

Reports

Neoglyphea inopinata: A Crustacean "Living Fossil" from the Philippines

Abstract. *The discovery of an existing member of the Glypheidae, a family believed to have been extinct since the Eocene, may yield significant information on the evolution and classification of the decapod Crustacea. The single known specimen displays characters not apparent in fossil material, some of them perhaps representative of an ancestral decapod lineage, others reminiscent of the Astacidea and Thalassinidea.*

A crustacean 11.5 cm long that remained unidentified in the collections of the Smithsonian Institution for more than half a century has finally been recognized as a member of the Glypheidae, a family with an extensive fossil record but one that was presumed to lack living representatives. The glypheids first appeared in the Lower Triassic, flourished during the Jurassic, became less abundant in the Cretaceous, and apparently disappeared before the end of the Eocene. They form part of an evolutionary line, the Glypheoidea, that is thought by some carcinologists to represent the an-

cestral stock from which a majority of the Recent families of decapod Crustacea have evolved (1).

The most obvious similarity between this specimen and the fossil glypheids lies in the form of the carapace (Fig. 1), and there are additional structural details, such as the double curvature of the rostrum, the strong ocular peduncles, and the spinous antennular peduncles and antennal scales, that are shared with some of the fossil species. We are convinced that the specimen represents a true glypheid, similar to but distinct from any of the four fossil glypheid genera gen-

erally recognized today. The specimen has therefore been assigned to a new genus and species, *Neoglyphea inopinata* Forest and Saint Laurent (2). Preliminary study has revealed several features not detectable or readily interpretable in the fossil glypheids. Among them are the presence of an anterior cephalic prolongation possibly indicating an antennular or oculoantennular somite, an unusually extensive epistome, and limited telescoping of the anterior thoracic somites. The form of the mouthparts, the absence of exopodites on the walking legs, and the appearance of the abdomen and its appendages closely resemble those characters in the true lobsters and crayfish (Astacidea) and the mud shrimps and mud lobsters (Thalassinidea).

The unique specimen of this species was collected by the U.S. Fisheries steamer *Albatross* from a depth of 102 fathoms (187 m) on a bottom of fine sand, mud, and shell in the South China Sea about 35 km southwest of Manila Bay on 17 July 1908. Four of its legs, including the large anterior pair, were apparently lost when the weight of mud accumulated in the trawl (after a haul of only 4 minutes) carried away the belly of the net as it was lifted from the water. The fact that three of the five trawls towed on that day were badly torn suggests that the animal occupies a habitat well protected from conventional collecting gear.

We hope, however, that additional material of this glypheid will be collected soon. Only then will it be possible to conduct a thorough comparative study of the internal anatomy and, it is to be hoped, the ethology and life history of this relict of a phylogenetically important group of animals that was believed to have reached its heyday more than 150 million years ago and to have died out little more than 100 million years later.

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References and Notes

1. M. F. Glaessner, in *Treatise on Invertebrate Paleontology*, part R, *Arthropoda*, R. C. Moore, Ed. (Geological Society of America, Boulder, Colo., 1969), vol. 2, p. R439.
2. J. Forest and M. de Saint Laurent, *C. R. Acad. Sci. Ser. D* **281**, 155 (1975).
3. The specimens we examined are deposited in the National Museum of Natural History, Smithsonian Institution, under the catalog numbers of the U.S. National Museum (USNM).

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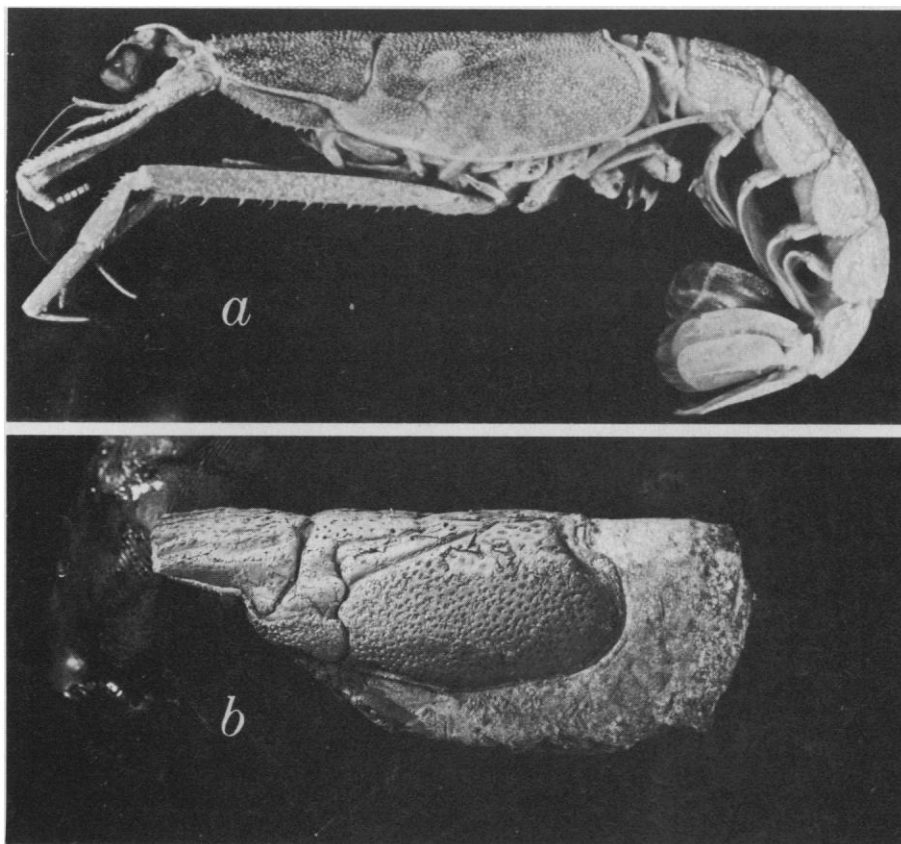


Fig. 1. (a) Male holotype of *Neoglyphea inopinata* (USNM 152650) (3). (b) *Glyphea rostrata* (Philipps) from Corallian Formation, Oxfordian stage, Upper Jurassic, Yorkshire, England (USNM 239545).