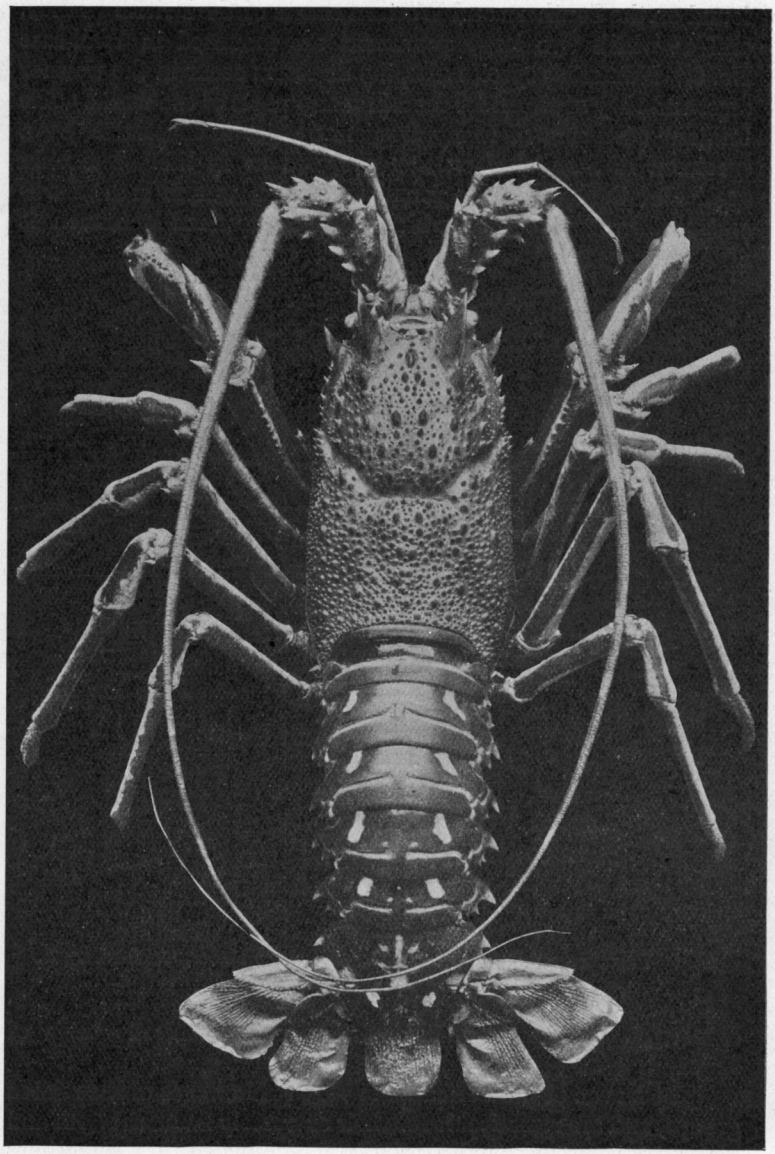

FIG. 35.

The common Spiny Lobster, *Palinurus vulgaris*, much reduced.
[Wall-case No. 6.]

found on the Southern and Western coasts of the British Islands, and of which two large specimens are mounted in Wall-case No. 6. Numerous species of Spiny Lobsters occur in the warmer seas, and they are used for food in many parts of the world. The brilliant colouring of many tropical species is illustrated by a specimen of *Panilurus ornatus* coloured as in life. The only species of the Scyllaridae found in British waters is *Scyllarus arctus* (*Arctus ursus*) of which a Mediterranean specimen is

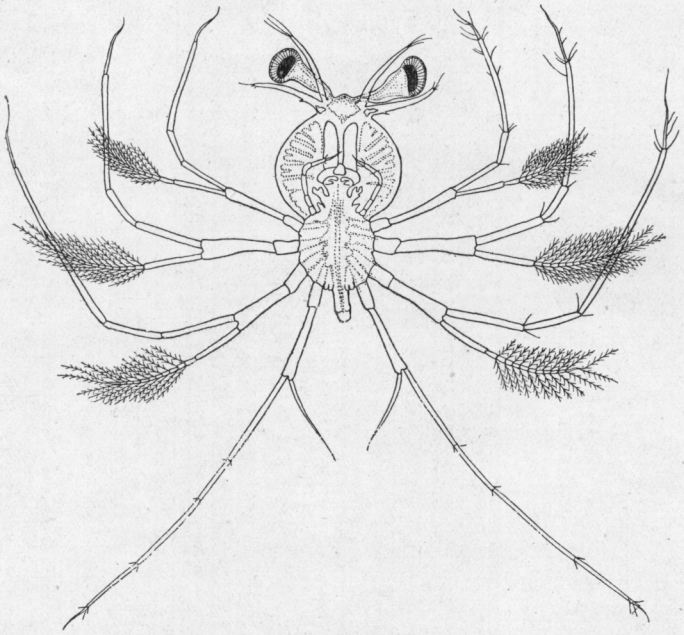

FIG. 36.

The "*Phyllosoma*" larva of the common Spiny Lobster, much enlarged. (After J. T. Cunningham.)

exhibited. It occurs, rarely, off the south-western coasts of England.

The larvae of the Loricata are very unlike those of the related groups, and are remarkable for their extremely flattened form and glassy transparency, and for the large size which they sometimes attain. They were formerly regarded as adult and independent species of Crustacea, and received the generic name of *Phyllosoma* (Fig. 36).

Representatives of the extinct family *Glyphaeidae* are found fossil in rocks of Mesozoic age, from the Trias onwards. In some characters, such as the possession of a scale or exopodite on the antenna, and sometimes in having true chelae, they are much more primitive than the existing Loricata. A drawing of *Glyphaea regleyana* from the Jurassic of France is exhibited.

In the Tribe ERYONIDEA the first four, and sometimes all five, pairs of legs are provided with chelae. Special interest attaches to this tribe on account of its geological antiquity. Fossil forms, not very different from those now living, are found in rocks of Mesozoic age, from the Trias onward.

The existing species are confined to the deep sea, and, like many other deep sea animals, are blind. Some, at least, are phosphorescent, and a living example of *Stereomastis phosphorus* (of which a specimen is exhibited) (Fig. 37) was observed by Dr. Alcock to be "luminous at two points between the last pair of thoracic legs where there is a triangular glandular patch." A copy of a drawing made from a living specimen of another species, *Stereomastis sculpta*, dredged at a depth of 695 fathoms in the Gulf of Panama, shows the red coloration that is very characteristic of deep-sea Crustacea.

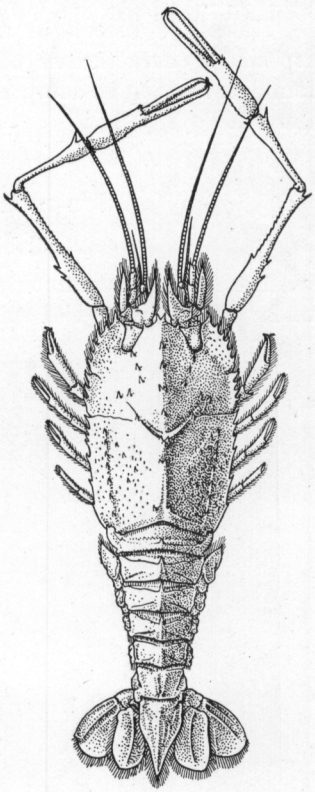

FIG. 37.

Stereomastis phosphorus, female. (After Alcock.) [Table-case No. 11.]

The fossil species are represented by a cast of *Eryon arctiformis*, from the Lithographic limestone (Jurassic) of Solenhofen in Bavaria.

The members of the tribe THALASSINIDEA are burrowing forms, with a soft, loosely built body. They form, in some respects, a transition to the Anomura, in which, in some systems of classification, they are included.

In the genus *Callianassa*, of which two species occur on the south coast of England, one of the chelae of the first pair of legs is much larger than the other and is of peculiar form. A specimen of the large *C. armata* from the Fiji Islands is exhibited.

Thalassina anomala is a widely distributed tropical species, especially characteristic of mangrove swamps, but sometimes found burrowing in damp earth at a considerable distance from the sea.

Sub-order 2.—ANOMURA.

(Table-case No. 12.)

The Anomura commonly have the abdomen more or less bent under the body, or else spirally coiled and asymmetrical. The

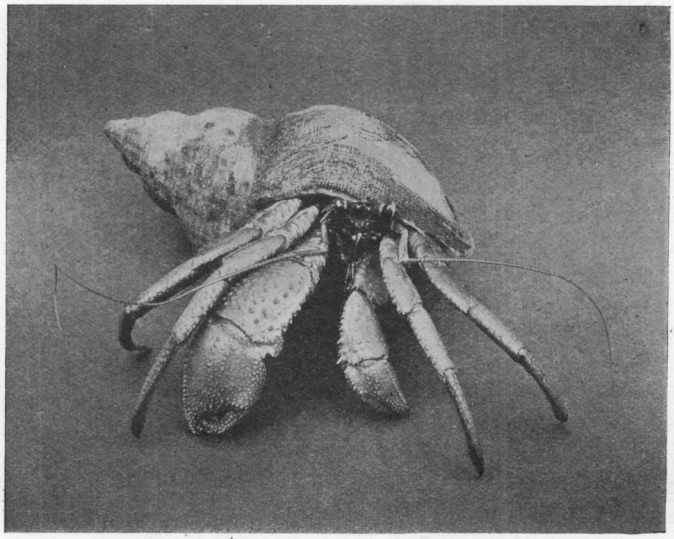

Fig. 38.

The common Hermit Crab, *Eupagurus bernhardus*, in the shell of a whelk, reduced. [Table-case No. 12.]

front, or rostrum, is not united with the epistome. The sixth pair of abdominal appendages (uropods) are rarely absent. The last pair of legs are reduced in size and the last thoracic sternum is movable.

The Sub-order is divided into three tribes, of which the first, PAGURIDEA, includes the Hermit Crabs and their allies. With few exceptions, the most important of which are the Coco-nut Crab, *Birgus*, and the family Lithodidae, the members of this tribe have the abdomen soft, not distinctly segmented, and spirally twisted in adaptation to the habit of living in the empty shells of Gasteropod Molluscs.

The marine Hermit Crabs, forming the family *Paguridae*, nearly all live in shells, and very often the outside of the shell gives attachment to Sponges, Hydroid Zoophytes, or Sea Anemones, between which and the Hermit there may exist more or less definite relations of "commensalism." In Wall-case No. 4 is shown a specimen of the common British species *Eupagurus bernhardus* lodged in a shell of *Buccinum undatum* the outside of which bears a specimen of the Anemone *Sagartia parasitica*. In addition, the cavity of the shell gives lodging to an Annelid worm, *Nereis fucata*, which protrudes its head from the opening of the shell and shares the hermit's meals. In the case of *Paguropsis typica*, exhibited in Table-case No. 12, no shell is carried, but the abdomen is protected by a cloak of living sea anemones held in position by the hinder legs of the crab. One of the largest representatives of the family, *Pagurus punctulatus*, is also placed in this case.

The members of the family *Coenobitidae* are Land Crabs, though their early stages are passed in the sea, and the adults visit the sea periodically. The species of *Coenobita* carry shells about with them like the marine Paguridae, but the "Robber Crab" or "Coco-nut Crab," *Birgus latro* (Fig. 39), of which a specimen is shown in Wall-case No. 6. has given up the habit of carrying a portable dwelling, and the dorsal plates of the abdomen, which in the other hermit-crabs are soft and membranous, have again become hard and shelly.

The stories told of the tree-climbing habits of *Birgus* have often been doubted, but the matter is set at rest by a photograph exhibited in Wall-case No. 6. This photograph was taken on Christmas Island, in the Indian Ocean, by the late Dr. C. W. Andrews, F.R.S., of the Geological Department of the Museum, and it shows a specimen of *Birgus* in the act of descending the trunk of a sago-palm.

The members of the family *Lithodidae* have become completely crab-like in shape, and were formerly classified with the Brachyura, with which, however, they have no direct affinity.