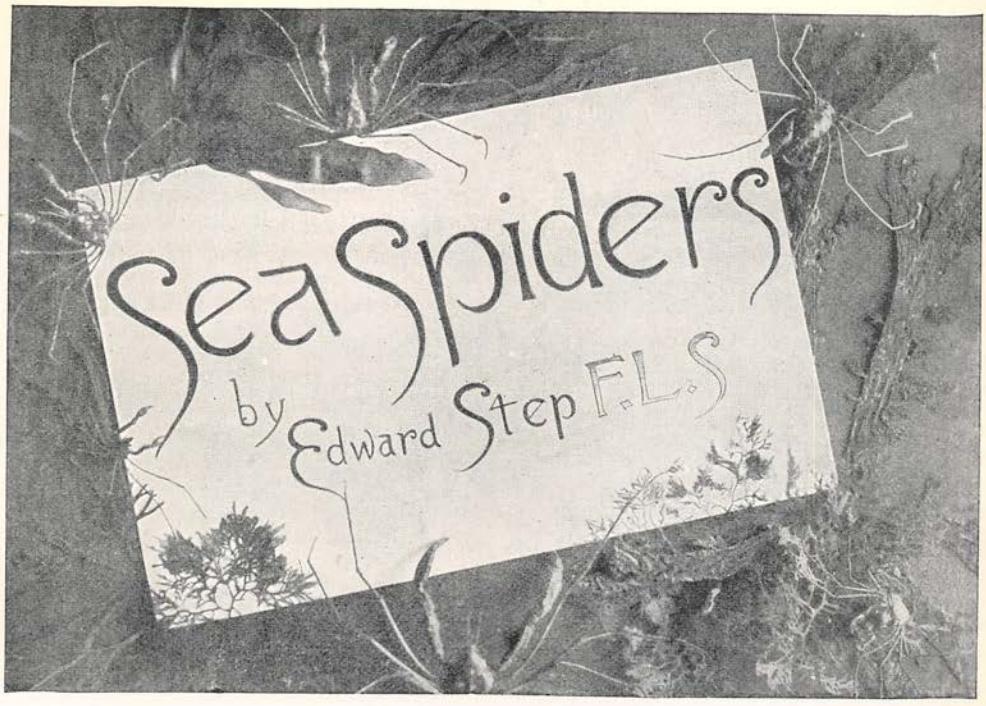
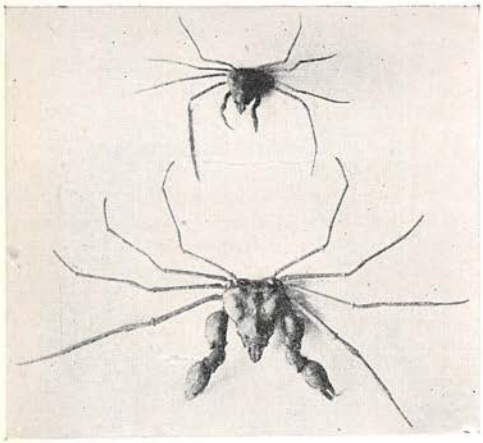


IT is to be feared that when Adam was called upon to find names for all the creatures he found in the Garden of Eden, he must have lumped many of them together under a common designation, or else he omitted to register the names he bestowed. Certainly his successors have failed to hand down to us the names of any but the comparatively few large creatures. But for this omission Spenser would not have had to lament the "endlesse worke" he had in hand "to count the sea's abundant progeny." It may safely be said that to-day not one in a hundred of the creatures inhabiting these little islands in the North Atlantic have got real folk-names, and the few that have bear eloquent testimony to the poverty of man's nominative ability. Many of the sea creatures, for example, have had to be content with the names of totally dissimilar land creatures with the distinctive prefix of "sea." Thus we have sea-lion as the name of a species of seal, and among fishes such inappropriate and even confusing names as sea-owl, sea-adder, sea-eagle, sea-ape, sea-fox, sea-snail, and so forth throughout a lengthy list.

There is, perhaps, more reason for naming the subjects of this article sea-spiders, because some of them, though indubitably crabs, bear a very striking resemblance to *the* spiders in their long, alternated limbs and small trunks; so much so that very few fishermen will recognise them as crabs, even though you compromise by calling them spider-crabs. To them they are as much spiders as the eight-legged creatures that construct webs in their homes and gardens. Of the twelve kinds of spider-crabs that are found on the British coasts fishermen will admit but one as a crab—that is the gabrick, or prickly spider-crab (*Maia*), one of the largest of our crabs. None of the group is well known, except to the few naturalists who have made a special study of the crustacea, and as there are some very curious points in the economy of most of them I have thought the readers of this magazine would be interested in a brief account of them. One need not go beyond our own seas for examples, but one conspicuous foreigner may be mentioned—Kämpfer's spider-crab (*Macrocheira Kämpferi*), which, in the waters of Japan, can span ten or eleven feet with its long, slender legs, though the trunk to which these are articulated is only about a foot in diameter.

On glancing at almost any crab it is possible to tell by the structure of its legs and trunk what is its mode of life. That one is built for swimming through the sea, or for ascending rapidly from the bottom to the surface waters. This one is meant for slipping into crevices of the rocks on the slightest alarm, that for getting rapidly

beneath them, and here again is one designed for life beneath the deep-water sands. But looking at the entire series of British spider-

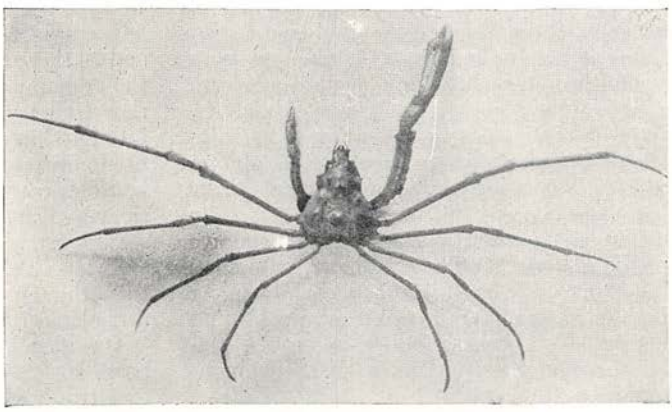


LEACH'S SPIDER-CRAB.

crabs, we fail to see that any of them is adapted for either of these conditions of life. Their thick bodies, broadest behind, are ill-adapted for backward burrowing or for getting into safe retreats, for which their long, sprawling, weak limbs also unfit them. These limbs are rounded, and therefore useless as paddles, and when not as slender as grass-stems are covered with bristles or spines. Their bodies, too, are in varying degree covered with sharp spines and hooked bristles. The gabrick is more spiny practically than a sea-urchin, for the spines of an urchin may be moved aside, but those of the gabrick are immovable.

I have mentioned several modes of life for which the peculiar build of the spider-crabs unfits them, and the reader may not unreasonably expect to be informed for what occupation they are fitted. Their resemblance to spiders reminds us that these spinners use their slender limbs for the purpose of traversing their own delicate webs without breaking through. Many long-legged insects can walk over the tips of grass-blades, even as Atalanta was fabled to skip over the fields of corn—her toes were probably drawn out to an inordinate length like the finger-bones of the bat! Several of the water-bugs walk over the surface of ponds without putting their feet in the water, and a bird of South America—the jacana—walks over the aquatic weeds by the aid of exceedingly long toes, just as our fellow-humans in Northern Europe walk over deep snow with the aid of ski. So, too, do our spider-crabs walk over and climb up and down the finer weeds in deep water, whilst the larger and heavier species lie about on mud and the soft decaying material accumulating on parts of the sea-bottom—thanks to their long legs.

It is not so easy for the reader to check this statement as it is to test the truth of what I have stated relative to terrestrial creatures, but it is not at all difficult to obtain evidence in support of my contention. In dredging for examples of the life of the sea bottom we bring up part of the bottom. The finer constituents, such as mud and sand, for the most part escape through the meshes of the dredge-net, but shells, stones, corals, weeds, etc., are retained, and from their condition we can judge the character of the bottom. When the dredge comes up half filled with the long green ribbons of grass-wrack, among which are certain kinds of spider-crabs that have cut off little bits of this grass and fastened them about their legs and bodies, we are surely justified in saying the crabs live among the grass-wrack. When, too, from another part of the dredging ground the dredge comes up full of coral, and among it are quaintly formed spider-crabs that are obviously built in imitation of the coral, it is only exercising common sense to say the crabs live among the coral



SLENDER SPIDER-CRAB.

branches. Once more, when among mud and decaying *débris* of weeds the gabrick comes up with his back thickly coated with

similar rubbish, we are justified in holding the belief that the gabrick spends his life upon such stuff.

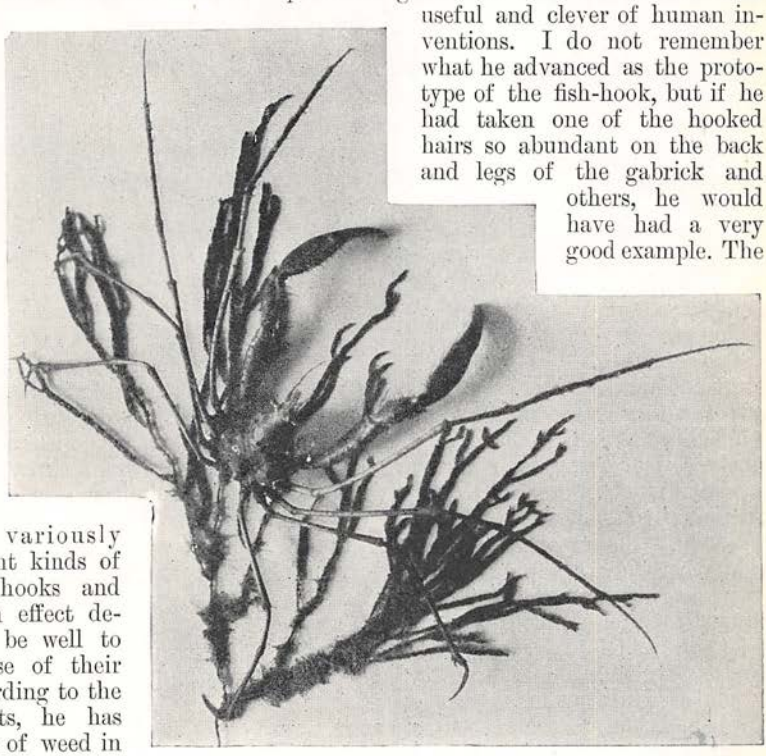
Now, such situations are more or less in

GIBBS' SPIDER-CRAB, WITH RED SPONGE GROWN OVER CARAPACE.

the open, where fishes are for ever prowling around, seeking what they may devour. Crabs and their kindred are the favourite food of many fishes, just as they are with many humans, and it requires all the craftiness of the race to enable them to survive the onslaughts made upon them. Great fecundity is one of their safeguards against extinction, and, as we have already hinted, some have developed swimming power, or the capacity for rapidly getting beneath rocks and sand on the slightest suspicion of danger, to say nothing of the provision of formidable nippers wherewith to defend themselves at close quarters.

Nature having variously equipped the different kinds of spider-crabs with hooks and spines, they have in effect decided that it would be well to make the fullest use of their endowment; so, according to the situation each affects, he has hooked on little bits of weed in such an irregular fashion that the underlying symmetry of trunk and limbs is admirably disguised. If the members of our own race were similarly endowed with hooks, they could scarcely exhibit greater intelligence and artistic taste than are shown by some of these spider-crabs in dissembling their natural beauty. This is the more remarkable because their eyes are so situated and mounted that a very limited portion of their decorated surfaces can be brought within their field of vision. However, some other sense probably comes in to help them to a satisfactory arrangement of their fal-lals; for when a specimen decked out with red weeds is placed in a tank where only green weeds are growing, the red is soon stripped off and replaced by green. Some kinds decorate both back and limbs, some the limbs only or chiefly; but in no species with which I am acquainted is any attempt made to improve the natural condition of the under surface, except the broad abdomen of the female, when it is extended for the protection of her numerous eggs—but this has then ceased to be a part of the under surface.

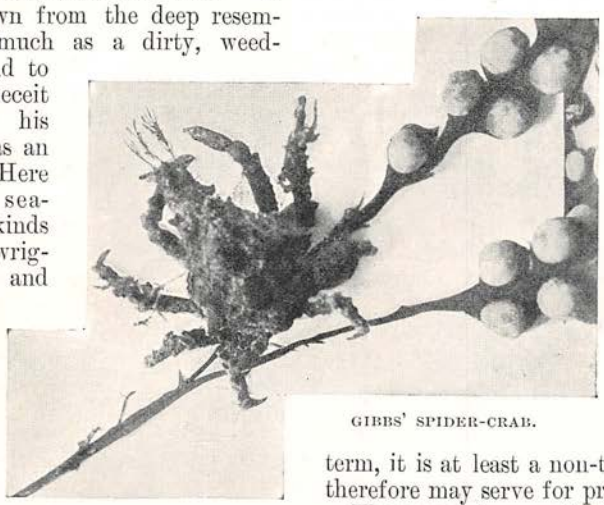
The late Rev. J. G. Wood was very fond of showing that Nature had either anticipated or given the hint for all the most useful and clever of human inventions. I do not remember what he advanced as the prototype of the fish-hook, but if he had taken one of the hooked hairs so abundant on the back and legs of the gabrick and others, he would have had a very good example. The



COMMON SEA-SPIDER, FROM LIFE.

gabrick's back is studded with stout conical spines, and around the base of every one of these is a triple or quadruple ring of these

hooked hairs. On the upper side of the walking legs the hooked hairs are crowded in straight lines, and the lower surfaces are as thickly clothed with straight, needle-pointed bristles. The nipper legs alone are free from such adornment, because they are mostly hidden beneath the overhanging front of the shell. With these nippers the gabrick breaks off lengths of the pod-weed, and, whipping its own back with these, catches them under the hooked hairs, where they are so securely held in position that it is by no means a light task to clean a gabrick for the cabinet, so as to show the natural condition of the shell. In addition to these larger weeds there are many of a finer description, and mingled with them are some of the branching corallines, the whole forming a well-compacted coat that effectually hides the shell and catches sand and mud. A gabrick fresh drawn from the deep resembles nothing so much as a dirty, weed-covered stone; and to carry out the deceit more thoroughly his coat of rubbish has an extensive fauna. Here you may find sea-anemones, many kinds of marine-worms, wriggling brittle-stars, and a host of minor crustaceans. A few years ago writers on crabs, who had chiefly studied cabinet specimens, were content to assume that these weeds had grown upon the crab owing to its sluggish habits, though a slight examination of freshly caught examples must have shown that the weeds were all short fragments mechanically attached.



GIBBS' SPIDER-CRAB.

Taking a glance at the smaller of these spiders of the sea, we find much similarity of treatment, but with nothing like slavish adherence to a family plan. The long-legged spider-crabs (*Macropodia*), of which we have two species, chiefly decorate their back by getting tube-worms to construct their white, porcelain, serpentine tunnels upon it. Small saddle-oysters also help to disguise the crab, and bits of flimsy red weeds are stuck over back and legs in such a manner as to wave about with every movement of crab or water. These species have peculiar scythe-shaped terminal joints to their walking legs. When folded close against each other these joints serve as supplementary nippers for taking secure hold. By this means the creatures will scramble up a trammel-net—which is set vertically—and on your attempting to gather specimens from such positions, you will find they more readily detach their legs from the body than release their hold of the net. The eyes of these long-legged species are worthy of note—they stand out at right angles from the rostrum, are of peculiar shape, and end in a point. Cranch's spider-crab is similar to these in many respects, but it has shorter legs, with much-curved terminal joints resembling the claws of perching birds. The back is covered with hooked hairs, and the legs with long, straight hairs spreading horizontally. It covers itself with dull red weeds, which render its discovery a matter of difficulty.

Another section (*Inachus*) of the spider-crab group contains three native species, differing only in points of interest to the expert. One of them has been termed the scorpion spider-crab, and though we fail to see any fitness in the term, it is at least a non-technical name and therefore may serve for present purposes.

These scorpions are found in deeper water, and show a decided preference for disguising themselves with a slimy yellow sponge which they appear to plant on their backs and the upper side of their nipper-claws. One specimen I had under observation for several weeks amused me considerably. His back and nippers were covered with an even coat of this sponge, and his lesser limbs were decked out with fragments of thin crimson weed, and, slightly to alter Browning—

> I never could enough admire
> The wisdom of this quaint attire,

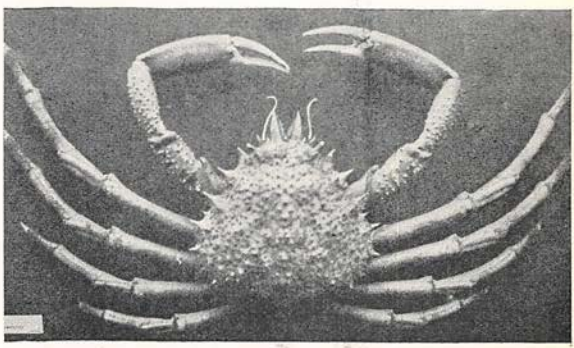
for I found it was not only good for a disguise, but also served him for food. The tank in which I kept him was tapestried with green weeds, and it was evident that he was out of harmony with his environment, for

he commenced stripping off his red rags and was not content until he had got rid of them all. Some he ate, and then set to work to cover his limbs afresh with green gathered from his prison walls. But this was only the gossamer-like conferva, and not of sufficient substance to be so used, so he had to abandon that design. After he had been with me for about a fortnight it appeared as though the tank did not provide him with sufficiently appetising food. One day I noticed he was very busy—stretching his big arms across his back, he grabbed a handful of the sponge and brought it to his jaws, eating it with apparent relish. He made many meals after the same fashion, until his back was nearly denuded of its covering, though he was careful not to exterminate the sponge altogether, but to leave a little for future growth.

ROUGH SPIDER-CRAB.

Of all the spider-crabs commend me to Gibbs' spider (*Pisatribulus*) for genuine artistic industry. I should imagine that Nature had fitted him out specially for a life among sponges and corals, for his upper surface is thrown up into five or six rounded hillocks and the whole covered with a short "pile" of thick, scurfy hairs, and his legs are so distorted, drawn up, and gnarled, that he appears to have suffered acutely all his life from rheumatism and chalky gout. Only the first two pairs of walking legs are of much service for walking, but the others are admirable for clinging tenaciously to the stems of seaweeds and for not looking like legs. And yet *tribulus* is not satisfied with his natural disguise; he adds to it bits of weeds and corallines, and plants sponges where he thinks they will be most effective. As I write I have a pair of specimens before me, male and female. On the unsupported evidence afforded by his added finery one might be pardoned for supposing the male to be a female; for his head is adorned with ostrich-feather-like plumes of coralline imbedded in a patch of sponge. Behind this are set several streamers of flimsy green and crimson weeds to wave over his back with every movement of the water. Along his sides are several patches of thin, white, calcareous sponges, so that when looked at from below these would produce the illusion of holes through the body. The first two pairs of walking legs are covered with loose, fluttering rags of weed, but the two hinder pairs are left unadorned, because they are clasped round some support and hidden beneath the crab's body. The female specimen is got up quite differently. She appears to have lacked the patience necessary for titivating herself up with bits of ribbon and feathers; she bears on her back a mass of vermilion-coloured sponge about three times her own bulk. Beneath this load she is hidden, except her walking legs, and these she has in appearance severed from her body by sticking on little patches of white sponge, like those on the male's sides, but smaller.

The last example of this remarkable family with which I shall trouble the reader is the strawberry crab (*Eurynome*), which does not seek to improve upon Nature. It lives among corals in deep water (15 to 25 fathoms) on our south-west coast, and is built in very close harmony with its surroundings. The back of this creature is studded with broad-topped, stony excrescences of a pink tint, in some cases sufficiently red to suggest the likeness to a strawberry. The limbs, too, are knobbed and twisted in such manner as makes them to resemble coral branches. The nipper-legs of the male are very long,



STRAWBERRY CRAB.

but when not in use he keeps them doubled up to reduce their length one half and destroy all his resemblance to a crab.