

16. *Aurora Borealis of February 18, 1837.*—A very beautiful display of Northern Lights was witnessed on the night of the 18th February last, at London, Belfast, Paris, Göttingen and many other places in Europe. At Göttingen it was visible from 7 P. M till 2 A. M of 19th inst., and according to the observations of GOLD-SCHMIDT,* produced a very sensible disturbance of the magnetic needle. The range of the needle's variation was about 20', and its movements rapid.

It is an interesting fact, that on this same evening the Aurora Borealis was visible at this place, (distant 83° of long. from Göttingen,) and that its effect on the magnetic needle here was very manifest. Soon after sunset, the east to the altitude of 40° was tinged with a faint purple color, and from the end of twilight until about 9 P. M, a broad indefinitely-bounded zone of a dim red, spanned the heavens from east to west. It was however too indistinct to attract much attention. At 9h. 15m. P. M. mean time, a region about 10° wide and 15° high, (having its center at N. 30° E.,) was lighted up with a beautiful rose-red. Without any perceptible change of position, this illuminated region was visible till 11 P. M., (when the observations ceased,) often varying in intensity from a deep rose-red to a faint and scarcely appreciable stain. During this time, no auroral light was seen in any other part of the sky. The needles of a Variation Transit and of a theodolite were first inspected at 9h. 20m. and the north end of each was then found about 15' east of its usual position at this hour. At 9h. 22m. the variation reached its maximum, viz. 35' east of the mean.† From this period until 11 P. M., the needle moved back and forth, at times with considerable rapidity, and almost wholly on the eastern side of its mean direction. The times above given are uncertain within three minutes.

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17. *The Production of Galvanic Music.*—The following experiment was communicated by Dr. C. G. Page of Salem, Mass., in a recent letter to the editor. From the well known action upon masses of matter, when one of those masses is a magnet, and the other some conducting substance, transmitting a galvanic current, it might have been safely inferred (a priori,) that if this action were prevented by having both bodies permanently fixed, a molecular derangement would occur, whenever such a reciprocal action should be estab-

* L'Institut, April 5, 1837.

† N. 5° 55' W.

lished or destroyed. This condition is fully proved by the following singular experiment. A long copper wire covered with cotton was wound tightly into a flat spiral. After making forty turns, the whole was firmly fixed by a smearing of common cement, and mounted vertically between two upright supports. The ends of the wire were then brought down into mercury cups, which were connected by copper wires with the cups on the battery, which was a single pair of zinc and lead plates, excited by sulphate of copper. When one of the connecting wires was lifted from its cup a bright spark and loud snap were produced. When one or both poles of a large horse shoe magnet, are brought by the side or put astride the spiral, but not touching it, a distinct ringing is heard in the magnet, as often as the battery connexion with the spiral is made or broken by one of the wires. Thinking that the ringing sound might be produced by agitation or reverberation from the snap, I had the battery contact broken in a cup, at considerable distance from the field of experiment; the effect was the same as before. The ringing is heard both when the contact is made and broken; when the contact is made, the sound emitted is very feeble; when broken it may be heard at two or three feet distance. The experiment will hardly succeed with small magnets. The first used in the experiment, consisted of three horse shoes, supporting ten pounds. The next one tried was composed of six magnets, supporting fifteen pounds by the armature. The third supported two pounds. In each of these trials the sounds produced differed from each other, and were the notes or pitches peculiar to the several magnets. If a large magnet supported by the bend be struck with the knuckle, it gives a musical note; if it be slightly tapped with the finger nail, it returns two sounds, one, its proper musical pitch, and another an octave above this, which last is the note given in the experiment.

18. *The American edition of Dr. Buckland's late Work on Geology and Mineralogy, considered with reference to Natural Theology.* Carey, Lea & Blanchard, 2 vols. 8vo. Phil.

We are happy to see this admirable work laid before the American public. We have already recorded our favorable opinion of it, and a reiterated perusal and study only confirm the conviction of its high claims to the attention of the scientific and religious world. Both its physical and moral demonstrations are of the highest order, and it has settled forever (if it had not been settled before,) the great