

II. Wissenschaftliche Mittheilungen.

1. *Astrophiura permira*, an Echinoderm intermediate between Ophiuroidea & Asteroidea.

By W. Percy Sladen (of Halifax, England).

A notice appeared in the »Zoologischer Anzeiger« for Nov. 25., (No. 13), of an abstract of a paper »On *Astrophiura permira*, an Echinoderm-form intermediate between Ophiuroidea and Asteroidea«, (Proc. Roy. Soc. No. 188). Several queries having subsequently been addressed to the author by continental Naturalists, a short summary of the characters of the organism in question may not be unacceptable, pending the publication of the details in full.

The test, which is pentagonal in form and depressed, is covered with plates which, on the central half of the abactinal surface, are arranged after the manner of an ophiuroid disk, whilst these of the outer portion of the pentagon represent very highly developed modifications of brachial plates. In other words there occurs in this Echinoderm a combination of the disk- and arm-structure of an ophiuran consolidated within an asteroid form of body.

Extending from the angles of the disk, and in continuation of the radial series, is a very short and aborted rudimentary ray of ophiuroid type; but which, both in size and character, is quite insignificant in proportion to the dimensions of the disk. The margin of the test is surrounded with a close-set fringe of small compressed spinelets.

On the actinal side, the mouth is central and surrounded by ten large mouth-plates which bear papillae only; teeth, jaw-plates and jaws wanting; one mouth-shield present. The entire armature being more asteroid than ophiuroid in general facies.

The ambulacral system is quite asteroid in character; the tentacles being retractile (in all probability perfectly), and the divisional plates which separate them are not only homologous with, but resemble in the manner of their disposition, the ambulacral plates of Asteroidea. Although a series of large quadrate plates which proceed along the median line of the rays give at first sight a superficial resemblance to the under arm-plates of Ophiurans, these in reality correspond with the median plates which are present in the early stages of growth of an Asteroid and are afterwards resorbed in the process of the development of the mature form. A transverse section through a radius likewise confirms this blending of the characters of the two groups, for the abnormal arm-skeleton, which is present, is of a type modified to accord with the asteroid characters above noted. In fact, the whole series of radial plates, when studied from the actinostome to the extremity of

the ray, furnish a highly suggestive representation of their phylogenetic development. The tentacular pore-system is limited to the disk only; that portion of the brachial series which is prolonged beyond the body-disk being (both internally and externally) in an extremely rudimentary and aborted condition, whilst the extension of the peritoneal cavity to the extremity of the functional portion of the rays, i. e. to the margin of the pentagonal body, is an additional characteristic of asteroid structure.

From the above summary it will be seen that the Echinoderm under notice differs very widely from all known groups of genera, and in such a marked degree as to warrant its being regarded as the type of a new and intermediate family, whilst at the same time it affords a more decided and intelligible link between the two orders, (at any rate from the ophiuran side), than any form with which we have hitherto been acquainted.

Fam. *Astrophuriidae* mihi.

Brachia cum disco ophiurano in corpore pentagonali inclusa. Dentes absunt. Oris armatura simplex et imperfecta. Pori pedum ambulacralium septis angustis ad perpendicularum radii directis disjuncti. Cava interbrachialia perlata.

Astrophura permira, gen. et sp. nov.

Corpus pentagonale, depressum, supra convexum, infra paulo concavum; obtectum squamis, concinnis et planis, in dimidio interiore more disci ophiurani dispositis, dimidio exteriori scutellorum lateraliū brachiorum simulantibus maxime prolatis. Brachia incipientia ab angulis disci producta, series radiales continuantia.

In superficie actinali os medium, decem magnis ossiculis oralibus cinctum, prostantibus scutellis adoralibus. Unum scutum buccale adest; dentes, scutella oralia et tori angulares absunt. Papillae orales ternae aut quaternae, cum unà magnà, ad angulos oris apposità.

Series scutorum quadratorum a rimis oris per radios procedunt, scutellis ventralibus prostantibus, et per brachia inchoata producuntur.

Foramina pedum ambulacralium septis angustis disjuncta; permagna, protecta singulà longà papillà ambulacrali ad margines interbrachiales, lanceolatà et squamaeformi, alterà minore ad partem interiorē radii juxta scutella brachiorum ventralia posità. Areae interbrachiales squamis parvis hexagonalibus obtectae, marginem appropinquantes decrescunt, relinquentes limbum angustum expositum; disci margine cincta densis spinis, brevibus et compressis.

Hab. in mari ad oras insulae Madagascar.

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Autor(en)/Author(s): Sladen W. Percy

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