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A VIEW OF THE PROGRESS OF DISCOVERY

IN NATURAL PHILOSOPHY, CHEMISTRY, MINERALOGY, GEOLOGY, BOTANY, ZOOLOGY, COMPARATIVE ANATOMY, PRACTICAL MECHANICS, GEOGRAPHY, NAVIGATION, STATISTICS, ANTIQUITIES, AND THE FINE AND USEFUL ARTS.

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brown, or blackish-brown, and it loses from 20 to 50 per cent. of its weight. Before the blowpipe it instantly blackens, and becomes susceptible of magnetic influence. When immersed in muriatic acid, it dissolves slowly, with effervescence, and leaves a residue composed of a mixture of argillaceous and bituminous matter. This solution, which is of a greenish-yellow colour, on receiving the addition of nitric acid, becomes for a few seconds of an intense olive-brown, and almost immediately after loses this appearance, turning yellow, and giving off at the same time copious nitrous fumes. When smelted in the blast furnace, the ore yields, on an average, about 30 per cent. of cast iron.

(To be continued.)

ART. V.—*On Sternbergite, a New Mineral Species.* By WILLIAM HAIDINGER, Esq. F. R. S. E. &c. Communicated by the Author.*

I. DESCRIPTION.

FUNDAMENTAL form. A scalene four-sided pyramid. P=128° 49′, 84° 28′, 118° 0′. Plate III. Fig. 1.

$$a : b : c = 1 : \sqrt{1.422} : \sqrt{0.484}.$$

Simple forms. P—∞ *(a)*; P *(f)*; P + 1 *(g)* = 122° 17′, 68° 22′, 146° 34′; $(\breve{P}r)^3$ *(d)* = 92° 28′, 107° 17′, 131° 17′, $\breve{P}r$ + 1 *(b)* = 61° 35′, $\frac{5}{4}\breve{P}r + 3$ *(c)* = 13° 36′, $\breve{P}r + \infty$ *(i)*; $\frac{4}{5}\overline{Pr} - 3$ *(h)* = 153° 2′.

Various combinations among these forms have been observed, one of them is represented, Fig. 2. They have all more or less the aspect of rhombic plates, with angles of 119° 30′, and 60° 30′, which is the base of the fundamental pyramid; often the acute angle is truncated.

Cleavage highly perfect, and easily obtained parallel to the face *a*. No trace of cleavage in other direction of the lamellæ, which may be torn asunder like thin sheet-lead.

Surface of *a* delicately streaked parallel to the edges of combination with *h*, that is parallel to the long diagonal of the rhombic plates. Lustre more considerable upon these than

* Abstract of a paper read before the Royal Society of Edinburgh on the 4th of December 1826.

upon the remaining faces, which are deeply streaked parallel to their intersections with *a*.

Lustre metallic. Colour dark pinchbeck-brown, rather darker than the colour of magnetic pyrites. Streak black. Tarnish, often violet-blue on all the faces except *a*.

Very sectile. Thin laminæ perfectly flexible. Hardness = 1.0...1.5, little superior to talc. Specific gravity = 4.215.

Compound varieties. Twin-crystals, joined parallel to a face of P + ∞, similar Fig. 3. Generally several crystals are joined in an irregular manner, and implanted together, being fixed to their support with one of their sides, so as to produce rose-like aggregations and globules, with a drusy surface. Massive varieties usually present the aspect of a coarse-grained mica.

II. Observations.

1. The two specimens from which the preceding description is drawn up I first saw when in Prague in March 1826. They were pointed out to me as something not agreeing in several respects with the known species, by Professor Zippe, one of them in the collection of the National Museum, the other in the collection of Gubernialrath Neumann; the latter specimen was designated on the ticket as a pinchbeck-brown problematical fossil, crystallized in six-sided tables. Both these gentlemen entrusted me liberally with the specimens for examination, the only specimens then known to exist. I am happy to learn that Mr Zippe has succeeded in finding out a few more specimens, in rummaging over some old store of minerals.

2. There exists a considerable deal of resemblance, as appears also from the characters given, between the Sternbergite, and the black tellurium, the flexible sulphuret of silver, and the rhombohedral molybdena-glance. As a species it is sufficiently distinct from all of them. On account of that resemblance it must receive its place in the order Glance of the system of Mohs; but whether as a genus of its own, or along with some one or the other of those enumerated, is as yet uncertain, while these species themselves are so imperfectly known. No systematic denomination can therefore be at present proposed for the new species. The name of Sternbergite, in proposing

which I concur with my friends Neumann and Zippe, is particularly appropriate, as the species to which it applies was first observed in a public collection, belonging to an establishment chiefly formed by the exertions of that learned and patriotic nobleman, Count Caspar Sternberg.

3. No chemical analysis has yet been given of this substance. When treated with the blowpipe it gives in the glass tube a strong odour of sulphurous acid, loses its lustre, and becomes dark-grey and friable. Alone on charcoal it burns with a blue flame and sulphurous odour, and melts into a globule, generally hollow, with a crystalline surface, and covered with metallic silver. The globule acts strongly on the magnetic needle, and before the blowpipe has all the properties of sulphuret of iron. It communicates to fluxes the ordinary colours produced by iron, red while hot, and yellow on cooling, in the oxidating flame, greenish in the reducing flame. Borax very readily takes away the iron, and leaves a button of metallic silver. It appears therefore to consist of sulphuret of silver, combined with a large quantity of sulphuret of iron.

4. The locality of this interesting species is Joachimsthal in Bohemia. It must have been found at a rather remote period, as the specimens were discovered in old collections; and it is likely enough, on account of the economical value of Sternbergite as an ore of silver, that most of it has been melted down long ago. Moreover, it is chiefly accompanied with other ores of silver, as the red silver, the brittle silver, or prismatic melaneglance, and others.

ART. VI.—*Description of a plant used in Bengal as a common green vegetable,* (Olus,) *and of another nearly allied to it.* By FRANCIS HAMILTON, M. D. F. R. S, &c. Communicated by the Author.

IN Gangetic India this plant is called Palak or Palanki, names that have been given to the spinach of Europe, when this was introduced, both being cultivated in a similar manner, and having similar alimentary qualities. Dr Roxburgh considered it as a species of Beta, and called it *B. Bengalensis*, which