

in question might probably solve by transferring some of the insects along with stones, sea-weed, and sea-water into capacious vessels, and then carefully watching their operations.

Another point worthy of inquiry is whether several other insects usually found on the sea-coast, and in particular some of the species of *Hesperophilus*, Hope, may not be submarine like the three noticed, and as Mr. Babington tells me he has reason to think is the case with the larvæ of some Dipterous insect.

And lastly, it would be well deserving of further investigation how far all these insects are constantly surrounded with an air-bubble, and whether there is ground for believing that it is alternately decomposed and renewed, as M. Audouin, agreeably to the theory of M. Dutrochet, supposes.

In laying before the Entomological Society the above hasty and imperfect remarks, one of my main objects is to give an example of those brief *notices* of any casual fact, observation, or suggestion occurring to any member in the course of his reading or studies, which though not sufficient either as to bulk or importance for a regular *paper*, may yet serve as the subject of interesting discussion at the close of each meeting, and which whether printed in the "Proceedings" of the Society, either in the form in which it is communicated or condensed into a few lines as may seem best to the Council, to whose discretion they should be wholly left, could not fail to convey information to many of the members, and to lead others to more extended inquiries relative to the points adverted to.

W. SPENCE.

May 20, 1835.

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XL. *Some Account of the Land-crabs of the Dukhun; by Lieut.-Col. W. H. SYKES, F.R.S., &c. With a Description of the Species, by J. O. WESTWOOD, F.L.S., &c.*

[Read June 1, 1835.]

THESE creatures, called *Kenkra* by the Mahrattas, abound along the Ghâts from 17° to 19° 23' N. latitude, the limits of my observation; but I have little doubt their location is extended very much further north and south in an oblique line running between the 73°

and 75° meridian. Their burrows are found in all the valleys, and on the most elevated table-lands at from 2000 to 5000 feet above the level of the sea, but I do not think they extend inland from the Ghàts (that is to say, to the eastward) above fifteen or twenty miles. They are also found along the base of the Ghàts in the country called the Korkun. In the abundant rains of the south-west monsoon, in the localities they affect, which appear to be determined by an aluminous soil, they are seen in a state of great activity, running over the surface, and frequenting the public roads in such numbers that instances are constantly occurring of their being crushed under the feet of horses and cattle, those of foot-passengers, or the wheels of vehicles. Their movements are active and lively, and they must have a quick perception of danger from the precipitation with which they retreat from it. During the months of extreme dryness, December, January, and February, they are rarely seen out of their holes, and I presume must either be in a dormant state or must derive nourishment from the soil in which they have imbedded themselves. As the moisture increases along the line of the Ghàts in March, April, and May,—and it increases in the ratios of the proximity of the location to the western edges of the Ghàts,—they reappear upon the surfaces, and in April and May, when the fogs produce a copious aqueous deposition, they are rather abundant. Indeed I found them not only numerous but troublesome; for being encamped in the hill-fort of Hurreechundurghur during those months and the month of March, the numerous servants who slept upon the ground were constantly disturbed by crabs invading their beds, and in my own tents they were frequently found under the bed, the tables and chairs; indeed all the specimens I have preserved, large and small, were intruders in this way. As they are met with of all sizes in their habitat, I have every reason to believe the productive processes to be completed without having recourse to migration to the sea-shore as is related of some other species of land-crab. Indeed had such been their habit it must have come under my notice, or that of some of the many intelligent observers of nature in Western India. The natives at least would have been aware of it; but such is not the case. My attention was first called to them on the 30th July, 1812, in a journey from Poona to Baroda. In a leisure moment I had an opportunity of watching from behind a rock in the Ghàts a crab collecting its food: the celerity and ease with which the two fore claws were used made them efficient substitutes for hands, and its rapid lateral movements at pleasure to either side, as objects attracted its attention, were very efficacious in enabling it to capture its prey, which appeared to me to be insects and animal

matters of various kinds. From this period I had been alive to all notices of the land-crab, and have no doubt had its habits been migratory I should have heard of them.

It may be as well to give the following extracts from my Journals to show my impressions at the moment regarding its localities and habits\*.

“CAMP AWPHA, (on the edge of the Ghâts,) Jan. 19, 1826.—Multitudes of the holes or burrows of the land-crab are seen about Awpha, at the level of 2888 feet above the sea. The creatures do not appear to come to the surface during the cold and dryness of this season of the year, but lie dormant at the bottom of their holes, which are pierced in a stiff whitish clay.

“CAMP HURREECHUNDURGHUR, March 31, 1829.—The table-land of this elevated hill-fortress, at 3900 feet above the sea, is inhabited by such multitudes of land-crabs, that their burrows render it unsafe to ride over many parts of the mountain.”

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**THELPHUSA CUNICULARIS, Westw.** Plate XIX. fig. 1—6.

*Thelph.* Testa piceo-nigra, latiore quam longiore clypeo marginato, antice, supra antennas intermedias, rectè truncato, maxillipedum externorum articulo 3tio subhexagono, pedibus ferrugineis fasciis numerosissimis nigris transverse notatis, testa in medio bipunctata.

Long. testæ unc. 1 lin. 4., lat. 1. 10 $\frac{1}{4}$ .

This species nearly approaches *Thelphusa indica*, Latr., Enc. Méth. x. 563., Guérin, Icon. R. An. Crust. pl. iii. fig. 3. The shell or carapax is considerably broader than long, and is much narrowed behind; it is uniformly of a dark chestnut black colour, and is nearly smooth. Its front part is considerably depressed. On each side, behind the eye, is a short tooth, and behind this the margin is slightly crenulated for about one third of the length of the margin, being in this part brought into a sharp edge. The sides are marked by numerous slight oblique gutters, which are very irregular and broken: a rather deep longitudinal impression extends longitudinally down the middle of the shell, for about one third of its length. Two oblique impressions extend from each lateral angle of the front of the

\* “All the grass through the Deccan generally swarms with a small land-crab, which burrows in the ground, and runs with considerable swiftness, even when encumbered with a bundle of food almost as big as itself; this food is grass or the green stalks of rice, and it is amusing to see the crabs sitting, as it were, upright to cut their hay with their sharp pincers, then waddling off with their sheaf to their holes as quickly as their sidelong pace will carry them.”—Extract from Bishop Heber’s Journal, communicated by W. Sells, Esq.

thorax, meeting together in the middle of the shell beyond the centre; within these impressions, on each side, are two small circular punctures. The first pair of legs are of unequal size, the left-hand claw being the larger; each is more strongly crenulated than the sides of the shell, the lower edge of the claw itself being notched; the upper angle of the wrist is produced into a point, accompanied by several smaller teeth. The tarsi are toothed both internally and externally. The front of the shell is deflexed so as almost to hide the base of the antennæ, the exterior pair of which is very small, and composed of only eleven joints, including the three large basal articulations; this pair of antennæ is inserted at the inner angle of the oral cavity. A straight and slightly elevated line runs from the base of the outer antennæ; this is succeeded by a very short transverse piece, with an entire posterior margin, having an obtuse tooth in the centre, which fits into the space left open by the curvature of the terminal joints of the external foot-jaws, which joints are very small; the third joint of these organs being somewhat hexagonal and much smaller than the 2nd joint, which is oblong. The claws are of the colour of the shell, but the basal joint of the first and the whole of the other legs are much paler-coloured, being of a dirty testaceous brown, with very numerous small transverse black marks.

The genus *Thelphusa* comprises several species of crabs whose habits differ considerably from those of the majority of the brachyurous *Crustacea*. The type, *Telph. fluviatilis*, resides, as the specific name implies, in the rivers and fresh waters of the South of Europe, and an interesting account is given of its economy in the 10th vol. of the 'Encyclopédie Méthodique.' It is eaten in summer by the Pope and Cardinals, and other high church dignitaries. It is also found in the rivulets of Mount Athos. M. Leschenault de Latour discovered another species, the *T. indica* of Latreille, on the coast of Coromandel, where it is called by the inhabitants of Malabar "Tille Naudon." It frequents situations where the "Manglier" grows; but in the 'Cours d'Entomologie' this species is also stated to have been found in the mountains of Ceylon, although it is not affirmed to reside out of water.

## PLATE XIX.

- Fig. 1. *Thelphusa cunicularis*, mag. nat.  
 2. Front of the body seen from beneath.  
 3. Interior antenna.  
 4. Exterior antenna.  
 5. Outer foot-jaw.  
 6. Abdomen of female.

