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INCLUDING

ZOOLOGY, BOTANY, AND GEOLOGY.

(BEING A CONTINUATION OF THE 'ANNALS' COMBINED WITH LOUDON AND CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY.')

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have been evolved from it. The Sponges, it is on all sides admitted, are the simpler of the two. If simpler than the Sponges, its nature must have been Protozoic; and, knowing what we do of the highest representatives of the Protozoa, we may suggest the following:—

1. The simplest Sponges have no skeleton.
 2. Sponges with skeletons are highly developed forms.
 3. All cup- or sac-shaped Sponges have skeletons.
 4. Prototype Sponges probably had no skeleton.
- ∴ Prototype Sponges, including *Protascus*, were not cup-shaped.

The word *Protozoa* may be substituted instead of Sponges in the foregoing lines. The reasoning is, as a matter of course, partly hypothetical, and is not laid down dogmatically; yet it is theoretical evidence in addition to the far graver one of facts opposed to the probability of Professor Hæckel's hypothesis.

Mr. Lankester has evidently not made himself familiar with the Palæozoic Zoantharia, or he would scarcely have contradicted so emphatically my suggestion that in that remote epoch the Corals had already reached the zenith of their development. Should he feel inclined to further cultivate their acquaintance, he may encounter forms far more complex than those peopling the existing seas.

One sentence in Mr. Lankester's criticism of my paper is somewhat obscure, viz.: "We must also remember that the *currents* directed by cilia in the Sponges and the *contractile organs* round the mouth of Actinozoa are special developments gradually attained by these two diverging stocks which their common parent possessed but in general outline." The "homology," "homogeny," or "homoplasy" existing between an organ and a result is difficult of comprehension.

XXV.—On two Species of Land-Planariæ from Borneo.

By the Rev. W. HOUGHTON, M.A., F.L.S.

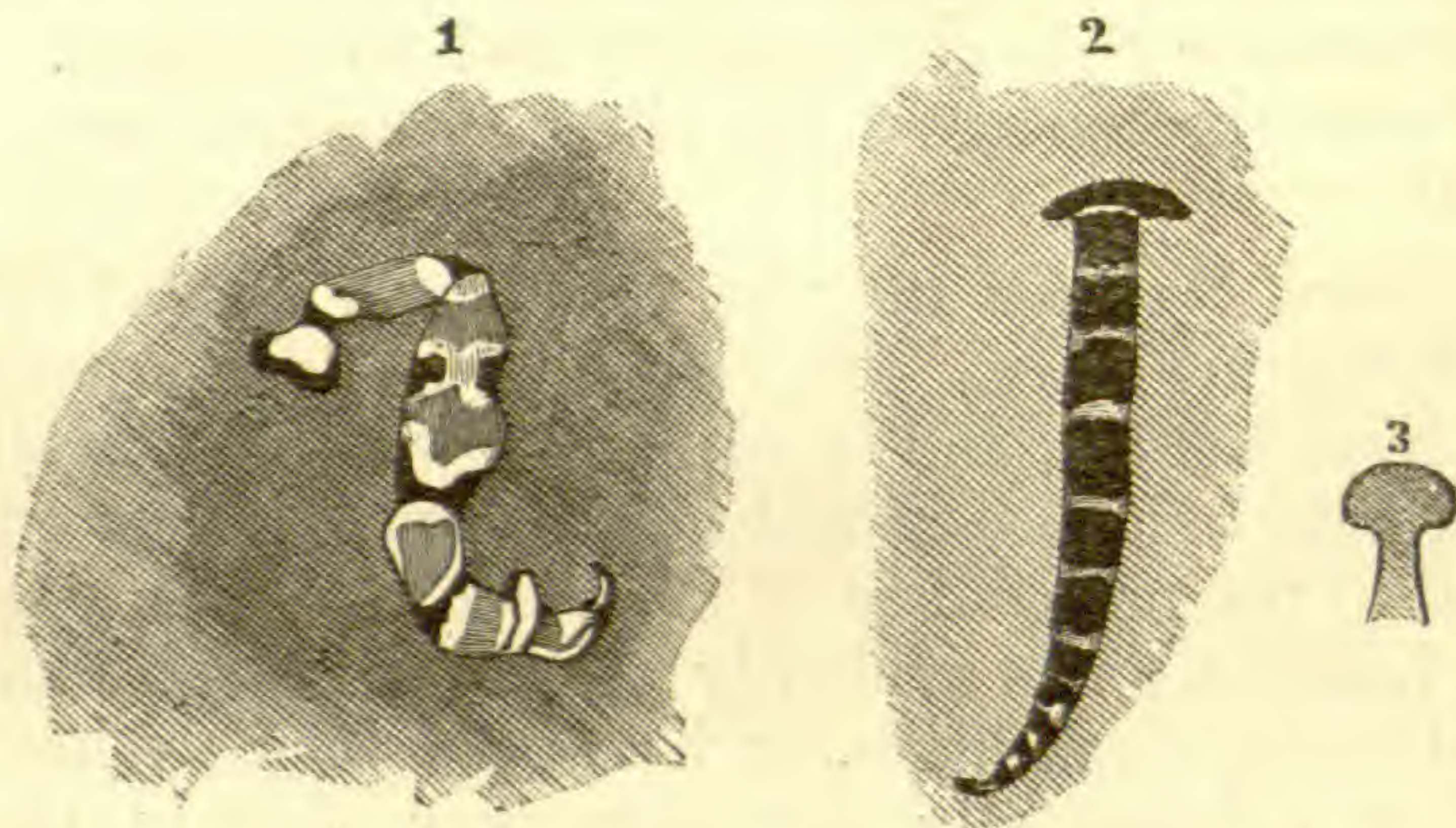
To the Editors of the *Annals and Magazine of Natural History*.

GENTLEMEN,

I have received the enclosed sketches of two species of Land-Planariæ from Mr. Alfred Everett, Sarawak, Borneo, concerning which I shall be glad to receive what information any of your correspondents can give. Mr. Everett does not tell us any thing of the internal anatomy of these worms; but of their external form he thus writes:—

"No. 1 is taken from a living specimen, and is pretty accurate; it was found on a leaf below Tambursan Cliff. The

body is extremely mobile, exuding a plentiful and very tenacious mucus; the stripes do not quite meet below, where the orange tint is lighter. Body capable of much elongation; the black transverse stripes are encircled by a halo of light yellow. Length, when extended, $2\frac{2}{3}$ inch. No. 2 is merely a sketch from memory; but having since seen another individual of the same species, I am able to correct it. The frontlet when



at rest is semilunar, as in No. 3, and the lateral extensions I have given it are exaggerated. The white stripes should not be so regular—white being rather the ground-colour, and dark blackish brown banding and marbling it rather irregularly. Both kinds are of much the same size; and there is nothing in their externals to prohibit their being included as members of one and the same genus. No. 1 was discovered by my brother, Mr. Harold Everett, the other by myself.”

Mr. Everett adds that he has been unable to detect any Planarian worms in the fresh waters of the part of Borneo where he resides, but that the hot and humid jungle seems to be favourable to the existence of terrestrial species.

I believe that little attention has hitherto been given to the study of these Turbellarian worms; and it is much to be hoped that Mr. Everett will extend his observations and give us further particulars relating to the species he may meet with in Borneo. Years ago Mr. Darwin described several species of foreign Land-Planariæ in your pages (see Ann. Nat. Hist. 1844, vol. xiv. p. 241). Various genera have been found in America, Ceylon, Australia, &c. One species of Land-Planaria (*P. terrestris*) has been observed in this country, first by Mr. Jenyns in plantations at Bottisham Hall (see ‘Observations in Nat. Hist.’ p. 315)—who, correctly identifying his species with the *Fasciola terrestris* of O. F. Müller (Verm. Terrest. et Fluviat. p. 68), called it “the ground-fluke,”—secondly by Sir John Lubbock, Bart., in the plantation of High Elms (Journ. Linn. Soc.

vol. x. No. 43); and, thirdly, by myself in damp earth of a field opposite my house, and also under decaying fungi in the woods of Ercall Heath, Shropshire. Mecznirow (Bull. de l'Acad. Imp. d. Sciences de St. Pétersbourg, sér. 5. vol. v.) has described a form of Land-Planaria which he discovered in the Botanical Gardens at Giessen a few years ago, under the name of *Geodesmus bilineatus*. This, I am certain, is quite distinct from the *Planaria terrestris* of Dugès (Annales des Scien. Nat. vol. xx.), since found in England by at least three individuals. I still adhere to my opinion that the English species, which is identical with the *Fasciola terrestris* of Müller and the *Planaria terrestris* of Dugès, is a true *Planaria*, differing from that genus in no essential anatomical particulars. Prof. Grube has a memoir "Ueber Landplanarien" (in Jahresbericht der Schles. Gesellsch. f. vaterl. Cultur, 1866, pp. 61-64), but I have had no access to it. Would you kindly give in your pages an abstract of that memoir?

I remain, Gentlemen,
Yours faithfully,

W. HOUGHTON, M.A., F.L.S.

Preston Rectory, Wellington, Salop.
August 12, 1870.

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

April 28, 1870.—Dr. William Allen Miller, Treasurer and Vice-President, in the Chair.

"On an Aplanatic Searcher, and its effects in improving High-power Definition in the Microscope." By G. W. ROYSTON-PIGOTT, M.A., M.D. Cantab., M.R.C.P., F.R.A.S., F.C.P.S., formerly Fellow of St. Peter's College, Cambridge.

The Aplanatic Searcher is intended to improve the penetration, amplify magnifying-power, intensify definition, and raise the objective somewhat further from its dangerous proximity to the delicate covering-glass indispensable to the observation of objects under very high powers.

The inquiry into the practicability of improving the performance of microscopic object-glasses of the very finest known quality was suggested by an accidental resolution in 1862 of the Podura markings into black beads. This led to a search for the cause of defective definition, if any existed. A variety of first-class objectives, from the $\frac{1}{16}$ to the $\frac{1}{4}$, failed to show the beading, although most carefully constructed by Messrs. Powell and Lealand.

Experiments having been instituted on the nature of the errors, it was found that the instrument required a better distribution of