

MLN

**THE INDO-PACIFIC LOBSTER *PANULIRUS ORNATUS*  
(CRUSTACEA: DECAPODA): A NEW LESSEPSIAN MIGRANT  
TO THE EASTERN MEDITERRANEAN**

B. GALIL<sup>1</sup>, S. PISANTY<sup>2</sup>, E. SPANIER<sup>3</sup> AND M. TOM<sup>4</sup>

<sup>1</sup>*Institute of Nature Conservation Research, George S. Wise Faculty of Life Sciences,  
Tel Aviv University, 69978 Tel Aviv, Israel;* <sup>2</sup>*Fisheries Technology Unit, Department of  
Fisheries, Ministry of Agriculture, P.O. Box 584, 26117 Qiryat Motzkin, Israel;*

<sup>3</sup>*Center for Maritime Studies and Department of Maritime Civilizations,  
Haifa University, 31999 Haifa, Israel;* and <sup>4</sup>*Israel Oceanographic and  
Limnological Research, P.O.B. 8030, 31080 Haifa, Israel*

An ornate spiny lobster, *Panulirus ornatus* (Fabricius, 1798), was collected in January 1988 in the port of Haifa, Israel, the first account of the species from the Eastern Mediterranean. The species is widely distributed in the Indo-Pacific ocean and reaches its known northernmost limits along the central Red Sea (Holthuis, 1968). Although not yet recorded from the northern Red Sea, most probably it entered the Mediterranean through the Suez Canal, and represents the most recent entry in a long list of Indo-Pacific species which have become established in the Levant (Por, 1978). An ever growing number of decapod crustaceans belongs to these lessepsian migrants that form the characteristic feature of the fauna along the Israeli Mediterranean coast (Holthuis and Gottlieb, 1958; Lewinsohn and Holthuis, 1964; Galil, 1986).

*Panulirus ornatus* (Fabricius, 1798)

Fig. 1

*Panulirus ornatus* Fabricius, 1798:400.

*Panulirus homarus* Nobili, 1906:90.

*Panulirus ornatus* Holthuis, 1946:138 pl. 7 fig. i, pl. 9 fig. d; Ben-Tuvia, 1963:23;  
1968:51; Holthuis, 1968:286.

*Panulirus penicillatus* Lewinsohn, 1983:202 pl.

*Material*

Haifa Port, Haifa Bay, 31 January 1988. Caught by trammel net near outer base of breakwater, 8 m depth, coll. S. Pisanty. 1 o. Carapace length 66 mm, total length 173 mm (TAU 26830).

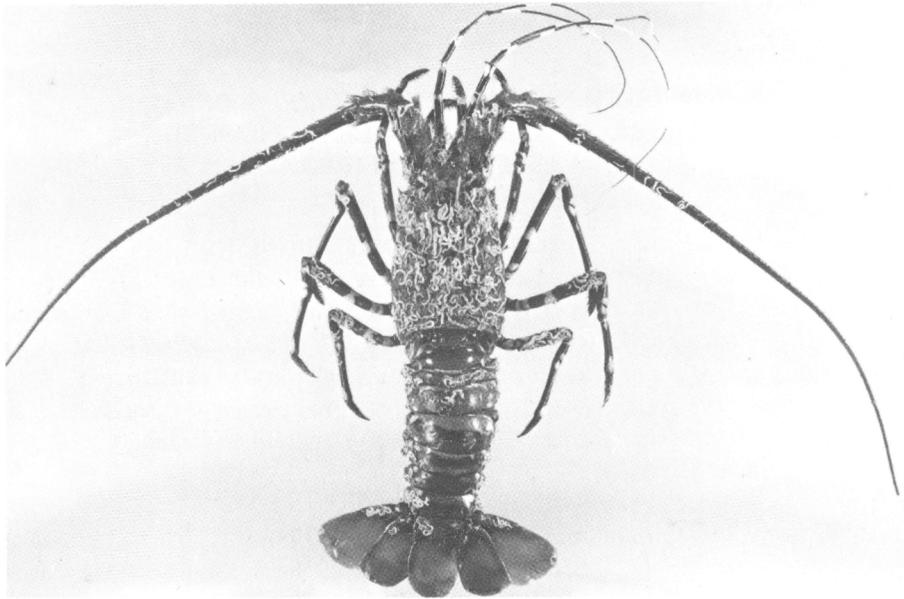


Fig. 1. *Panulirus ornatus* (Fabricius), ♂, Haifa Bay, Israel (TAU 26830).

#### Description

Carapace subcylindrical, tuberculate, spinose. Supraorbital spines long, curved. Antennular flagella longer than segmented peduncle. Antennae longer than body, spinose. Antennular plate bearing two pairs of spines, anterior pair twice as large as posterior. Abdominal segments lacking transverse groove. Pereiopods with curved, pointed dactyls.

Colour (freshly frozen): Upper surface of carapace greenish-grey, spines yellow-orange, tips dark. Front with fine, cream-coloured vermicular lines extending to antennal peduncle. Supraorbital spines violet-brown, flecked with cream on upper surface, underside pale. Abdominal segments with transverse brown bands medially, extending on fifth segment to posterior border. On second, third, fourth and fifth segments an oblique, pale mark laterally on median band, appearing as a faint smudge on fifth segment. Median band bordered laterally with a pale oval spot. Antennules blue, ringed with cream. Antennular peduncles dark blue with cream vermiculations. Telson, uropods and pelopods brown. Pereiopods dark blue with large irregular cream-coloured spots.

#### Remarks

*Panulirus ornatus* is widely distributed throughout the Indo-West Pacific region, but has only been collected twice in the Red Sea. Holthuis (1968) reported three specimens from Jidda collected by J.A. Kruyt in 1882, and a single specimen from material acquired from fishermen at Massawa. A record from Obock in the Gulf of Aden was furnished by Nobili (1906).

From the point of view of distribution it is interesting that seasonal migrations have been observed in this species. Moore and Macfarlane (1984) recorded members of this species walking across the sea bed for 2–3 months, at an average speed of 6.1 km day<sup>-1</sup>, to a distance of 511 km.

*P. ornatus* inhabits shallow coastal waters and apparently prefers turbid conditions (George, 1968). Presumably the ability of the species to actively migrate from the Red Sea is high, and, due to the similarities of the required environmental conditions, it would appear as a likely candidate for Lessepsian migration.

## REFERENCES

- Ben-Tuvia, A. 1963. Fisheries investigations of the Israel South Red Sea Expedition. Fishermen's Bulletin, Haifa 32:3–26. (in Hebrew, English summary.)
- Ben-Tuvia, A. 1968. Report on the fisheries investigation of the Israel South Red Sea Expedition, 1962. Bulletin, Sea Fisheries Research Station, Haifa 52:21–55.
- Fabricius, J.C. 1798. Supplementum Entomologiae Systematicae, 572 p.
- Galil, B. 1986. Red Sea decapods along the Mediterranean coast of Israel: ecology and distribution. In: Environmental Quality and Ecosystem Stability, Z. Dubinsky and Y. Steinberger, eds. 3:179–183. Bar Ilan University Press, Ramat Gan.
- George, R.W. 1968. Tropical spiny lobsters, *Panulirus* spp. of Western Australia (and the Indo-West Pacific). Journal of the Royal Society of Western Australia 51(2):33–38.
- Holthuis, L.B. 1946. The Stenopodidae, Nephropsidae, Scyllaridae and Palinuridae. The Decapoda Macrura of the Snellius Expedition. I. Biological Results of the Snellius Expedition. 14. Temminckia 7:1–178, pls. 1–11.
- Holthuis, L.B. 1968. The Palinuridae and Scyllaridae of the Red Sea. Zoologische Mededelingen, 42:281–301, 2 pls.
- Holthuis, L.B. and E. Gottlieb. 1958. An annotated list of the decapod Crustacea of the Mediterranean coast of Israel, with an appendix listing the Decapoda of the Eastern Mediterranean. Bulletin of the Research Council of Israel, 7B, 1–126.
- Lewinsohn, Ch. 1983. Aquatic life. In: Plants and Animals of the Land of Israel. A. Alon, ed., Vol. 4, L. Fishelson, ed. pp. 200–209.
- Lewinsohn, Ch. and L.B. Holthuis. 1964. New records of decapod Crustacea from the Mediterranean coast of Israel and the Eastern Mediterranean. Zoologische Mededelingen, 40:45–63.
- Moore, R. and J.W. Macfarlane. 1984. Migration of the ornate rock lobster *Panulirus ornatus* (Fabricius) in Papua New Guinea. Australian Journal of Marine and Freshwater Research 35:197–212.
- Nobili, G. 1906. Faune carcinologique de la Mer Rouge. Décapodes et Stomatopodes. Annales des Sciences Naturelles Zoologie, 9 ser., 4:1–247, pl. 1–11.
- Por, F.D. 1978. Lessepsian Migration. The influx of Red Sea biota into the Mediterranean by way of the Suez Canal. Springer-Verlag, New York, 228 p.

---

# Mammal Review

## Editors

**D.W. Yalden** PhD, *Department of Zoology, University of Manchester, Manchester M13 9PL, U.K.*

**G.R. Hooley** PhD, *Department of Psychology, Bolton Institute of Higher Education, Bolton BL3 5AB, U.K.*



*Mammal Review* is an official publication of the Mammal Society, dedicated to the promotion of mammalian studies. It is not intended for the publication of the results of original research but rather as a secondary journal, carrying reviews of, and reports on, any aspect of mammalogy. It also serves to report the proceedings of the Society's Symposia, which again are of a review nature.

Nowadays there are relatively few people who study a taxonomic group *per se*; many more become interested in the groups through the pursuit of one of the sub-disciplines such as ecology, behaviour, anatomy, physiology, genetics, etc. The journal therefore has an interdisciplinary nature and is intended for a wide readership, both amateur and professional. Contributions which promote the dissemination of knowledge of mammals or encourage their study are invited, particularly those which describe work in progress in the various disciplines and which help to bridge interdisciplinary gaps. Reports on the status and distribution of mammalian species are also welcomed.

## Subscription Information

*Mammal Review* is published quarterly. Subscription rates for 1987 are £38.00 (UK), \$79.50 (USA, Canada & Japan), £45.50 (elsewhere) post free.

## Order Form

Please tick the appropriate box and return to Blackwell Scientific Publications Ltd, P.O. Box 88, Oxford, England.

- I would like to subscribe to *Mammal Review*  
 I wish to pay by cheque/money order *(delete as necessary)* and enclose the sum of .....  
 I wish to pay by Access Barclaycard/VISA/Mastercard *(delete as necessary)*

Please debit my credit card no.

Expiry date ..... with the sum of .....

Signature ..... Date .....

- Please send me a specimen copy of *Mammal Review*

Name .....

Address .....

**Blackwell Scientific Publications**

*P.O. Box 88, Oxford, England*