nothing about the *sensorium* or its connection with, or mode of operation upon, the nerves of sensation; and from the analogy of sight and hearing he has no hesitation in predicting that there may be found persons whose color-blindness is confined to one eye, or at least is greater in one eye than in the other. "Nor is this (says he) wholly a conjecture from analogy, for my own right eye, though not a better one than the left, which has no defect whatever, is more sensible to red light than the left eye." The case is precisely analogous with respect to his ears, for certain sounds; and no person, it is presumed, will maintain that there is a sensorium for each ear and each eye.

Whatever may be the cause of the inferiority, there exists a very easy means of compensating it to a certain extent. This method, first used by Dr. Seebeck, consists in viewing colored objects through colored media. Suppose the medium to be a piece of red glass; the impression of a red body and a green one on the eye of a person like Dr. Dalton, would be different, although with the naked eye they would be the same. The red glass would intercept much more of the light of the green object than of the red one, and hence the two would be readily distinguishable by a difference in the intensity of the illumination of the two objects. Nothing can equal the surprise, says Professor Wartmann, of a *Daltonian* when the errors which he commits every day in the appreciation of colors are thus disclosed to him.

EXPERIMENTS ON ELECTRICAL DISCHARGE.

(Proceedings of the American Philosophical Society, vol. IV, pages 208, 209.)

November 7, 1845.

Professor Henry communicated the result of a series of experiments on electricity made last winter. They had reference, first, to the discharge of electricity through a long wire connected with the earth at the farther end; secondly, to the discharge of a jar through a wire; and, thirdly, to an attempt to account for the phenomena of dynamic induction.

He first showed that when a charge of electricity is given

to one end of a wire, the different parts of the wire become charged successively, as though a wave of electricity passed along it. He then showed that the charge passed along the surface of the wire, and not through its whole mass, as was supposed from the analogy of galvanic conduction. Hence he inferred that dynamical electricity obeys the same laws as the statical. He then detailed some experiments upon the passage of electricity through plates, and showed that when a charge was transmitted across a plate the tension was greatest at the edges, the electricity apparently exercising a self-repelling action; while if the charge were passed through two pieces of tinfoil, these slips attract each other.

Professor Henry believes that it may be justly inferred from these experiments, that the attraction is due to ponderable matter, while the repulsion is due to electricity; thus showing that electricity is a separate principle, and not a mere property of matter.

He next passed to the subject of the discharge of a jar. It was necessary, in his experiments, to get rid of the free electricity arising from the thickness of the glass, and it occurred to him that this might be done by removing the knob, and making the coating upon the inside of less area than that upon the outside. With this arrangement, when the discharge was made through a long wire, and a test jar brought near it during discharge, a bright spark passed; but upon approaching the jar to a delicate electrometer it gave no indications of free electricity. Reflecting upon this, and upon an experiment of Professor Wheatstone's, he was led to believe that the jar is discharged by two waves, a negative and a positive one, starting simultaneously from the two ends of the wire. To prove this he broke the wire, and interposed a pane of glass dusted with red lead and sulphur; two figures of positive and negative electricity were produced. He made several other experiments tending to prove this same fact. He showed how these experiments serve to explain that of Dr. Priestly, where a spark was found to pass between the ends of a long bent wire, the ends being brought within a few inches of each other.

He next passed to the connection between statical and dynamical induction. Statical induction has heretofore been observed only at short distances. His first experiment proved that it could be observed at the distance of nineteen feet, the floor of a chamber intervening, showing that statical induction takes place at great distances, though not at so great distances as the dynamical. He then explained his views of the nature of dynamical induction. When a spark is thrown upon a wire it passes in a wave, whose length might be determined if we knew the velocity of electricity. Now, if we have another parallel wire, a negative wave will be formed in this, and the two waves will travel simultaneously in the same direction. But this is equivalent to a positive induced wave in the opposite direction. In this way the phenomena accompanying the discharge of a jar are easily explained. Again, if we conceive that in a galvanic battery the discharge consists of a series of such waves, we may very simply explain the phenomena of galvanic induction.