

Respecting the primitive rhomboid of carbonate of lime, he has already communicated to the Society an observation, that its angle is greater by full half a degree than that assigned to it by crystallographers; and he now adds two corresponding observations respecting those substances which are so nearly allied to it.

By employment of the same improved method of measurement by means of the reflective goniometer, he has found that the obtuse angle of the primitive rhomboid of bitter-spar, exceeds that of carbonate of lime by full  $1^{\circ} 10'$ ; and that the corresponding angle of iron-spar exceeds the same angle by nearly  $2^{\circ}$ , and accordingly is, in fact,  $2\frac{1}{2}^{\circ}$  greater than former measures had given it.

The angle of carbonate of lime is here said to be  $105^{\circ}$ , and nearly  $5'$ . That of bitter-spar  $106\frac{1}{4}^{\circ}$ ; that of iron-spar  $107^{\circ}$ . And since in the last instance the author found the substance under examination to be wholly free from lime, he infers that when the same form occurs in other specimens that do contain carbonate of lime, it does not depend on the presence of that ingredient, but depends on the carbonate of lime alone.

He thinks it, however, possible, that in certain mixtures each of these substances may exert their crystalline powers; and in consequence of the near agreement of their primitive angle, may occasion that degree of curvature of the surfaces which gives the peculiar lustre of what is called pearl-spar.

Among the varieties of these minerals which contain manganese, the author has thought it not improbable that the form of some of them might be altered or modified by its presence; but he has not hitherto succeeded in detecting any other form which could be ascribed to that ingredient.

*Observations intended to show that the progressive Motion of Snakes is partly performed by means of the Ribs.* By Everard Home, Esq. F.R.S. Read February 27, 1812. [*Phil. Trans.* 1812, p. 163.]

In the cobra di capello, Mr. Home formerly observed to the Society, that the power which it possesses of elevating its hood, depends on the motion of the ribs of the neck, which have a peculiar form adapted to that purpose. He has lately found that this motion is not, as he then supposed, confined to those ribs alone of that snake, but appears to be common to all the ribs of the whole tribe of snakes.

Mr. Home acknowledges himself indebted to the President, who first remarked an apparent motion of the ribs in succession, like the feet of a caterpillar, in a large coluber, brought for his inspection into his library. And Mr. Home, by placing his hand underneath the belly of the snake, distinctly felt the ends of the ribs press in succession on the palm of the hand as the animal passed over it.

By examining the skeleton of a large boa, formerly sent from India by Sir William Jones, and now deposited in the Hunterian collection, the structure of the ribs which adapts them for such motion was very evident, and is described by the author with figures, which show a

distinct attachment of a rib on both sides to each vertebra by a ball and socket-joint. It is remarked, that in this tribe of animals the relative positions of the ball and socket are reversed from their usual situation, the socket being attached to the extremity of the rib, and fitted to a protuberance from the body of the vertebra, instead of the extremity of the rib being applied to an indentation between two adjacent vertebræ. Hence the ribs do not in any degree interfere with the motion of the vertebræ upon each other, as in other animals.

The muscles by which these motions are performed, are also described by Mr. Home; but the distribution of them cannot readily be understood, without reference to the drawings which accompany the paper.

At the termination of each rib is a small cartilage, which rests for its whole length on the inner surface of the corresponding abdominal scutum, to which it is connected by a short muscle.

The scutum being thus moved by a rib from each side, its posterior edge lays hold of the ground, and becomes the support by which the adjacent portion of the body is propelled forwards, and by a series of alternate motions is capable of renewing the impulse with considerable rapidity.

Mr. Home remarks, that in the *Draco volans* the wings, by which the animal flies, are supported by ribs, which form the skeleton of them; but in this instance the elongated ribs are superadded, for the sole purpose of forming the wings, and do not, as in the snake, assist in the process of respiration, at the same time that they are employed in giving progressive motion.

*An Account of some Experiments on the Combinations of different Metals and Chlorine, &c.* By John Davy, Esq. Communicated by Sir Humphry Davy, Knt. LL.D. Sec. R.S. Read February 27, 1812. [*Phil. Trans.* 1812, p. 169.]

The principal objects of these experiments is to determine the proportions in which oxymuriatic acid or chlorine combines with various metals; but the author has also extended his inquiry to the relative proportions, in which oxygen also, and sulphur, unite with some of the same metallic substances.

Of copper, Mr. John Davy notices two compounds, to which he gives the names of Cuprane and Cupraneæ. The former is the same as the resin copper of Boyle, which may be obtained by heating together one part of copper with two parts of corrosive sublimate. This compound is also the same as that named by Proust, white muriate of copper, who obtained it by mixing together muriates of tin and copper; and Proust observed that the same compound might be procured, by heat, from the common deliquescent muriate of copper.

This compound is fusible by heat below redness, and in close vessels is not decomposed by a strong red heat; but if air be freely admitted, it is dissipated in white fumes. It is insoluble in water, but