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TRAVELS IN LYCIA,
 MLYAS, AND THE CIBYRATIS,

IN COMPANY WITH
 THE LATE REV. E. T. DANIELL.

BY
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as hermit crabs. To the naturalist who delights in the antiquities of his science, the conspicuous part played by the hermit crab on these classic shores has a double attraction, for, independent of the interest attached to the singular habits and sagacity of this curious creature, in it we see the veritable *καρκίνιον*, which Aristotle took so much pains to observe and describe.* This animal, he tells us, has characters common both to the crustacea and testacea. In form it resembles a *χαραβος*, by which name he evidently means the spiny lobster. It is born without any shell, but, like the testacea, it passes its life in a shell. Then he recounts its characters in detail, and with wonderful accuracy. After describing its anterior members, he notices the softness of the posterior half of the body (*μαλακον απαν εστι*), and states that it is not fixed to its shell like the animal of the whelk, and, consequently, may be easily drawn out of it. Curiously enough the truth of this statement was made a matter of controversy among naturalists in the early part of last century, for Swammerdam denied the assertion of Aristotle, that the hermit was not the true owner of his

* *Περί Ζωων*, iv. 4.

shell, and maintained that the contrary was the case, and that there was a muscular attachment connecting the crustacean to its house.*

Although old Rondeletius and others had previously certified to the truth of Aristotle's narrations, yet the faith of many, such as the French commentator Camus, was shaken by the great Dutchman's positive assertions, and reputation for accurate observation. Yet was the father of natural history right after all. And that he had observed most carefully is evident from his details respecting the several kinds of these hermit crabs and the variety of their borrowed habitations.

Sea-urchins are frequent on this coast as elsewhere in the *Ægean*, and are esteemed as an article of food by the Greeks. The species which is most abundant is the purple sea-egg, *Echinus lividus*, and it is that which is chiefly used. The variety most frequent has very long slender purple spines. The ovaries are eaten. This is doubtless the first of the kinds of *ἔχινος* mentioned by Aristotle,† of which, he says, the eggs are large and good

* *Biblia Naturæ*, p. 196.

† *Περί Ζωων*, δ. v.

for eating. It adheres to the rocks a little below the water-mark. In the inlets of the Gulf of Macri, a larger species, the *Echinus esculentus*, is found sparingly and in deeper water than the last. This is probably the *Εχνοῦντρα* of Aristotle, which he describes as the largest kind of sea-urchin; whilst his "little sort, with very long and hard spines, and living in places where the sea is many fathoms deep," and of which he says it was used "as a remedy against strangury," agrees exactly with the characters and habits of the *Cidaris histria*, whose great spines would attract attention at all times from the fisherman, among whose lines they would get entangled, when set in water of a depth of from forty fathoms downwards. It is abundant in places on the Lycian coast.

Besides those enumerated there is the little *Echinus monilis*, better known as a fossil than as a recent species, and several of the *Spatangus* tribe, one of which, the *Amphidetus mediterraneus*, is, doubtless, the elongated urchin with soft, weak, white spines and white ovaries, mentioned by the great naturalist of ancient Greece as found in the neighbourhood of Torone. It lives on the sandy parts of the coast. Star-fishes

are as frequent as sea-urchins, those of the genus *Uraster*, *Ophidiaster*, and *Asterina*, among the rocks by the shore; *Asterias* and *Luidia*, on sandy bottoms of a few fathoms depth; whilst *Goniaster* and *Palmipes* extend their range to between thirty and sixty fathoms. The brittle-stars, however, are found at much greater depths, and in the deepest parts of the Gulf of Macri, which were explored by the dredge, even as deep as one thousand and eighty feet below the surface of the sea, the long, slender, worm-like arms of *Amphiura chiagii* were found twisting and writhing in the soft grey mud.

Among the most plentiful marine animals in muddy bays are the *Holothuriæ*, mostly long, leathery, chocolate-brown species having their heads garnished by twenty short tentacula. We did not hear of their being used as food, though they might be advantageously, since they are of the same nature as the Trepang, so much sought after as an article of luxury in the Indian seas. They are exceedingly sluggish creatures, but scarcely so much so as to permit our considering them to be identical with the creatures called *Holothuria* by the ancients, which are said by Aristotle to be motionless,

and of a nature between the animal and the plant, and to differ from sponges only in their being detached. May he not have had in view the large, round, sponge-like alga called *Spongodium*, living free on the sea-bed and abundant in the Greek seas? This is the more likely since (in the fourth book and eighth chapter of the History of Animals) he mentions the *Holothuricæ* of modern naturalists distinctly, when he states that experienced fishermen assert they have speared when fishing, black, round, cylindrical animals like pieces of wood; a description which cannot be mistaken since it exactly applies to the common Greek sea-cucumbers.

Several species of Echinodermatous worms, of the genera *Sipunculus* and *Syrinx*, are common in the crevices of rocks near the margin of the water; also the *Bonellia*.

Many beautiful Medusæ inhabit the Gulf of Macri; species of *Aurelia*, *Geryonia*, *Cephea* and *Rhizostoma*. Some of these, especially of the last-mentioned genus, grow to a great size. Still more beautiful is the curious creature, or mass of creatures of this tribe, called *Stephanomia*. It resembles a spike of beautiful flowers floating beneath the surface of the water. One half

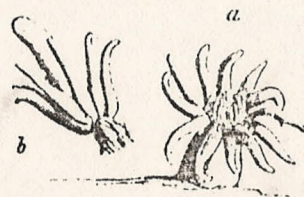
of the spike, which is nearly a foot long, is made up of transparent semi-cartilaginous scale-like bodies, arranged so as to resemble a catkin, and they are followed by innumerable grape-like organs, which contract and expand at the will of the animal. These are speckled with vivid crimson, and are intermixed with long twining tendrils, giving the whole a singularly plant-like aspect. They are as delicate as they are beautiful, and any attempt to raise them entire out of the water is almost sure to fail, as the slightest blow dissolves the union of the numerous parts composing the elegant, yet complicated, whole. Whether they form many animals bound together into a floating republic, or are all to be regarded as the varied and multiplied organs of one creature, is a question as yet open to discussion.

Almost as beautiful is the *Porpita*. The only specimens we met with were cast on shore on the sands near Patara. It is a disk of transparent cartilage, of the size and shape of a half-crown piece, marked with concentric furrows, crossed by radiating striae. The upper surface is covered by a purple membrane; the lower bears suspended innumerable suckers of the most brilliant

ultra-marine. These suckers surround a central mouth, to which doubtless they serve to convey the animal's food. It floats in the sea, like other acalephæ, and its habits are probably similar to those of the *Cephea*, which, though it has no internal skeleton, approaches the *Porpita* in many points of structure. The *Velella* resembles the *Porpita*, but has a little sail of cartilaginous membrane elevated on its disk, like a gnomon on a dial-plate. It also is an inhabitant of the Lycian sea.

The ancient Greeks included under the name of *Acalephæ* both the *Medusa* and the *Actinea*; and indeed they closely approach in organization. When, however, we are told by Aristotle, after he has distinctly described the common rock-inhabiting *Actinea*, that there is a kind which detaches itself at night from the rocks and goes out swimming to seek for its prey, we must not suppose (as has been hitherto conjectured) that he confounded the two animals—the floating *Medusa* and the fixed *Actinea*—and had mistaken the former for a state of the latter. In the Greek seas, and especially on the coast of Lycia there are true *Actinea*, which are equally at home fixed to the rock and swimming about

the sea, even far from land. One species of these is about an inch long, of a yellowish-brown colour, and having a mouth surrounded by two circles of tentacula, the outer one long and the inner short. When swimming—its usual habit—it assumes a pyriform, or rather elongated bell-shape, and, directing its hinder extremity forwards, it propels itself through the water by alternate contractions and expansions of its body, exactly in the manner of a *Medusa*. But, when by the shore, or placed in a vessel filled with sea-water, it changes shape, dilates its hinder extremity into a suctional disk, by which it fixes itself to stones, weeds, or the sides of the glass, and assumes its normal form as an *Actinea*.



The true *Medusæ*, and probably the *Rhizostoma* and *Cephea*, are evidently distinguished by Aristotle, when he speaks of marine animals

of an orange-colour, shaped like shields, and furnished with a great many fins.*

The most common species of *Actinea* were the *Anthea cereus* and the *Actinea rubra*. From their abundance and dissimilarity, their distinctions, and at the same time resemblances, must always have attracted attention, and in them we may recognise the smaller and larger kinds of ἀχαλῆφι distinguished by Aristotle. A rarer animal of the same tribe is the *Edwardsia vestita*, which lives in a tube of mucilaginous matter and cemented stones, constructed by itself. We found *Actinea* to range as deep as twenty fathoms.

The coast of Lycia, more than any other part of the Ægean, abounds in the only Mediterranean coral that forms masses of considerable size. This is the *Cladocora cæspitosa*. It is a group of strong cylinders, each as large as an eagle's quill, which branch and interlace, and grow in such a fashion upon the rock, as to resemble a head of cauliflower—a resemblance the more striking on account of the yellow colour of the expanded polypes terminating the

* ἑτέρα δ' ἄσπισιν ὁμοία, τὸ μὲν χρῶμα ἐρυθρὰ, πτερυγία δὲ χοντὰ ποικίλα. Περὶ Ζῴων. iv. 7.

several tubes or polypidoms. In the Bay of Macri these masses of coral are very numerous and conspicuous near the water's edge, and to a depth of from one to two fathoms. The future visitor at Telmessus who may wish to observe these curious and elegant polypes, may see plenty of them by stepping from the ancient theatre to the rocks immediately below it. The red coral is also found on this coast, but so small as to be of no value. The depth at which some corals, both *Helianthoid* and *Ascidoid*, live here is very surprising. Thus a *Caryophyllia* allied to *cyathus* was found ranging from five to ninety fathoms: *Myriapora truncata* was taken alive from a depth of seventy fathoms: an *Alecto* was found creeping upon shells from one hundred and fifty fathoms; and an *Idmonea*, closely resembling a species found fossil in the English chalk, was taken abundantly in various depths between one hundred and one hundred and eighty fathoms, though never met with in shallow water.

Sponges are abundant in the Lycian sea. The more valued kinds are sought for about the Gulf of Macri, and along the Carian coast, and the opposite islands. Rhodes is the seat of one