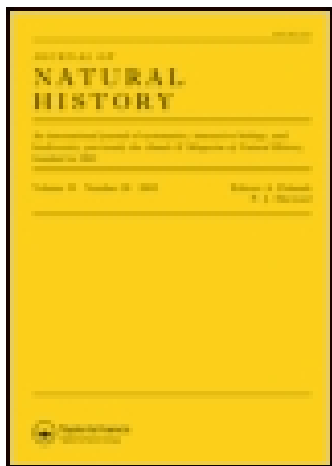


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XXIV.—New genera of starfishes

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XXIV.—*New Genera of Starfishes.*

By WALTER K. FISHER, Stanford University, California.

THE following genera will be described in detail and figured in an extensive report on the Asteroidea of the North Pacific, now in preparation.

THRISACANTHIAS, gen. nov.

Astropectinidæ near *Persephonaster*, Alcock, but differing in the arrangement of gonads, which are not confined to the interradial, but extend for a short distance on either side along ray as a number of distinct tufts depending from the genital stolon; adambulacral plates with 1 or 2 enlarged actinal spines; disk of medium size, depressed, rays long; abactinal surface with true paxillæ arranged in regular oblique transverse rows; no enlarged radial series; papulæ all over abactinal surface, except at tip of ray; actinal intermediate plates extending far along ray; interradial areas rather small; spiniform fascicular pedicellariæ on marginals; anus present; madreporic body large, not hidden.

Type, *Persephonaster penicillatus*, Fisher, Bull. Bureau of Fisheries, 1904, xxiv. 1905, p. 297. Off Los Coronados Islands, Lower California, 530 fathoms.

GEPHYREASTER, gen. nov.

Mimasterinæ related to *Mimaster*, Sladen, but differing in having stout tabulate paxillæ with strongly stellate bases by which the plates overlap; in the character of actinal intermediate plates, which, instead of bearing small tufts of spines forming spaced paxillæ, are densely covered with spinelets; in the armature of the mouth-plates, which have a peculiar angular marginal series situated between peristome and superficies of plate on inner end; superambulacral plates present. Marginal plates, adambulacral plates, and armature similar to those of *Mimaster*, the first without enlarged spinules.

Type, *Mimaster swifti*, Fisher, Bull. Bureau of Fisheries, 1904, xxiv. 1905, p. 301. Stephens Passage, Alaska, 188–131 fathoms.

This genus is intermediate in many respects between *Mimaster* and *Pseudarchaster*, but is nearer to the former.

SPHÆRIODISCUS, gen. nov.

Goniasterinæ differing from *Pentagonaster*, Gray (type, *P. pulchellus*), in having the abactinal and actinal plates

wholly granulated; in having not the last but the penultimate or antepenultimate marginals enlarged; in having marginals with spaced granules. The abactinal plates are flat-topped and slightly tabulate on radial areas; the actinals are flat, never convex.

Type, *Stephanaster bourgeti*, Perrier, Expéd. Scientif. du Travailleur et du Talisman, 1894, p. 403, pl. 26. fig. 1.

Pentagonaster as here used includes a small group of southern species of which *P. pulchellus* is the type. *Stephanaster*, Ayres, type *S. elegans*, Ayres (= *P. pulchellus*), is strictly a synonym of *Pentagonaster* in its narrowest sense. *Sphæriodiscus* includes also *Pentagonaster ammophilus*, Fisher, Hawaiian Islands.

Pentagonaster differs from *Goniaster* (type *Asterias tessellata*, Lamarck = *Goniaster cuspidatus*, Gray) in lacking abactinal tubercles; in having the last marginal plate of both series enlarged; in lacking abactinal secondary ossicles, and numerous papular pores separated by intermediate granules between the dorsal plates of papular areas; in having abactinal and actinal intermediate plates free from granules except for a marginal series of granules.

Pentagonaster is distinguished from *Tosia*, Gray (type *T. australis*, Gray), by the enlarged distal marginal of both series (if a marginal is enlarged in *Tosia* it is the last superomarginal only); in the character of the pedicellariæ, which have narrow spatulate jaws (as in *Goniaster*); in *Tosia* they are low, bivalved, and wider than high, or are absent altogether.

Tosia, as here limited, includes a few southern species—not *granularis*. *Ceramaster*, Verrill (type *C. granularis*), and *Plinthaster*, Verrill (type *P. perrieri*), I regard as quite distinct genera. *Pyrenaster*, Verrill (type *P. dentatus*, Perrier, 1884), according to the testimony of the type specimen, which I have examined, is synonymous with *Plinthaster*. If there is to be any uniting of genera it should be *Goniaster*, *Pentagonaster*, and *Tosia*, decidedly not *Tosia* with *Ceramaster* or with *Plinthaster*.

HETEROZONIAS, gen. nov.

Solasteridæ with a wide-meshed abactinal skeleton, and small pseudopaxillæ like *Solaster*, but differing from that genus in having a complete series of actinal intermediate plates to tip of ray and in the arrangement of marginal paxillæ, which consist of transversely oriented prominent inferomarginals alternating with longitudinally oriented less

prominent superomarginals, all in a single linear series. Adambulacral armature as in *Solaster*. Papulæ numerous and prominent.

Type, *Crossaster alternatus*, Fisher, Proc. Washington Acad. Sciences, viii. 1906, p. 131. Santa Barbara Islands, Cal., 414 fathoms.

XXV.—*On a Collection of Mammals made by Mr. S. A. Neave, during his Expedition in Northern Rhodesia.* By GUY DOLLMAN.

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THE area in which Mr. Neave collected is situated between Lake Bangweolo and Lake Mweru, bounded on the west by the Luapula River, and on the east by the Mchinga Escarpment, extending as far north as the southern end of Lake Tanganyika and as far south as Mpika. No collection of mammals of any importance has ever been received from this district before, and therefore it is not surprising to find that some of the specimens represent new and hitherto undescribed forms. The mammalian fauna of this area would appear to be very similar to that of North Nyasaland, and though a few of the species show a distinct relationship with the West African fauna, the majority of forms are East African. The mammals of the Kalungwisi and Chambezi Rivers appear very much the same as those that occur on the Nyika Plateau, mixed with a sprinkling of South Nyasa forms, such as the small Zomba dormouse, *Graphiurus johnstoni*, Thos., a specimen of which Mr. Neave obtained from the Chambezi River District. Some of the species would appear to indicate a relationship with the Tanganyika and Uganda faunæ. Thus we find in the collection both the Marungu dormouse *Graphiurus microtis*, Noack, and the East African *Mus jacksoni*, de Wint.

Of the novelties, the Shrews are perhaps the most interesting. One of the forms, *Crocidura luna*, was obtained by Mr. Neave during his earlier expedition in Katanga. Since my paper on the Katanga mammals*, the series of Central and East African *Crocidura* in the British Museum collection has been considerably increased, and it is now evident that these Katanga specimens ought to be considered as

* Ann. & Mag. Nat. Hist. (8) iii. p. 350 (1909).