

The Brachyura are usually divided into five Tribes, which, however, are not all of equal value :—

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|---------------------|---------------------|
| Tribe 1—Dromiacea. | Tribe 3—Oxyrhyncha. |
| „ 2—Oxystomata. | „ 4—Cyclometopa. |
| Tribe 5—Catometopa. | |

The DROMIACEA or Sponge Crabs are the most primitive of the existing Brachyura. The last pair, or the last two pairs, of

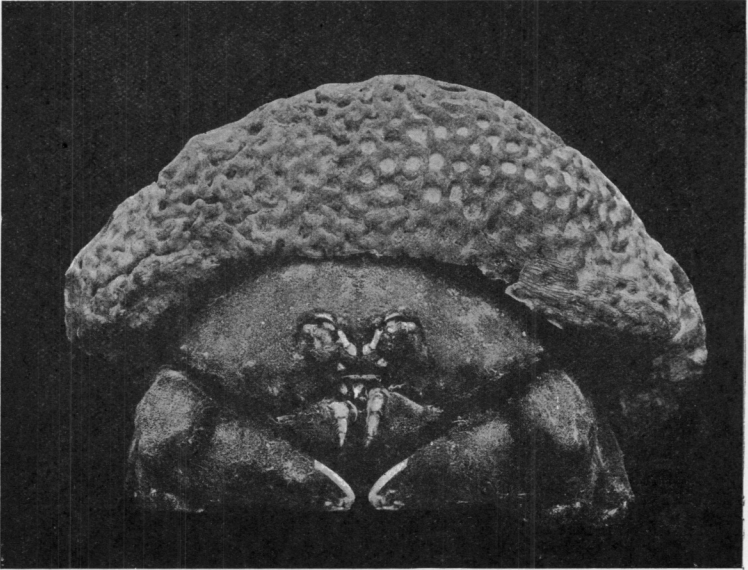


FIG. 43.

Dromia vulgaris. Front view of a specimen carrying on its back a mass of the sponge *Clione celata* (reduced). [Table-case No. 12.]

legs are dorsal in position, with hooked or prehensile claws, and are used for holding a piece of sponge, an Ascidian, or half of a bivalve shell, under which the animal is completely hidden. The mouth-frame is square. The primitive character of the group is shown especially by the retention of a vestigial pair of limbs on the first abdominal somite of the female, and often on the sixth abdominal somite in both sexes (*see* the exhibited specimen of *Dromia lator*). The basal segment of the antenna is large and unusually free, the pits into which the antennules fold are not separated from the orbits, and the gills are, in most

cases, more numerous than in the other Brachyura. The oviducts of the female open on the first segment of the third pair of legs.

Many of the Dromiacea, especially the more primitive forms, inhabit the deep sea. *Dromia vulgaris* (Fig. 43), which occurs off the South of England, belongs to the family *Dromiidae*, in which the last two pairs of legs are generally reduced in size, and are elevated on the back. One of the specimens exhibited, taken in the Bristol Channel, carries as a cloak a specimen of the sponge *Clione celata*. In the family *Dynomenidae*, represented by the little *Dynomene hispida*, only the last pair of legs are reduced and elevated on the back.

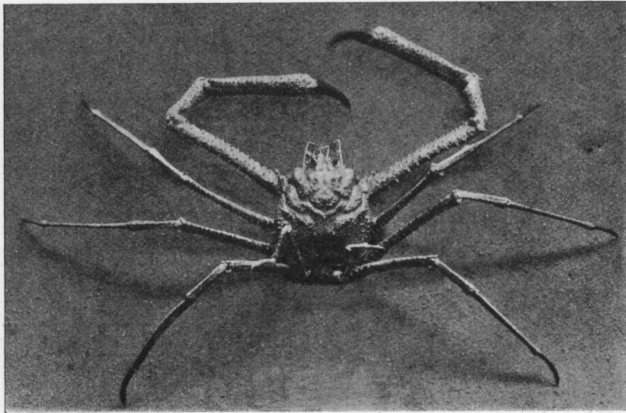


FIG. 44.

Homola cuvieri. The carapace of this specimen is about 7 inches long.
[Wall-case No. 5.]

Latreillia elegans belongs to the aberrant family *Latreilliidae*. In the triangular shape of the carapace and the length and slenderness of the legs, the members of this family show a certain similarity to the Spider Crabs of the Tribe Oxyrhyncha.

To this group also belongs the family *Homolidae*, a typical example of which is the large *Homola* (*Paromola*) *cuvieri* (Fig. 44), exhibited in Wall-case No. 5. This species occurs in deep water off the south-west of Ireland.

The members of the family *Prosoptonidae* are only known as fossils, but it has recently been shown that they are closely allied to the living *Dromiacea*, especially to the deep sea *Homolodromiidae*. They range from the lower Oolite to the Upper

Cretaceous. A cast of the carapace of *Prosoxon mammillatum* illustrates this family.

The members of the tribe OXYSTOMATA, sometimes known as "Sand Crabs," may be recognised by the triangular shape of the mouth-frame, which is narrowed in front and extends forward between the eyes. The channels which carry the outward stream of water from the gills, and in most other crabs open at the front corners of the mouth-frame, are produced forwards to the front of the head and are closed in below by plate-like processes from the endopodites of the first maxillipeds. This arrangement is correlated with the characteristic habits of the tribe, nearly all the members of which conceal themselves in the sand, where they lie buried with only the eyes exposed.

In the family *Calappidae* the openings by which the water enters the gill-chambers are situated, as in most Brachyura, in front of the bases of the chelipeds. The legs are normal in position.

A specimen of *Calappa hepatica* is exhibited which has been prepared to illustrate the distinctive characters of the tribe. The second and third maxillipeds have been removed on one side to show the triangular mouth-frame (coloured red) and the process from the endopodite (coloured blue) of the first maxilliped. The arrow indicates the course of the respiratory current. A broad space (marked X), free from hair, is seen on each side of the mouth-frame leading down to the entrance of the gill-chamber. When the chelipeds are closed up against the under surface of the body, as in one of the specimens of *Calappa flammea* exhibited, this space is converted into a tubular channel, through which a supply of pure water can reach the gills when the crab is buried in the sand.

The species of the genus *Matuta* swim well by means of their flattened, paddle-shaped feet, which are also used for digging in sand. The animals are said to bury themselves with wonderful rapidity. The channel leading to the entrance of the gill-chamber, seen in the preparation of *Calappa*, is here much deepened in its front portion, where the overarching hairs convert it into a tubular passage opening into the orbit.

In the family *Leucosiidae* the channels leading to the gills are completely covered in by the expanded exopodites of the third pair of maxillipeds. This character is illustrated by a preparation of *Parilia alcocki* (the largest species of the family), in which the second and third maxillipeds have been removed on one side.

The mouth-frame is coloured red and the endopodite of the first maxilliped blue. X marks the inhalent respiratory channel. One of the third pair of maxillipeds is mounted separately to show the greatly expanded exopodite which, in the natural position, covers the inhalent channel.

The only Oxystomata found in British seas are several species of the genus *Ebalia*. They are small Crabs, resembling the pebbles among which they are found. Specimens of *Ebalia tuberosa* are shown in their natural surroundings in Wall-case No. 4.

In the family *Dorippidae* the afferent branchial openings are in front of the bases of the chelipeds. The abdomen is not completely concealed under the cephalothorax. The last two pairs of legs are elevated on the dorsal surface of the body, and have the terminal segments more or less distinctly modified to form a prehensile claw. The *Dorippidae* appear to have given up the sand-burrowing habits characteristic of other Oxystomata, and they conceal themselves by holding a piece of sponge or some other object over the back by means of the hinder legs. Many of the species inhabit the deep sea.

In the *Raninidae* the water seems to enter the branchial chamber from behind, between the edge of the carapace and the bases of the last pair of legs. As in *Dorippidae*, some of the abdominal somites are visible from above, and the last pairs of legs are elevated on the dorsal surface. The legs, however, are flattened and paddle-like, and appear to be used for swimming and digging, as in *Matuta*. The "Frog Crab," *Ranina scabra*, is, in general appearance, one of the most striking and aberrant of the Brachyura.

In the Tribe OXYRHYNCHA the carapace is usually triangular in shape, narrowed in front, and produced to form a rostrum. The mouth-frame is square. The genital ducts of the male open on the bases of the last pair of legs. As a rule, the legs are long and slender.

The Crabs of this tribe are generally sluggish and inactive animals, and many of them, as already mentioned, have the habit of masking themselves with seaweed, sponges, etc. Evidences of this habit will be noticed on many of the specimens in this case.

The members of the family *Maiidae* are known as "Spider Crabs." In these, the chelipeds are very mobile, and are usually not much stronger than the other legs. The orbits are more or

less incomplete. Among the specimens exhibited may be mentioned *Macropodia longirostris*, a common British species which has the long and slender legs that are typical in the group.

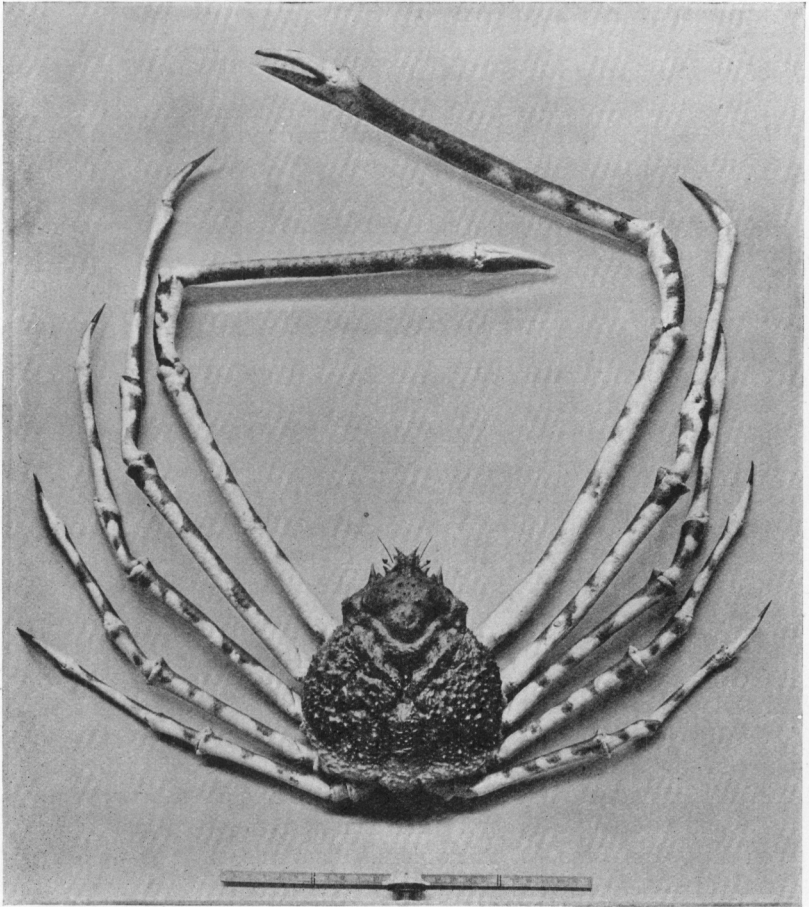


FIG. 45.

The Giant Japanese Crab, *Macrocheira kaempferi*, male. The scale of the figure is given by a two-foot rule placed below the specimen. [Specimens of the male are mounted above Wall-cases 3 and 4, and one of the female above Wall-cases 1 and 2.]

Huenia proteus is noteworthy for the leaf-like expansions of the carapace; in life it is of an olive-green colour and is difficult to detect among the foliaceous sea-weeds which it frequents. To

this family belongs the large Spider Crab of the South and West coasts of England, *Maia squinado*, a large specimen of which is exhibited in Wall-case No. 4.

Another noteworthy member of the family is the Giant Japanese Crab, *Macrocheira* (or *Kaempferia*) *kaempferi* (Fig. 45), the largest of existing Arthropoda, of which two male specimens and a female are mounted above the Wall-cases at the south end of the Gallery. They were coloured after a drawing of a live specimen by a Japanese artist.

In the family *Parthenopidae*, the chelipeds are usually much more massive than the other legs, and the orbits are well formed. The typical members of this family have taken to the same habitat as the Oxystomata, burying themselves in sand or shingle, and they show many superficial resemblances in the shape of the chelipeds, the lateral extensions of the carapace, and the disposition of the breathing channels, to such Oxystomes as *Calappa*. In many species, as in the *Parthenope horrida* exhibited, the carapace and limbs are remarkably rugged and uneven.

The crabs belonging to the Tribe CYCLOMETOPA have the carapace, as a rule, broader than long, with the anterolateral borders strongly curved, and the postero-lateral borders convergent; the front is not produced into a rostrum; the mouth-frame is square; the genital ducts of the male open on the bases of the last pair of legs. With the exception of the River Crabs, all the members of this tribe inhabit the sea.

In the large and very varied family *Xanthidae*, the carapace, as a rule, is transversely oval, and its surface is often lobulated. The species of this family are very abundant, especially in the tropics, in the littoral region. Three species of *Xantho* are British, one of which, *X. incisus*, is exhibited. The vivid colours of some tropical species are exemplified by the painted specimens of *Carpilius maculatus* and *Zozymus aeneus*. To this family also belongs the large Tasmanian Crab, *Pseudocarcinus gigas* (Fig. 46), a specimen of which is mounted above Wall-cases Nos. 5 and 6.

A specimen of *Zozymus aeneus* is exhibited which has been prepared to illustrate the disposition of the branchial passages in Cyclometopa, for comparison with similar preparations of the Oxystomata in Table-case No. 13. The third maxilliped has been removed on one side to show the quadrilateral shape of the mouth-frame (coloured red), characteristic of most Brachyura.