FIRST RECORD OF THE INDO-PACIFIC PARROT FISH *SCARUS GHOBBAN* IN THE EASTERN MEDITERRANEAN

by

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RÉSUMÉ. - Premier signalement d'un poisson-perroquet de l'Indo-Pacifique, *Scarus ghobban* en Méditerranée orientale.

Un spécimen de *Scarus ghobban* de 505 mm. TL a été capturé en octobre 2001 au large de la côte de Shiqmona, près d'Haïfa (Israël). C'est le premier signalement de cette espèce tropicale en Méditerranée et le premier migrant lessepsien de la famille des Scaridae. Cette découverte augmente le nombre des poissons migrants lessepsiens à 57.

Key words. - Scaridae - *Scarus ghobban* - MED - First record.

The opening of the Suez Canal connected the tropical Red Sea with the warm-temperate Eastern Mediterranean and enabled the invasion of tropical fauna into the Mediterranean and vice versa. The exchange of fauna between the two seas, however, was unbalanced. Whereas more than 300 Red Sea species (fish and invertebrates) have been reported from the Mediterranean, only about fifty Mediterranean species have been reported from the Red Sea (Ben Tuvia, 1971; Tortonese, 1974; Por, 1978; Goren and Klausewitz, 1978). Goren and Galil (1998), who reported the finding of *Abudefduf vaigiensis*, brought the number of fish of Red Sea origin to fifty six.

Since mid-2000, oral reports of the presence of a large, colorful Indo-Pacific parrotfish among the rocky ridges off Shiqmona (Fig. 1) were received from spear fishermen, but it was not until in October, 2001 that we managed to obtain a specimen of the new invader for identification and documentation.

SCARUS GHOBBAN

(Fig. 2)

Material

1 specimen, 435 mm SL, 505 mm TL, deposited in Tel Aviv University fish collection (TAU, 12637), col. M. Ruimi; locality: ca. 2.5 km. off the coast of Shiqmona, at a depth of 12 m; 20 October 2001.

Diagnosis

A *Scarus* species with 24 series of scales along the body. The last scale enlarged and trianglular. Number of scales from dorsal fin origin to lateral line: 2.5, and 6.5 scales from the lateral line to mid belly. Six predorsal scales. Three rows of scales on cheek, the lower row has a single scale. The first scale behind pectoral fin is enlarged. Dorsal fin: IX,10. Anal fin: III,9; Pectoral fins: 16. Second nostril oval, larger than the anterior one.

Color pattern

Scales on body turquoise blue with brown margins; lower part of body brownish. Head brownish with turquoise blue irregular bands. The upper rays in pectoral and pelvic fins turquoise blue; fin with lower and upper margins turquoise blue and middle longitudinal band reddish brown; upper dorsal fin and 2/3 of the lower part of the rays turquoise blue, while membrane between the rays and the rest of the fish brownish.

The distribution of *Scarus ghobban* Forsskål, 1775 is very broad, from the tropical western coast of America to the eastern coast of Africa, including the Red Sea (Randall, 1986; Humann and Deloach, 1993). This species inhabits a wide variety of habitats. It is observed in and around coral reefs (to depth of 35 m).

This is the first record of *S. ghobban* from the Mediterranean and the first Lessepsian immigrant of the family Scaridae, which previously was represented in the Mediterranean by only a single species, *Sparisoma cretense* (Linnaeus, 1758) (Quignard and Pras, 1986; Golani, 1996). *S. cretense*, which can reach a size of 50 cm, is not very common along the Israeli coast and is usually represented by fish shorter than 25 cm. The invasion of this species into the Mediterranean may signal a new era in the trophic relationship among the various components in the rocky habitats of the eastern Mediterranean. The first fundamental change in the trophic web in this region took place when the two herbivore siganid species, *Siganus luridus* (Rüppell, 1828) and *S. rivulatus* (Forsskål, 1775), established their populations. These two species, which now comprise about one third of the fish biomass of the rocky littoral (Goren and Galil, 2001), also constitute over 95% of the biomass of the herbivore fishes in this habitat. Prior to the appearance of siganid fishes on the scene, the role of herbivore fish in the rocky littoral was negligible. The appearance of the new parrotfish, which feeds by scraping algae from rocks (Humann and Deloach, 1993), and can reach a length of 90 cm, adds a considerable consumer of algae feeders to this region. Furthermore, *S. ghobban*, due to its size and habit of forming feeding schools in shallow water, as well as its ability to scrape the rocks, is expected to affect

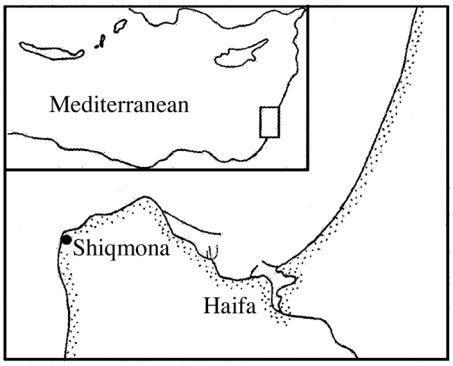

Figure 1. - Map of Shiqmona region.

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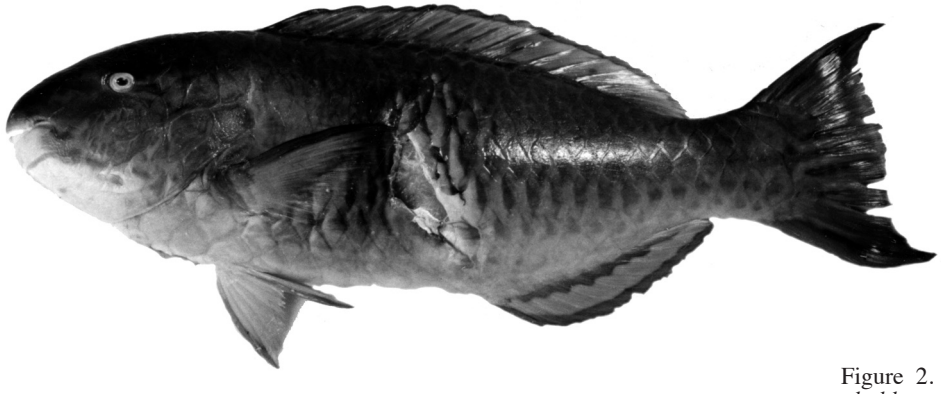

Figure 2. - The specimen of *Scarus ghobban* (TAU-12637) cought off Shiqmona.

both the vermetid reef of Shiqmona (by crushing and consuming the vermetids) and the amount of floral material that passes through the digestive system of fishes in the rocky coast of the eastern Mediterranean.

Acknowledgments. - We are grateful to A. Shoob (Tel Aviv University) for the photograph of the fish and to N. Paz (Tel Aviv University) for editing the manuscript.

REFERENCES

BEN TUVIA A., 1971. - On the occurrence of the Mediterranean serranid fish *Dicentrachus punctatus* (Bloch) in the Gulf of Suez. *Copeia,* 1971: 741-743.

GOLANI D., 1996. - The marine ichthyofauna of the eastern Levant - History, inventory and characterization. *Isr. J. Zool*., 42: 15-55.

GOREN M. & B.S. GALIL, 1998. - First record of the Indo-Pacific, coral reef fish *Abudefduf vaigiensis* (Quoy & Gaimard, 1825) in the Levant. *Isr. J. Zool*., 44 :57-59.

GOREN M. & B.S. GALIL, 2001. - Fish biodiversity in the vermetid reef of Shiqmona (Israel). *Mar. Ecol*., 22(4): 369-378.

GOREN M. & W. KLAUSEWITZ, 1978. - Two Mediterranean gobiids new in the Red Sea (Pisces, Gobiidae). *Senck. Biol*., 59: 19-24.

HUMANN P. & N. DELOACH, 1993. - Reef Fish Identification. Galapagos. 267 p. Florida: New World Publications Inc.

POR F.D., 1978. - Lessepsian Migration - The influx of Red Sea Biota into the Mediterranean by Way of the Suez Canal. 278 p. Berlin: Springer-Verlag.

QUIGNARD J.-P. & A. PRAS, 1986. - Scaridae. *In:* The Fishes of the Northeastern Atlantic and the Mediterranean, vol. 2 (Whitehead P.J.P., Bauchot M.-L., Hureau J.-C., Nielsen J. & Tortonese E., eds), pp. 943-944. Paris: UNESCO.

RANDALL J.E., 1986. - Scaridae. *In:* Smiths' sea fishes (Smith M.M. & Heemstra P.C., eds), pp. 706-714. Johannesburg: Macmillan South Africa.

TORTONESE E., 1974. - Mediterranean fishes in the Indian Ocean. *J. Mar. Biol. Ass. India*, 14: 480-486.

Reçu le 10 janvier 2002.
Accepté pour publication le 11 juin 2002.