sidered heavily polluted, there are areas of the lagoon under environmental stress, and the river can by no means be considered fast-flowing. It is to be hoped that *C. bocourti* is not a harbinger of future hydrological conditions in the Indian River.

The following measurements of our specimen are provided for purposes of comparison by future workers. Carapace width, 129.5 mm; carapace length, 65.3 mm; carapace width to anterior base of lateral spine, 107.7 mm; intra-median region anterior width, 24.6 mm; posterior width of same, 12.2 mm; length of same, 13.0 mm; frontal orbital width, 52.1 mm; frontal width, 16.6 mm.

The specimen has been deposited in the National Museum of Natural History, USNM 149178.

**LITERATURE CITED**


Received for publication 20 November 1973.

**NOTES ON CARIDEA FROM LAKE RUDOLF, EAST AFRICA (DECAPODA, NATANTIA)**

**BY**

D. I. WILLIAMSON

Marine Biological Station, Port Erin, Isle of Man, British Isles

Lake Rudolf has no visible outlet and its waters are rather brackish. Gordon (1933) reported the occurrence in this lake of *Macrobrachium niloticum* (P. Roux) (Palaemonidae) but remarked on the apparent absence of *Cardina nilotica* (P. Roux) (Atyidae), which is common in most East African lakes. Plankton from two localities in the lake, collected recently by Dr. Jane Hopson, has, however, been found to contain both *M. niloticum* and *C. nilotica*. Adults, juveniles and larvae of both species were found together in Allia Bay in March 1972 and in the waters round Central Island in September 1972.

Gordon (1933) showed that the race of *M. niloticum* found in Lake Rudolf

*Crustaceana* 27 (3), 1974, E. J. Brill, Leiden
differs from the typical Nile form in the relative proportions of parts of the
two chelate appendages. Williamson (1972) found that specimens from Lake
Chad could also be distinguished on the same characters and regarded each of
the three areas as containing a separate subspecies. It was suggested that the
number of ventral rostral teeth may provide a more convenient distinguishing
character, but the examination of further specimens from Lake Rudolf has shown
that some modification of this suggestion is necessary. The presence of 3 ventral
teeth in the great majority of mature specimens from Lake Chad effectively
separates this subspecies, but the majority of ovigerous females in the recent
collections from Lake Rudolf resemble those from the Nile in having two ventral
teeth. The Lake Rudolf specimens described by Gordon (1933) and re-examined
by Williamson (1972) have only one ventral tooth.

Larvae of M. niloticum from Lake Rudolf differ slightly from those from
Lake Chad in stage I in having a small median indentation in the posterior margin
of the telson. No other larval differences were noted, except that, of two speci-
mens in the last zoal stage from Lake Rudolf, one has a small posterior spine on
each pleuron of the 5th abdominal somite. This spine is absent in the second
specimen and in all specimens from Lake Chad.

Gordon (1930) showed that throughout East Africa "there is a vast assemblage
of slight local deviations from...... C. nilotica var. typicad" from the lower Nile,
and she gave tables of relative proportions to illustrate this. In the large lakes
Albert and Victoria she found two distinct forms, one in shallow water, not
differing greatly from Nile specimens, and the other in open water, with the
rostrum and both pairs of chelae much more slender. The available specimens
from the two localities in Lake Rudolf all show a general resemblance to the
shallow water forms from the other lakes. The rostrum is 1.1 to 1.2 times the
length of the carapace, almost straight, with considerably more dorsal than
ventral spines, and 0 to 30% (exceptionally 40%) of the dorsal surface without
spines. The proportions of chelipeds 1 and 2 respectively are: length of carpus/
breadth 1.8-2.4 and 3.4-5.0, length of finger/length of palm 1.0-1.3 and 1.0-1.6,
length of chela/length of carpus 1.3-1.6 and 0.8-1.3. Ova measure 0.55-0.60 ×
0.35-0.40 mm.

Gurney (1927) described zoal stages I to III of C. nilotica from a freshwater
lagoon at Ismailia, Egypt. These hatched from larger eggs than those found in
Lake Rudolf, but the stage I larvae from the two localities agree in having func-
tional exopods confined to the maxillipeds and first pair of legs. The rudiments
of legs 2 to 4 are much smaller in specimens from Lake Rudolf and those of the
fifth pair have not yet appeared. Gurney estimated that the Ismailia population
passes through 5 zoal stages. Probably most specimens from Lake Rudolf pass
through 7 zoal stages but a minority metamorphose after 6 or 8.

Gurney's specimens in stage III had functional exopods on legs 1 to 3 and
minute rudiments on legs 4 and 5. He later (1942) assumed that these rudiments
never develop, but even if this is correct for the Ismailia population it does not