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On two new Species of Copepoda from Zanzibar.

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(Plate VI.)

So little is known of the Entomostraca of Africa, that I gladly availed myself of the opportunity of examining a portion of sandy mud, brought by Mr. Finn, of Brasenose College, Oxford, from the neighbourhood of Zanzibar, which was kindly supplied to me by Mr. F. E. Beddard.

The result of my search was rather disappointing, as I only succeeded in finding a few minute Copepoda, belonging to two species, which I now describe. Of these one is doubtfully a new species, being closely allied to *Cyclops orientalis*, Uljanin, from Turkestan. The other is a well-marked species of *Canthocamptus*.

In publishing a description of these two forms, I may take the opportunity of pointing out how much may be done by travellers and explorers in Africa in the matter of collecting freshwater Crustacea. These forms are easily collected and preserved, and from their generally minute size are easily carried. It is probable that the great lakes of the interior have a peculiar and interesting Crustacean fauna which would well repay collection. Those who have read Weismann's charming essay, 'Das Thierleben im Bodensee,' will recognize what a wide field of study is here open to the traveller and collector.

Fam. HARPACTIDÆ.

CANTHOCAMPTUS FINNI, n. sp. (Plate VI. figs. 1–7.)

Anterior antenna 9-jointed, the last joint very small; fourth joint bearing one long and one modified seta. Inner branch of 2nd antenna well developed, 1-jointed, bearing two terminal and two

lateral setæ. Mandible stout, the palp well developed, the basal joint produced in a sharp process, the outer joint bearing three terminal and one lateral seta. First pair of feet having the inner branch 3-jointed, the proximal and distal joints subequal in length, the middle joint rather more than half the length of the other two; all three joints denticulate on their outer margins. The outer branch reaches as far as the first third of the distal joint of the inner branch, and is provided with two terminal geniculate setæ and a stout external spine on each joint. Inner branch of the 2nd, 3rd, and 4th swimming-feet 2-jointed, the proximal joint minute; outer branch 3-jointed, each joint denticulate along its outer margin and bearing a powerful spine. Basal joint of the fifth pair of feet broad, the inner segment bearing four stout plumose setæ. The second joint ovate, somewhat elongate, bearing three plumose terminal setæ and three external marginal spines, of which the middle is twice the length of the other two. Posterior margin of the first abdominal segment strongly denticulate dorsally, the two succeeding segments denticulate ventrally. Furca short; caudal setæ minutely aculeate and half as long as the whole body.

This is a well-marked species, agreeing with *C. northumbricus* and *C. trispinosus* in the characters of the 2nd, 3rd, and 4th swimming-feet, which are two-jointed, and in the nine-jointed first antennæ; but differing from both in the form of the mandible-palp, in the inner branch of the second antennæ, in the proportions of the first pair of swimming-feet, and in the characters of the fifth pair of feet of the female.

Fam. Cyclopidæ.

Cyclops africanus, n. sp. (Plate VI. figs. 8–11.)

Cephalothorax ovate, evenly rounded in front. The first and second free thoracic segments of equal length, the third about two-thirds the length of the two preceding segments. Abdomen long and narrow, its length, not including the furca, equal to the four free thoracic segments. The first abdominal segment in the female long, equal in length to the three succeeding segments. The last abdominal segment finely denticulate on its posterior margin. Furcal segment equal in length to last two abdominal segments. Of the caudal setæ the two outermost are short, the internal median seta very long, equal in length to the whole abdomen and the last two thoracic segments.

The first antennæ of the female 12-jointed, rather shorter than the first joint of the cephalothorax. First antennæ of the male 14-jointed, the basal joint equal in length to the next six joints. Hinge-joints between the 7th and 8th and 12th and 13th joints; the 9th to the 11th joints inclusive swollen. Mandible-palp consisting of a well-developed basal piece bearing two long and one short seta. Maxillæ, maxillipeds, and swimming-feet as in *C. orientalis*. Fifth pair of feet rudimentary, resembling those of *C. orientalis*.

I have much hesitation in separating this species from *C. orientalis*, Uljanin, from which it differs chiefly in the proportions of the abdominal segments, in the size of the third free thoracic segment, which is larger than in *C. orientalis*, and in the size of the fused head and first thoracic segment, which in *C. orientalis* is equal in length to the four free thoracic segments and the first abdominal segment, while in *C. africanus* it is much shorter. I have not been able to find a female carrying ova, but the specimen from which the description is taken had its ovaries full of ripe ova.

The single male specimen I found was apparently mature. It differs markedly in the jointing and in the proportions of the antennæ from Uljanin's figure, which is very probably taken from an immature specimen.

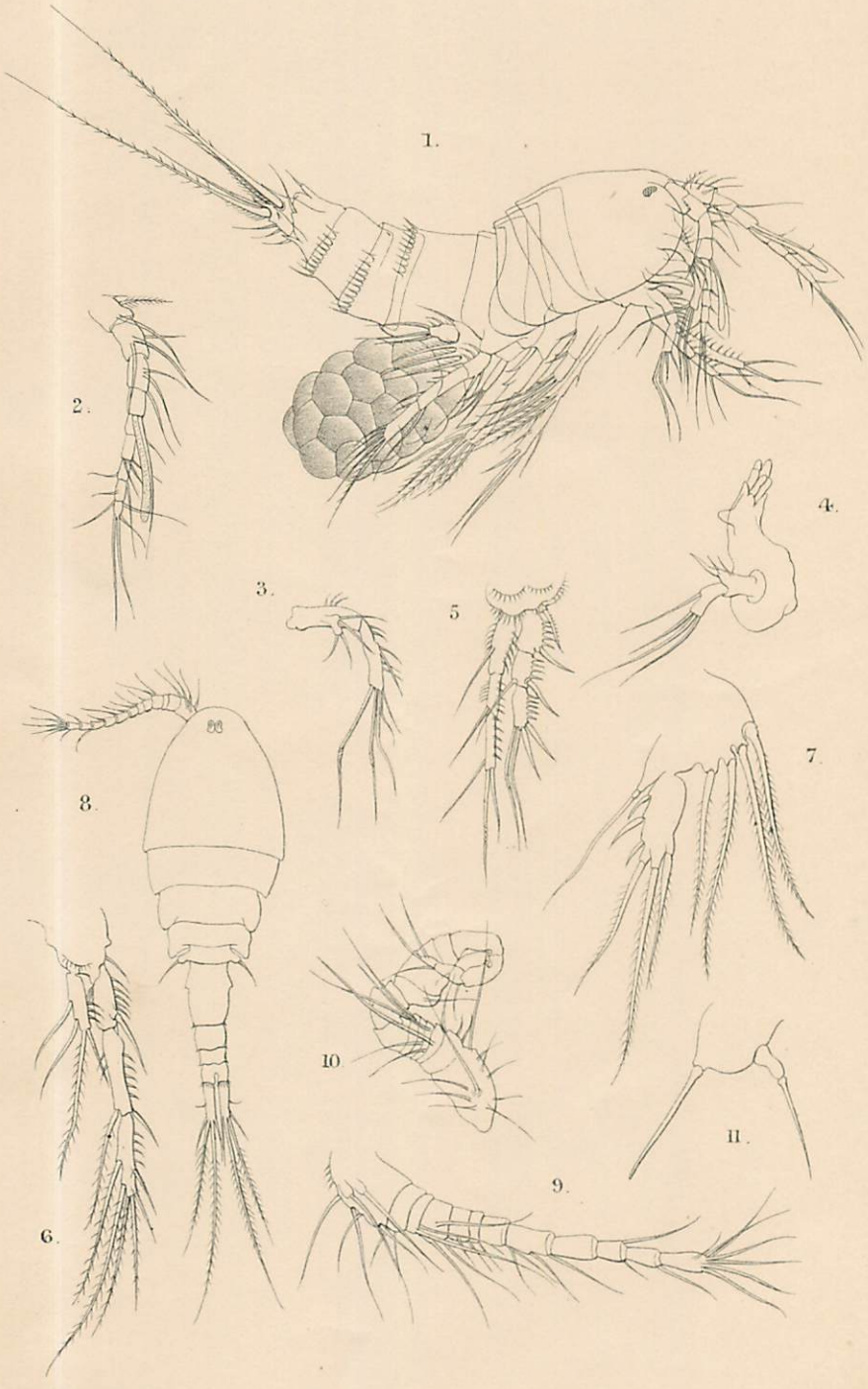
EXPLANATION OF PLATE VI.

Canthocamptus finni, p. 164.

Fig. 1. Lateral view of female.
2. First antenna of female.
3. Second antenna.
4. Mandible.
5. First swimming-foot.
6. Fourth swimming-foot.
7. Fifth foot of female.

Cyclops africanus, p. 165.

Fig. 8. Female, viewed from above.
9. First antenna of female.
10. First antenna of male.
11. Fifth foot.



J. Smit lith.

Mintern Bros. imp.

NEW COPEPODA FROM ZANZIBAR.