NOTES AND NEWS

TWO LESSEPSIAN MIGRANT DECAPODS NEW TO THE COAST OF ISRAEL

BY

BELLA S. GALIL

Israel Oceanographic & Limnological Research, National Institute of Oceanography, P.O.B. 8030, Haifa 31080, Israel

Since the opening of the Suez Canal, hundreds of Red Sea species invaded the Levant (Por, 1978, 1989), bringing about a profound change in the local fauna. Decapods are conspicuous among the migrants, and to date 30 species found off the Mediterranean coast of Israel are considered to have entered from the Red Sea through the Suez Canal (Holthuis & Gottlieb, 1958; Lewinsohn & Holthuis, 1964; Galil, 1992).

During the monitoring of a sewage sludge outlet off the central coast of Israel, a site sampled annually for a decade, a second species of *Metapenaeopsis*, an Indo-Pacific genus only recently recorded for the first time from the Mediterranean (Galil & Golani, 1990), was found. *Eucrate crenata*, collected both at the sewage site and in Haifa Bay, is another striking example of the dynamic nature of Lessepsian migration.

Metapenaeopsis mogiensis consobrina (Nobili, 1904)

Metapenaeus consobrinus Nobili, 1904: 229; 1906b: 7, 17, pl. 1 fig. 3.
Metapenaeus perlarum Nobili, 1905: 158; 1906a: 17, pl. 2 figs. 1, 1a-d.
Penaeopsis mogiensis — Balss, 1915: 10, figs. 6, 7; Pesta, 1915: 104; Balss, 1929: 25.
Metapenaeopsis distincta — Zarenkov, 1971: 159, fig. 64.
Metapenaeopsis velutina — Zarenkov, 1971: 159, fig. 65 (part).
Metapenaeopsis mogiensis consobrina — Crosnier, 1991: 214, figs. 34a-c, 36, 37g-n, 38c, 39.

Material examined. — Off Palmahim, depth 35 m, sandy-mud bottom, 1.ix.1996, coll. B. Galil, 3 males 11.2-12.2 mm carapace length; 5 females 11.4-12.8 mm carapace length (TAU).

Remarks. — The specimens from the Israeli coast fit the well-illustrated description given by Crosnier (1991). Their colour in life is whitish, irregularly mottled with dull reddish wavy markings on abdomen. *Metapenaeopsis mogiensis consobrina* is widely distributed in the Indian Ocean, from the Red Sea and

the east coast of Africa to Indonesia. It is known to occur in the Gulf of Suez (Balss, 1915; Zarenkov, 1971) but has not been recorded from the Suez Canal or the Mediterranean.

The sites where the specimens of *M. mogiensis consobrina* were collected have been sampled intensively since 1978, being in the vicinity of the Dan region sewage sludge outlet (Galil & Lewinsohn, 1979, 1981). *Trachypenaeus curvirostris* (Stimpson, 1860), first recorded from the Mediterranean in 1929 (Steinitz, 1929, as *Metapenaeus* sp. fide Holthuis & Gottlieb, 1958), was in the late seventies the most common penaeid shrimp collected at 35 m at Palmahim (Galil & Lewinsohn, 1981). A decade later the first specimens of *Metapenaeopsis aegyptia* Galil, 1990 were collected there (Galil & Golani, 1990). Within a couple of years, *M. aegyptia* formed a thriving population, whereas the numbers of *T. curvirostris* decreased. During the last sampling, in September 1995, *M. aegyptia* replaced *T. curvirostris*, and the new migrant, *M. mogiensis consobrina*, established a toehold in the Mediterranean. It is tantalizing that *M. vaillanti* (Nobili, 1904), whose type locality is Suez, and which was collected in the Great Bitter Lake as early as 1950 (Holthuis, 1956), has not yet been recorded from the Mediterranean.

Eucrate crenata (De Haan, 1835)

Eucrate crenata Calman, 1927: 214; Fox, 1927: 218; Balss, 1936: 42; Monod, 1937: 4; 1938: 144; Tortonese, 1947: 44; 1952: 4; Holthuis, 1956: 321; Holthuis & Gottlieb, 1958: 118; Ramadan & Dowidar, 1972: 133 (list); Enzenross et al., 1990: 292 (list); Enzenrou et al., 1992: 5; Galil, 1992: 117 (list).

Material examined. — Haifa Bay, Kiryat Haim, 1-2 m, sand, 19.xi.1994, coll. M. Mendelsohn, 9 males 1.1-15.7 mm carapace length; 2 females 11.2, 13.8 mm carapace length (TAU); off Palmahim, 35 m, sandy-mud bottom, 1.ix.1995, coll. B. Galil, 2 males 11.4, 18.0 mm carapace length (TAU).

Remarks. — *Eucrate crenata* is widely distributed throughout the Indo-West Pacific Region, from the Red Sea to Australia and Hawaii (Serène, 1968). It has been reported from the Bitter Lakes, Lake Timsah and Port Said (Calman, 1927; Fox, 1927), where Tortonese (1952) found it "A very common crab" in 1944-45. Balss (1936) reported it from Alexandria. In 1987 a single specimen was collected near Mersin, Turkey, and later, several specimens were collected off Adana (Enzenrou et al., 1992). An early winter storm in 1994 swept ashore hundreds of *E. crenata* specimens on the Israel coast: a surprising number for a first record. It is a quick-burrowing species, found on sand from the intertidal to 35 m. The finely speckled carapace, purple on cream, with its two prominent, hepatic marks, affords camouflage on sandy bottoms.

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RESTING EGGS IN THE LIFE CYCLE OF *ACARTIA ITALICA* AND *A. ADRIATICA* (COPEPODA, CALANOIDA, ACARTIIDAE)

BY

GENUARIO BELMONTE

Dipartimento di Biologia, Stazione di Biologia Marina di Porto Cesareo, Università degli Studi, via Prov.le Lecce-Monteroni, I-73100 Lecce, Italy

INTRODUCTION

Calanoids of the family Acartiidae are very abundant in coastal sea-waters where, at temperate latitudes, they can be absent from the plankton during the adverse season. The literature suggests that the Acartiidae pass unfavourable periods commonly as resting eggs (Uye, 1985; Sullivan & McManus, 1986; Naess, 1991; Belmonte, 1992; Viitasalo, 1992; Belmonte & Puce, 1994).

The present note is the first report of resting eggs in the life cycle of *Acartia italica* Steuer, 1910, and *A. adriatica* Steuer, 1911, two species endemic to the