

SHORTER ARTICLES AND CORRESPONDENCE

THE GENUS PTILOCRINUS¹

Mr. F. A. Bather has just made known a second species of the interesting genus which I described a year ago² under the name of *Ptilocrinus*; his material was obtained in 70° 23' S. lat., 82° 47' W. long., at a depth of about 480 meters; the color of the animal in life is recorded as "flavus brilliant."

The type species of *Ptilocrinus*, *P. pinnatus*, came from the Queen Charlotte Islands, off British Columbia, and was dredged at a depth of 1,588 fathoms, about six times the depth at which *P. antarcticus* was found.

Although at first sight, perhaps, it is somewhat surprising that the two known species should be found so far apart geographically and bathymetrically, if we look closely into the matter we find that it is quite what we should expect. Geographically and bathymetrically the recent crinoids are divisible into three well-marked faunæ: (1) the Indo-Pacific-Japanese, characterized by the families Zygometridæ and Himerometridæ, the genera *Comatula*, *Phanogenia*, and most of the species of *Comaster* in the Comasteridæ, the genera *Ptilometra*, *Asterometra*, *Calometra* and one of the two species of *Tropiometra* of the Tropiometridæ,³ and the genera *Perometra*, *Nanometra*, *Compsometra*, *Thysanometra* and *Iridometra* of the Antedonidæ; among the stalked crinoids *Metacrinus*, *Carpenterocrinus*, *Hypalocrinus* and *Phrynoocrinus* are only known from this region; (2) the Polar-Pacific, including the Arctic and Antarctic circumpolar areas, and the entire American coast of the Pacific from Bering Straits to the Straits of Magellan, the coasts of eastern Asia to southern Japan (where it meets the preceding at Tokyo Bay), including the Sea of Okhotsk and the Sea of Japan, and the Atlantic coasts south to near the Hebrides and the Faroë channel, and to the

¹ *Ptilocrinus antarcticus* n. sp., a crinoid dredged by the Belgian Antarctic Expedition. *Bull. de l'Acad. roy. de Belgique* (classe des sciences), No. 3, mars, 1908, pp. 296-299, fig. p. 299.

² *Proc. U. S. Nat. Mus.*, XXXII, p. 551, fig. 1, p. 552.

³ The second species, *T. carinata*, appears to have recently extended its range into the Atlantic.

Gulf of Maine, characterized by various genera belonging exclusively to the Antedonidæ, Heliometra occurring everywhere, Hathrometra confined to the north, and Isometra to the south, while Thaumatometra occurs in the south, but extends northward in the Pacific to the Aleutian Islands; among the stalked crinoids the *Bathycrinus carpenterii* type (*B. carpenterii*, *B. complanatus* and *B. australis*) appear possibly to be peculiar to the region; bathymetrically, the characteristic forms (except *Bathycrinus*) are inhabitants of comparatively shallow water in both polar areas, but dip downward to a considerable depth when passing under the tropics; and (3) the Oceanic, which occurs everywhere in moderate to very deep water with the Indo-Pacific-Japanese, and extends thence over the entire ocean area, *except* that it does not intrude into the area occupied by the Polar-Pacific; the characteristic forms are the species of *Thalassometra* having rounded and spiny rays and arm-bases (such as *T. bispinosa*, *T. villosa*, *T. gigantea*, *T. pubescens*, *T. multispina* and *T. aster*) and certain other species, such as *T. flava*, *T. porrecta* and *T. magnicirra*, *Stylometra*, *Bathymetra* and *Charitometra*, except the *aculeata*, *hepburniana*, *basicurva* and *tuberosa* groups; of stalked crinoids, *Rhizocrinus*, *Endoxocrinus*, and the species of *Bathycrinus*, except the *B. carpenterii* group, belong here; the West Indian fauna falls almost wholly in the last division, but there is a trace of Indo-Pacific-Japanese influence, as, however, we might expect, since the entire Oceanic fauna is a direct, though considerably modified, derivation from it, even the well-known subgenera of *Pentacrinidæ*, *Encrinus*⁴ and *Isocrinus* being only a comparatively slight advance over the apparently more primitive *Metacrinus* type. The Mediterranean—northeast Atlantic fauna, characterized by *Antedon* (*A. mediterranea*, *A. bifida* and *A. petasus*) and *Leptometra*, appears to be a localized offshoot from the Polar-Pacific.

Bearing these facts of distribution in mind, we are not surprised to find *Ptilocrinus* where Mr. Bather found it, for it appears to be a genus of the Polar-Pacific area, and the same *may* be true of *Calamocrinus*. Although *Heliometra* occurs throughout this area, the two arctic species, *glacialis* (= *eschrichtii*) and *quadrata* (with their representatives in the Sea of Okhotsk, *maxima* and *brachymera*) differ from the Antarctic and east Pacific species in the smoothness of their arms, and in

⁴ The subgenus *Cenocrinus* of Wyville Thomson.

a different distribution of the brachial syzygia; we find, therefore, that the entire Pacific portion of the Polar-Pacific area, from Bering Straits to the Antarctic Ocean, is really an extension of the latter division of the Polar-Pacific area northward; so that, had we reasoned backwards from the facts at hand before the appearance of Mr. Bather's paper, we might very well have prophesied the discovery of a *Ptilocrinus* in the Antarctic regions.

Mr. Bather remarks that I did not publish a generic diagnosis when I established *Ptilocrinus*; I did not, for the reason that in a monotypic genus, we are quite unable to say which are generic and which specific characters, and to tell in what way a new species will differ from the type; it is all right to indicate the differences provisionally between a new monotypic genus and older genera, but drawing up a diagnosis of a new monotypic genus implies rather more of a proprietorship over the animal kingdom than I am willing to assume.

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A NEW RHINOCEROS FROM THE LOWER MIOCENE OF NEBRASKA¹

Among several animals found by the writer at Agate, Sioux Co., Nebraska, in the spring of 1905, was a new form of hornless rhinoceros.

The type (No. HC105, collection of the writer) consists of a complete skull, the posterior portion of the left jaw, the atlas and the axis. This description has been delayed, hoping additional material might be secured.

The specimen was found in an exposure of the Dæmonelix Beds, about four miles west of the well-known Agate Spring Fossil Quarry, on the ranch of James H. Cook. The bone horizon in this quarry is practically, if not identically, the same as that in the Agate Spring Quarry. Strictly speaking, the Dæmonelix Beds are an integral part of the Lower Harrison Beds, forming the upper portion of them.

Associated with this specimen were the remains of *Syndyo-*

¹Extract from a paper read before the American Society of Vertebrate Paleontologists, December 29, 1907, at New Haven, Conn.