

From this it appears, that though the Magdeburg iron contains all the ingredients characteristic of meteoric iron, it is essentially distinct from all others hitherto examined, by the presence of molybdenum and arsenic ; by the smaller and rather anomalous proportion of nickel and cobalt which enters into its composition ; by the admixture of some capillary copper and of variegated copper ore, instead of the magnetic pyrites found in some meteoric iron ; and, lastly, by the presence, though only a trace, of sulphuret of silver.

Professor Stromeyer then enters into an examination of the circumstances which appear opposed to the opinion which assigns a meteoric origin to this iron, and of the objections against its being the product of artificial fusion ; among which, one of the greatest is its considerable alloy of molybdenum,—a metal which has hitherto not been observed either in ores of iron and copper, or in any slags or other products of smelting furnaces. But Dr. Stromeyer has since obtained, from the Hartz Mountains, a similar and equally problematical mass of iron, the analysis of which has furnished nearly the same results as that of the Magdeburg iron, except that it contained no variegated copper ore. Future observations will probably throw more light upon the nature of these enigmatical metallic bodies ; at all events, the discovery of molybdenum in them is so far of great interest, as, in case they should ultimately prove to be artificial products, it is fair to conjecture that that scarce metal must enter into combinations still unknown to the chemical mineralogist, or occur in some ores in a masked state and such small proportions as to become (like titanium) apparent only in the products of the long-continued operations of the smelting furnace.

The following papers were read :—

1. "Observations on the Physiology of the Nerves of Sensation, illustrated by a case of Paralysis of the Fifth Pair." By John Bishop, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The influence of the fifth pair of nerves on the functions of sight, smell, and taste, is a subject which has lately occupied the attention of physiologists. Many experiments have been made on living animals with a view to its elucidation ; but these experiments have never led to any satisfactory conclusion. Considerable light has been thrown upon this obscure question by the phenomena attending a case of paralysis of the fifth pair of nerves, which occurred in the author's practice, and of which he gives the history in detail, after quoting the account given by Magendie of his experiments and speculations respecting the functions of these nerves.

The lady who was the subject of these observations had been affected with total insensibility of the left side of the face and head, together with strabismus, accompanied with double vision ; but the powers of voluntary motion of all these parts remained entire. The globe of the left eye was quite insensible to touch, though it retained the power of vision unimpaired, excepting that for some time previous to death it had lost the faculty of distinguishing colours. The left nostril received no impressions from the most irritating stimulants,

such as snuff or ammonia ; yet the sense of smelling continued unimpaired. The left side of the tongue was quite insensible to impressions both of touch and of taste. On examining the brain after death, a scirrhus tumour was found lying on the inner surface of the sphenoid bone, extending laterally to the foramen auditorium internum, and resting posteriorly on the pons Varolii, which was slightly ulcerated. The tumour had completely obliterated the foramina for the exit of the three branches of the fifth pair of nerves. This case proves, therefore, that, contrary to the opinion of Magendie, the senses of smell and vision can be exercised independently of the fifth pair of nerves ; and that the sense of taste is altogether derived from that nerve ; and corroborates the views of Sir Charles Bell on this part of physiology.

2. "On the Respiratory Organs of the Common Leech (*Hirudo officinalis*, Linn.), and their Connexions with the Circulatory System." By George Newport, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The stomach of the leech has been hitherto described as a large elongated sac, simply divided into ten compartments by perforated membranous partitions : but the author, by a more accurate examination, finds that each portion of that organ is expanded into two lateral cæca, which increase both in size and in length as they are traced along the canal towards the pylorus. The cæca belonging to the tenth cavity are the longest, extending as far as the anus, and have themselves four constrictions : the cavity itself terminates in a funnel-shaped pylorus. When the posterior end of the animal is cut off, the cæcal portions of the stomach are laid open, and the blood which it receives flows out freely, as fast as it is swallowed ; and hence the leech, under these circumstances, continues to suck for an indefinite time.

The respiratory organs consist of two series of pulmonary sacs, arranged along the under side of the body, on each side of the nervous cords and ganglia. They each open upon the surface of the body by a very minute but distinctly valvular orifice. The membrane which lines them appears to be continuous with the cuticle, and is exceedingly delicate and highly vascular, receiving the blood, for the purpose of its being aerated, from the veins of the system. The blood is returned from these sacs into the lateral serpentine vessels by vessels of a peculiar construction, passing transversely, and forming loops, which are situated between the cæca of the stomach, and which are studded by an immense number of small rounded bodies closely congregated together, and bearing a great resemblance to the structure of the venæ cavæ of the cephalopodous Mollusca. The purpose answered by this structure is involved in much obscurity : the author offers a conjecture that they may be analogous in their office to the mesenteric glands of the higher animals.

With a view to determine some circumstances relating to the mode of the respiration of the leech, the author made some experiments, by confining the animal in water deprived of air by boiling. After some