thought it deserved particular examination, although the quantity which he could obtain was too small for accurate analysis.

The appearance of this mineral is whiter than Peruvian platina; the grains are rougher and more angular, being evidently fragments of larger masses, very little worn at their surfaces. When examined by solution and precipitation, the greatest part of the grains appeared to be platina nearly pure, as they are free from iron, which forms a considerable part of the Peruvian ore; and apparently free from the several metals, which have within these few years been discovered in that mineral; but they contain, on the contrary, a small quantity of gold, which is not contained in the grains of Peruvian platina.

The author discovered also, among the grains of native platina, a few fragments of native palladium, which he describes as resembling, in the whiteness of their colour, the grains of platina, but differing from them in presenting an appearance of fibres diverging from one extremity. These grains are readily detected by their solubility, and by the red colour of the solution; that they consisted of palladium, was proved by precipitation with prussiate of mercury, or green sulphate of iron, as well as by their fusibility by assistance of sulphur. It is remarked, however, that these grains are not absolutely pure, but contain a very small quantity of platina, which, by its redness when precipitated, seems to be contaminated by iridium.


The mineral of which this account is given was raised in a very rich copper-mine called Huel-Unity, in the parish of Gwennap, having been found at the depth of fifty fathoms, at the junction of two small lodes or veins. This ore is mixed with some native copper, very rich gray copper, and black copper ore.

It crystallizes in the form of a hexahedral prism, terminated in general by a plane, but sometimes by a taper six-sided pyramid. The colour is generally a shade of yellow, but sometimes wine-yellow, like the Brazilian topaz, and sometimes as dark as brown sugar-candy. The hardness varies, and is sometimes sufficient to scratch flint-glass. The specific gravity at 50° temperature is 6.41.

Being exposed to heat upon a gold spoon, it melts into a brownish-yellow mass, and remains unaltered in a state of ignition. But if heated upon charcoal, it is rapidly decomposed, arsenical vapours being extricated, while the lead is reduced to its metallic state.

The mode of analysis adopted by the author consisted in reducing the ore to a fine powder, and decomposing it by a solution of pure potash, with due precaution to avoid the solution of lead by the alkali along with the arsenic acid. The arseniate of potash was decomposed by nitrate of lead, which gave an arséniate of lead, consisting of known proportions, from which the quantity of arsenic acid in the ore was found to be 26.4 per cent.
The oxide of lead, which had been deprived of its arsenic acid by the potash, was then dissolved in nitric acid, and precipitated by sulphate of soda in the state of sulphate of lead, from which the quantity of lead in the ore proved to be 69\(\frac{3}{4}\) per cent.

Mr. Gregor has found only one specimen in which the proportion of lead to the acid was materially different. In this instance the oxide of lead was 71\(\cdot\)45, and the acid 23\(\cdot\)88, instead of being, as before, 69\(\frac{3}{4}\) and 26\(\frac{3}{4}\).

Beside these ingredients, the ore also contains a portion of muriatic acid; and the author has also detected small but variable proportions of iron and silica.

The quantity of muriatic acid was ascertained by solution of the ore in nitric acid, and precipitation as usual by nitrate of silver. But Mr. Gregor found it necessary to take certain precautions; for if the solution be made with much heat, part of the muriatic acid is lost by boiling; and if the solution be too concentrated, an arseniate of silver is precipitated along with the muriate, and will then require to be separated, either by solution of it in nitric acid, or by means of its insolubility in pure ammonia, which dissolves the muriate.

In order to determine decisively the nature of the principal acid present in this ore, Mr. Gregor decomposed a portion by sulphuric acid, and, after evaporation of the fluid poured off, reduced a part of the acid upon charcoal. Part was dissolved in water, and precipitated titanium from sulphate of titanium; part was neutralized with soda, and occasioned a brick-coloured precipitate from nitrate of silver, and a reddish yellow precipitate from nitrate of mercury.

From the whole of the experiments detailed in the paper, the author concludes that 100 parts of the ore contain 69\(\cdot\)76 oxide of lead, 26\(\cdot\)40 arsenic acid, 1\(\cdot\)58 muriatic acid; and that the silica and oxide of iron are not essential to its composition.

An anatomical Account of the Squalus maximus (of Linnaeus), which in the Structure of its Stomach forms an intermediate Link in the Gradation of Animals between the Whale Tribe and Cartilaginous Fishes. By Everard Home, Esq. F.R.S. Read May 11, 1809. [Phil. Trans. 1809, p. 206.]

The fish described in this account was caught in a herring-net at Hastings, from whence such parts as were more particularly deserving of notice were brought to London for further examination.

It was a male, thirty feet six inches long, and nine feet broad, from the tip of the dorsal fin to the middle line of the belly.

The skin was of a light slate-colour, and though as rough as a new file in the direction from the tail to the head, yet as smooth as satin in the opposite direction.

The mouth was about five feet wide, with six rows in each jaw of small conical teeth, rather curved inwards.

The nostrils were placed on the edge of the upper lip.

The eyes very small, with pupils perfectly round.