Shall perish.

- (b) But often the beauty of a passage is enhanced by suppressing figures in favor of more general parallelism. E.g. in *Psalm* ii, in order to bring out the parenthetic "laugh" between the counsels of the wicked and their confusion:

Why do the nations rage,
And the peoples imagine a vain thing?
The kings of the earth set themselves,
And the rulers take counsel together,
Against the Lord and against his Anointed,
Saying, Let us break their bands asunder,
And cast away their cords from us.
He that sitteth in the heavens shall laugh:
The Lord shall have them in derision.
Then shall he speak unto them in his wrath,
And vex them in his sore displeasure.

Similarly in *Ecclesiastes* xii. 1-7, the suppression of figures allows verses 1, 5, 7 (last clause), in which the symbolism is dropped, to stand out in their proper emphasis.

- (c) Finally, in all kinds of parallelism note the effect of an unexpected departure from the parallel—e.g. in *Psalm* cxxxix, which is an extended form of the Envelope figure, with a climax by change from the indicative of the opening verse to the imperative.—Or in the simile closing the Sermon on the Mount (*Matthew* vii. 24-27) note the substitution (in R.V.) of “smote” for “beat”:

*Everyone therefore which heareth these words of mine,
and doeth them,
shall be likened unto a Wise Man,
which built his house upon the Rock:*

*And the rain descended,
and the floods came,
and the winds blew,
and beat upon that house;
and it fell not:
for it was founded upon the Rock.*

*And everyone which heareth these words of mine
and doeth them not,
shall be likened unto a Foolish Man,
which built his house upon the Sand:*

*And the rain descended,
and the floods came,
and the winds blew,
and SMOTE upon that house;
and it fell:
and great was the fall thereof.*

III.

Literary Form in application to Wholes.

The Higher Unity.

1. The grand obstacle to the literary appreciation of Scripture is the mediæval conception of the Bible, from which we have not yet shaken ourselves free, as a mere collection of sentences or texts (compare division into verses in A.V.)—a first element in literary study must be to train our sense of the *higher unities*; that is, the unity of successive “verses” in one paragraph (or strophe); and further, the unity which binds the different parts of a book (or other composition) into one whole. [Illustration: compare *Psalm* xviii in Authorized and Prayer-book versions, and *Job* xxviii in Authorized and Revised versions.]

2. Unity is specially important in lyric poetry; indeed the unity is “the point” of a psalm or song, and is its chief literary effect. [Illustration: *Psalm* xxix and a thunderstorm passing from North to South.] Note the use of refrains to assist unity. [*Psalms* xli and xlii-xliii: especially *Psalm* cvii, where there are two distinct refrains, with an alteration at each repetition.]

3. But here caution is required; it must not be assumed that the “unity” in Hebrew poetry is always the same thing as the unity in modern lyrics; on the contrary, in a literature covering so wide a range we may expect to trace the widest diversity in the conception of lyric unity—we can arrange in a rough scale the different degrees of closeness or looseness in the bond uniting the different parts of Hebrew lyrics:

the strictest (modern) unity : as in *Psalm* xxix.

dramatic unity ; the bond lies in a *change*, from depression to triumph (*Psalm* lvii), or the reverse (*Psalm* lxxxix.)

unity of parallelism or antithesis ; the point of *Psalm* xix lies in the equal adoration side by side of the physical and moral law (compare Kant's saying).

unity of succession ; *Psalm* lxv rehearses all the elements of worship as a creed rehearses the articles of belief [verse 1 praise and vows, 2 prayer, 3 penitence, 4 the devout life, 5-8 providence, 9-13 nature and the rhythm of the year].

unity of historic narrative [here lyric approaches epic poetry] : *Psalms* cv and lxxviii.

formal unity of really separate "sayings" ; especially the alphabetical bond ; *Psalms* cxix and xxxvii ; also xxv, xxxiv, cxi, cxii, cxlv.

loose aggregation of separate sayings, as in the earlier chapters of *Proverbs* ; and

stringing together of completely isolated "aphorisms," as in *Proverbs*, chapters x to xxiv. [In this last the unity has completely disappeared.]

[The tendency to assume the modern conception of unity is a fertile source of diversity in interpretation — thus *Psalm* lxv (see above) has been variously interpreted as celebrating prosperity attending pardon after sin (verse 3), or rain after drought (verses 3, 5) — but such theories fail because they give significance to only a few of the particulars.]

4. The higher unity is the basis for distinguishing different forms of composition. Literary Morphology is a very unsettled science at present — but a rough arrangement may be made of prominent literary forms in the Bible.

{ Legal Digest : as *Leviticus*.
Epistles : e.g. of St. Paul.
Speeches : *Deuteronomy*.

Epic { Prose Epic, or History, which may of course incorporate legal documents, poems, speeches : *Genesis*, *Isaiah* xxxvi-xxxix, the Gospels.
Mixed Epic, that is, prose breaking into verse as the thought requires. [A form peculiarly adapted to Hebrew — of late years finding its way into English in such a work as Wm. Morris' *House of the Wolfings*.]
Examples : History of Balaam (*Numbers* xxii-xxiv,) *Book of Jonah*.

Lyric { The "Burden" "or Oracle," a special Hebrew form, somewhat corresponding to the Ode or Dirge : e.g., *Ezekiel* xxv-xxxii, and the Prophets generally.
Psalms and Hymns.
Folk-Songs : Of the Well (*Numbers* xxi. 17-18) — of the Sword (*Genesis* iv. 23-4.)
Occasional Songs : Deborah's Triumph (*Judges* v) — Last Words of David (2 *Samuel* xxiii) — Elegy over Saul and Jonathan (2 *Samuel* i. 19).
Ritual Hymns (for more than one performer) : *Psalms* cxviii, and especially cxxxvi.
Amœbæan Lyrics : *Solomon's Song* [Not Drama, because no action. The place of Drama was supplied among the Hebrews by *acted prophecies*.]

Gnomic Writings or "Wisdom," analogous to our Philosophy and Science. { Isolated (and aggregated) "Proverbs"; *Book of Proverbs* and *Ecclesiasticus*.
Dramatized Wisdom; *Ecclesiastes*, *Wisdom of Solomon*.

The Parable { The Fable: e.g. of Jotham (*Judges* ix. 8); *Isaiah* v.
The Parable Proper: e.g. the Parables of our Lord.
The Dramatized Parable: *Job*. [This seems the technical description of it, whether the events are historical or not].

It will be observed that a "book" of Scripture may contain many separate compositions—a great desideratum is the separation by the printer of such compositions, with proper titles, etc. [An approach to this in R. V. of *Isaiah* i-xxxv].

5. Nevertheless, *it is an important exercise to read a book of the Bible as a whole, if possible at a single sitting, for the purpose of catching its unity*. Illustration; *Deuteronomy* is a series of Farewell Speeches by Moses—

First Speech: i—iv. 40.

Second Speech, with Recital of the Law: v—xxvi.

Ceremonial of the Curse, and Moses' Solemn Appeal: xxvii—xxviii.

Moses' Personal Farewell. xxix—xxxi. 8.

Two poems are added: The song of Moses (xxxii)—his Last Words (xxxiii).

upon which an intense interest is thrown by the constant shadow of the pathetic situation in which they are delivered; the leader of the Hebrews through their wanderings alone realizing the promised land from which he alone is excluded [this thought is continually breaking out: i. 37, iii. 23, iv. 21, xxxi. 14, xxxii. 48]. Note also a crescendo of interest throughout the book; narrative review, appeal, ceremonial and passionate denunciation, personal farewell and tenderness, climax in song, simple prose account of the pathetic end.

6. Interpretative value of Literary Form.—As an illustration: Considerations of form bring together in the closest connection two books, *Ecclesiastes* and *Wisdom* [both come under the head of "Dramatized Wisdom," and the speaker in both is the same historical personage]—now *Ecclesiastes* has always been felt a difficulty of the Old Testament, as seeming to give consecration to low views of life—the key to it is found by reading it in the light of the other work of the same form.

Ecclesiastes. Here the great note is, absolute confinement to this life—from which standpoint all is vanity. [The moral grandeur of the book lies in the way the preacher holds fast his integrity, his faith in God, and even his joy in life, in spite of the moral chaos to which his survey of life has led him.]

Wisdom of Solomon brings the corrective, by starting from the Immortality of the Soul and the Future World that is to correct the anomalies of the present existence (i—v): in this new light it discusses "Wisdom."

Conclusion.

The present plea is based upon literary, not upon religious grounds—but from the latter standpoint what has been advocated cannot but be desirable. No study is sound in method that does not kindle affection for the matter studied; and a fresh link of affection for the Bible cannot but prove a religious force.

*New Square, Cambridge,
September, 1890.*

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