mountains or in the open sea. Hence it follows, that the mercury ought to stand somewhat higher when such a wind blows than with the same wind when it meets with no obstruction; and the more direct it blows upon the coast, and the higher the land is, the higher ought the mercury to rise. On the other hand, when the wind comes from off the hills, this dense air will be displaced; and thus the air over the coast will resume its natural state with a land wind.

Capt. Flinders concludes his paper with some general remarks upon the barometer, of which the following seem to be the most material:

It is not so much the absolute as the relative height of the mercury, and its state of rising and falling, that are to be attended to in forming a judgement of the weather.

In the open sea, the changes in the weather, and in the strength of the wind, appear to be the causes that chiefly affect the barometer; but, near the shore, a change in the direction of the wind seems to affect it as much, or more, than either of those causes taken singly.

On the open sea, also, the mercury seems to stand higher in a steady breeze of several days' continuance, provided it does not blow hard, than when the wind is variable. Perhaps it is on this account, as well as from the direction of the wind, that the mercury stands higher within the tropics than in those parallels where the winds are variable.

Upon the whole, our author thinks the barometer capable of affording so much assistance to the commander of a ship, that no commander in a long voyage should be without one.

Account of a Discovery of native Minium. In a Letter from James Smithson, *Esq. F.R.S. to the Right Hon. Sir* Joseph Banks, *K.B. P.R.S.* Read April 24, 1806. [*Phil. Trans.* 1806, *p.* 267.]

The minium here described by Mr. Smithson was found disseminated in a compact carbonate of zinc. Its general appearance was pulverulent; but when a lens was used, it showed, in some places, a flaky and crystalline texture. Its colour was the same as that of factitious minium: when gently heated by the blowpipe it became more obscure, but returned, upon cooling, to its original colour. By a stronger heat it melted into litharge; and, upon charcoal, was reduced to lead.

In dilute nitric acid it assumed a coffee-colour; and on the addition of a little sugar, this brown calx was dissolved, producing a colourless solution. Upon being put into muriatic acid, with a little leaf-gold, the gold was soon entirely dissolved.

When it was inclosed in a small bottle with muriatic acid, and a small piece of turnsole paper was fixed to the cork, the paper in a short time entirely lost its blue colour, and became white. Even a slip of common blue paper, whose colouring matter is indigo, when placed in the above situation, underwent the same change.

This native minium, Mr. Smithson says, seems to be produced by

the decay of galena, which he suspects to be itself a secondary production, arising from the metallization of white carbonate of lead by hepatic gas. This, our author says, appears evident in a specimen which he means to send to Mr. Greville. In one part of this specimen there is a cluster of large crystals; one of which, upon being broken, was found to be converted into minium, to a considerable thickness, while its centre was still galena.

Mr. Smithson does not say where this native minium was found; but his letter is dated from Cassell in Hesse.

Description of a rare Species of Worm Shells, discovered at an Island lying off the North-west Coast of the Island of Sumatra, in the East Indies. By J. Griffiths, *Esq. Communicated by the Right Hon. Sir* Joseph Banks, *K.B. P.R.S.* Read February 13, 1806. [*Phil. Trans.* 1806, *p.* 269.]

The shells here described were discovered in a small island called Battoo, after a violent earthquake that occurred in the year 1797. Upon the receding of the inundation caused by the earthquake, they were seen protruding from a bank of slightly-indurated mud, in a small sheltered bay, surrounded by coral reefs. They were procured by means of a servant sent by Mr. Griffiths for that purpose, who was very expert in diving, and who stated that he found these shells sticking out of the mud to the extent of ten inches, or even more, and being from one to three fathoms under water. They were in considerable number, standing in different directions, and separate from each other. Mr. Griffiths was informed that the shells were filled with a soft gelatinous flesh, and that the animal threw out tentacula, resembling small Actiniæ, from the two apertures at the apex. They were easily extracted from their bed, but were all mutilated more or less: this, the author thinks, was occasioned by the earthquake.

The longest of these shells that came into the possession of Mr. Griffiths was five feet four inches in length. The circumference at the base was nine inches, tapering upwards to two inches and a half. But others were of very different dimensions. The large end of the shell is completely closed, and has a rounded appearance: at this part it is very thin. The small end, or apex, is very brittle, and is divided by a longitudinal septum, which extends downwards eight or ten inches, into two distinct tubes, from whence protrude the tentacula already mentioned. The substance of the shell has a radiated appearance, and having an outer crust of a pure white colour, and an inside enamel of a yellow tinge. The external surface is often interrupted by a sudden increase of thickness, which probably indicates the different growths of the shells; but these interruptions are merely on the outside shell, and do not extend into the radiated substance. The thickness of these shells varies very much; so also does their shape, some being nearly straight, others crooked and contorted. Their internal surface is generally smooth, but is sometimes