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EXHIBITING A VIEW OF

THE PROGRESS OF DISCOVERY IN NATURAL PHILOSOPHY, CHEMISTRY, NATURAL HISTORY, COMPARATIVE ANATOMY, PRACTICAL MECHANICS, GEOGRAPHY, NAVIGATION, STATISTICS, AND THE FINE AND USEFUL ARTS,

APRIL 1. TO OCTOBER 1. 1825.

CONDUCTED BY

ROBERT JAMESON,

REGIUS PROFESSOR OF NATURAL HISTORY, LECTURER ON MINERALOGY, AND KEEPER OF THE MUSEUM IN THE UNIVERSITY OF EDINBURGH;

Fellow of the Royal, Antiquarian, and Wernerian Societies of Edinburgh; Honorary Member of the Royal Irish Academy, and of the Royal Dublin Society; Fellow of the Linnean and Geological Societies of London; of the Royal Geological Society of Cornwall, and of the Cambridge Philosophical Society; of the York, Bristol, Cambrian, and Cork Institutions; of the Royal Society of Sciences of Denmark; of the Royal Academy of Sciences of Berlin; of the Royal Academy of Naples; of the Imperial Natural History Society of Moscow; of the Imperial Pharmaceutical Society of Petersburgh; the Natural History Society of Wetterau; of the Mineralogical Society of Jena; of the Royal Mineralogical Society of Dresden; of the Natural History Society of Paris; of the Philomathic Society of Paris; of the Natural History Society of Calvados; of the Senkenberg Society of Natural History; Honorary Member of the Literary and Philosophical Society of New York; of the New York Historical Society; of the American Antiquarian Society; of the Academy of Natural Sciences of Philadelphia; of the Lyceum of Natural History of New York, *&c.*

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dom, or the simple mineral, is the sole object of Mineralogy; so also, the natural-historical properties of the simple mineral are the only ones to which, in that science, we ought to direct our attention. It is a general condition imposed upon all sciences, that each should contain matter of the same kind only. Every information, therefore, that Mineralogy affords, must *flow from the observation and comparison of the natural-historical properties of simple minerals;* as in mathematics every department of information must arise from the observation and comparison of quantities of the same kind. From a similarity of origin in the information, we also infer it to be similar in kind, and in this consists the character of belonging to one and the same science. The purity of the science also is dependent upon the nature of its constituent objects, as will appear from the care bestowed upon the establishment of their general ideas by mathematicians, which will, of itself, be sufficient to shew their high degree of importance.

(To be continued.)

ART. II.—*Contributions to the British Fauna.* By GEORGE JOHNSTON, M. D. Fellow of the Royal College of Surgeons, Edinburgh.

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1. *CIRRATULUS.*

CL. ANNELIDES.—Ord. APODES.

CHAR. Body elongated, round, flattened on the ventral surface; garnished, particularly on the anterior end, with numerous long capillary filaments; each ring on each side with two setiferous papillæ or feet.

OBS. It will be remarked, that the characters assigned to this genus by Lamarck have not been rigorously adopted. Had that been done, the species about to be described would have had a doubtful claim to a place in it; and, rather than constitute a new genus, I have not hesitated to give a greater latitude to the generic character,—the more particularly since Lamarck himself has recognised the relation which the *Terebella tentaculata* of Montagu (an animal evidently of structure similar to ours) bears to his *Cirratulus.* The following additional characters are common to the two species we have observed, and which do not seem to have been heretofore described by any British naturalist. The body tapers a little towards each extremity, and is ca-

pable of extension. The mouth is naked, nearly terminal, placed under the first segment, which may properly be considered as the head of the animal, and which is marked on each side with a curved black line; but no eyes are perceptible. The two next rings bear neither filaments nor papillæ. From the anterior margin of the fourth, which becomes suddenly larger, arises on each side a bundle of filaments, generally more tortuous, and of a paler colour than the others, which arise from the sides of the following rings, down about one-fifth of the length of the animal, and a few remote filaments are dispersed irregularly on the rest of the body. The filaments take their rise from near the back, some from the back itself, are about twenty in number on each side, worm-like, tortuous or extended, unequal in length, the shortest being placed anteriorly, but the gradation is not regular. They consist of a large central vessel carrying red blood, surrounded by a white gelatinous transparent membrane, and are consequently of a fine red colour; but this is liable to variation; for some, particularly the anterior fasciculi, are often quite white, and others, again, are occasionally spotted as from a partial stagnation of the blood in them. There are also two rows of papulous feet on each side, armed with a few short unequal bristles, and at least, in a great measure, retractile. The ventral surface is flattened, marked in the middle, from the deeper colour apparently of a large vessel or intestine which runs from one extremity to the other. Anus terminal.

1. *C. fuscescens.* Body of a dark-brown colour.

Hab. Sea-shore. Under stones in muddy places, common in the neighbourhood of Berwick.

Des. Body, when extended, three inches long, thicker than a crow-quill, of a dirty brown colour on the back, stained from the internal viscera; ventral surface of a yellowish-brown.

2. *C. flavescens.* Body of a yellowish colour, much stained from the internal viscera.

Hab. Sea-shore. In muddy places with the preceding, and equally common, Berwick.

Des. This is of the same size as the preceding, from which it appears to be sufficiently distinct. It is of a yellow colour, much stained on the back from the dark internal viscera. One or two of the specimens we examined were mottled on the back with circular closely-set spots, so small as to require a magnifier to see them; but this character does not appear to be uniform. The ventral surface is much of the same colour, but not marked, unless in the middle with a mesian line.

2. *LEACIA.*

Cl. CRUSTACEA.—Ord. Malacostraca.

Leg. Edriophthalmia.

Char. Antennæ four; the superior very short; the inferior nearly as long as the body. Body linear, of nine segments;

the four first and the four last short, transverse, and bearing appendages; the mid one naked, half the length of the body. Legs of two kinds, those attached to the anterior segments formed for swimming, and those to the posterior for creeping. Caudal segment mucronate, with two lamellæ beneath inclosing divided stiles.

Obs. This is a new genus, instituted for the reception of an animal, which cannot, I think, be referred with propriety to any genus in the arrangement even of Dr Leach. It is so peculiar in its characters, that there is some difficulty in assigning it a place in the system; but, upon the whole, it associates, perhaps, best with the *Asellides* of Lamarck. It agrees with them in the structure and position of its antennæ and eyes, and of the caudal segment, but in nothing else; and even in the above characters not very accurately. But I am too little acquainted with the Crustacea to be able to trace its relations.

If we are to consider, as I presume we are, those parts only as feet which are attached to the *body* (the first segment on the head, and the last on the tail being excluded), then the *Leacia* will have only twelve, three pairs formed for swimming, and three for creeping, placed at opposite extremities, and separated by a wide and naked interval. On the under and posterior part of the first segment there are, however, two pairs of organs, which resemble the swimming feet in every thing, except in being shorter and thicker. These may be considered as auxiliary maxillæ, and they seem well adapted to fulfil the purposes of such; but that they have the proper form and location of these organs, as determined by Savigny, I will not take upon me to affirm. Another singularity of the *Leacia* is the middle segment, resembling in form the large shield of the lobster tribe, but peculiar in having affixed to it neither feet nor other appendage.

This genus I have named in honour of Dr Leach, a naturalist who has contributed much to the progress of Zoology, and more particularly to our knowledge of that class of animals to which the *Leacia* belongs.

1. *Leacia lacertosa.*

Des. Body linear, subcylindrical, one inch and a half from the tip of the antennæ to the opposite extremity, of a dirty white colour, spotted with brown. Antennæ four; superior approximate at the base, on a subglobular peduncle, four-jointed, with a few minute hairs at the apex; inferior, nearly as long as the body, crustaceous, tapering, with seven joints, of which the first is very short, the next twice as long, the third and fourth still longer and nearly equal, the three terminal short, with minute spinous hairs on the internal margin. Head larger than the following segment, with dilated sides, and two small tubercles between the eyes; below carrying two pairs of auxiliary maxillæ? similar in structure, but shorter than the swimming legs. Eyes two, sessile, distant, black, reticulated. Three first segments short, transverse, with a dilated process on each side that overhangs the tubercles, from which the swimming feet arise. Swimming feet equal, three pairs, five-jointed, joints elongate, and ciliated on their internal margin with long white hairs. The next segment (the fifth, if the head be included) is very large, equal in

length to one half of the body, rounded and slightly tuberculated on the dorsum, and with a tuberculated ridge on each side, separated by a smooth line; ventral aspect smooth and membranous. The three segments which follow are short, equal, transverse, bearing each a pair of legs formed for creeping. These arise within a cup-shaped tubercle, are equal in length, of six joints, and armed with a claw. The joints are emarginate on the superior aspect of their tarsal ends, to allow of freer motion,—the femoral is long, the three tibial are short, and nearly equal,—the first tarsal is twice as long as the second, which bears the claw. Caudal segment equal in length to the three preceding, composed of two inarticulate pieces, angulated, with a few small tubercles, and terminated by a strong triangular spinous process. On the ventral aspect are two linear oblong moveable plates, pointed behind, joining accurately, and enclosing three pairs of white processes. These consist of a stalk, which supports on its end two equal flattened joints, moveable, beautifully ciliated on their sides, and rounded apices, with long bristles, which are themselves minutely ciliated in a pectinate manner. Inhabits the sea.

3. *FUSUS*, Lamarck.

Cl. MOLLUSCA.—Ord. Trachelipodes.

1. *F. barvicensis.* Shell ventricose, white, with longitudinal furbelowed ribs, continued obliquely across a flattened space at the sutures; beak rather long, slightly ascending.

Hab. Sea-coast, near Berwick.

Des. Shell white, half an inch long, and one-half as broad, with six whorls, divided by a flattened space, and longitudinally ribbed. There are thirteen ribs on the body-whorl, finely furbelowed, projecting a little at the suture, terminating on the beak, which is produced, and smooth towards its extremity. The indented appearance of the ribs is produced by obsolete transverse striæ crossing them. The ribs do not terminate at the sutures, but are continued across by elevated striæ. Aperture round, inclining to oval, with smooth lips.

Obs. The shells of Great Britain have been examined with so much care, that I give this species with some hesitation; but at present, after an attentive examination of its characters with those already described, I believe it to be new. In shape it resembles the *Murex bamfius*, but in other characters it approaches nearly the *M. gracilis*, from which, however, it differs in being broader in proportion to its length, in having fewer whorls, in having no coloured band, and in its ribs being indented and continuous; whereas in the *M. gracilis*, they "are separated by a flat space at the upper extremity of each whorl, and the transverse striæ are there continued uninterruptedly *in a spiral direction* up the shell."—Dillwyn's *Descriptive Catalogue*, p. 742. In our shell there is no appearance of spiral striæ; and the elevated striæ, which cross the flattened space, are to be considered as the continuation of the ribs.

4. *TUBULARIA.*

CL. POLYPI.—Ord. P. VAGINATI.

1. *Tub. tubifera.* Stem unbranched, projecting from its sides trumpet-like cells. Pl. III. Figs. 2. and 3.

HAB. Sea-coast near Berwick. On a small species of the genus *Maia*, Lamarck.

DESC. Stem scarcely half an inch in height, round, horny, tubular, indistinctly jointed, unbranched. The cells arise from all sides of the stem in an irregular manner, and appear to the naked eye like little branches. They are narrow at their origin, long, tubular, with round, even, patulous apertures.

OBS. Of the seven species described by Lamouroux, there appears to be no one which can be confounded with this.

5. *DISCOPORA*, Lamarck.

1. *D. trispinosa.* A suborbicular expansion, with cells radiating from the centre; cells closed by a membrane, and armed on the lower margin of the aperture with three long spines.

HAB. On the *Lithodes spinosa*. Coast near Berwick.

DES. A thin, calcareous, suborbicular layer, three quarters of an inch in diameter, affixed by its whole basis, but when dry easily removable, of a white silvery colour, with minute yellow dots. Cells in rows radiating from the centre, small, horizontal, with a raised round aperture, which is closed by a brown membrane, whence the dotted surface it presents to the naked eye. The cells are divided on the upper side, and on the lower armed with three long stout conical spines.

OBS. This, in the arrangement of Lamouroux, is either a *Flustra* or a *Cellepora*, but in neither of these genera do I find any species liable to be mistaken for it.

ART. III.—*On the Sodalite of Vesuvius.* By W. HAIDINGER, Esq. F.R.S.E. & M.W.S.

THE interesting and novel varieties of the Sodalite of Vesuvius, which I am now to describe, are preserved in the Royal Museum of the University of Edinburgh. They were pointed out to my attention by Professor Jameson, who had arranged them with Haüyne, which substance appears to belong to the same species.

The crystals are distributed in drusy cavities of limestone, and associated with grey felspar, pale-green mica, calcareous