

RASTRELLIGER KANAGURTA, ANOTHER RED SEA IMMIGRANT INTO
THE MEDITERRANEAN SEA, WITH A KEY TO THE MEDITERRANEAN
SPECIES OF SCOMBRIDAE

by

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The recent capture of a specimen of *Rastrelliger kanagurta* (CUVIER) at Haifa adds another species to the growing list of fishes which have traversed the Suez Canal from the Red Sea to the Mediterranean Sea. This brings to 27 the number of species of Red Sea immigrants (24 species in BEN-TUVIA, 1966; plus *Scomberomorus commerson* (Lac.) reported by GEORGE and ATHANASSIOU, 1965; and *Tylosurus chorum* (RÜPPELL) reported by COLLETTE and PARIN, in press) and to 13 the number of species of Scombridae known from the Mediterranean (11 species in TORTONESE, 1963), plus *S. commerson*).

The specimen of *Rastrelliger kanagurta* (Fig. 1) was collected by Mrs. RUTH LANDAU at Haifa, Israel, on 7 Nov. 1967. It is catalogued as Hebrew University No. F-4108. It is 230 mm fork length and 215 mm standard length. The sex is not determinable due to poor preservation of the internal organs.

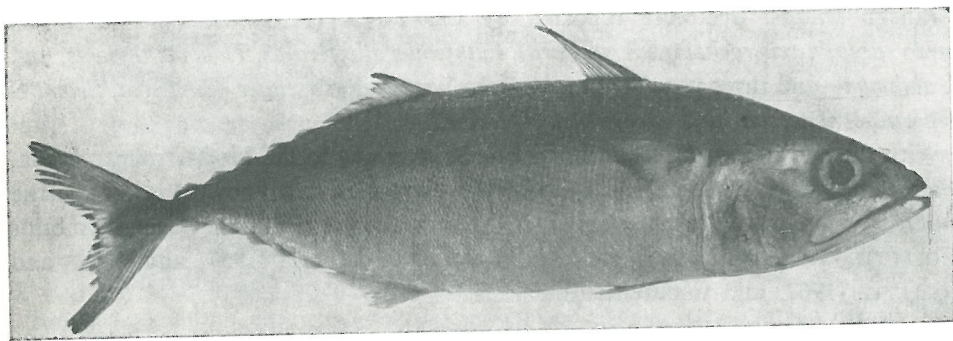


Figure 1

The specimen agrees with the characters that differentiate *Rastrelliger* from *Scomber*, the only genus with which it is likely to be confused (MATSUI, 1967: table 4), e.g.: no teeth on vomer or palatines; last branchiostegal ray expanded and plate-like; 11 interneural bones under the first dorsal fin instead of 12-28; first heamal spine hook-shaped. A radiograph shows its agreement with the diagram of the arrange-

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ment of interneural and interhaemal bones given by MATSUI (1967: fig. 7); 11 interneural bones under the first dorsal fin, 12 under the second dorsal fin plus 6 under the dorsal finlets; 12 interhaemal bones over the anal fin plus 6 over the anal finlets. A slight difference from the average representation given by MATSUI (Fig. 7) is the presence of one interneural bone between the 17th and 18th vertebrae and two interneurals between the 18th and 19th vertebrae instead of vice versa.

The specimen matches the description of *Rastrelliger kanagurta* rather than *R. brachysoma* (BLEEKER) or *R. faughni* MATSUI: gill-rakers $18 + 39 = 57$; number of bristles on one side of longest gill-raker — about 210; body depth at posterior margin of opercle 49.2 mm or 4.4 times in standard length; head length (63.1 mm) distinctly longer than maximum body depth (57.0 mm). MATSUI gave counts of bristles on the longest gill-raker only for specimens 120, 150, and 180 mm standard length. Extrapolating the counts for 215 mm standard length gives about 200 bristles for *R. kanagurta* and 290 for *R. brachysoma*. MATSUI has informed me (personal communication) that two larger *R. brachysoma* (261 and 267 mm SL) had 330 and 328 bristles respectively and a larger *R. kanagurta* (227 mm specimen from the Red Sea) had 235 bristles. The length of the intestine could not be measured accurately because the internal organs were not well-preserved. It did not appear to be much longer than the standard length, however, ruling out *R. brachysoma*.

Other meristic data: pectoral fin rays 19 on each side; dorsal fin rays IX + 12 + 5 finlets; anal fin rays 12 + 5 finlets; vertebrae $13 + 18 = 31$.

R. kanagurta is wide-spread in the Indo-West Pacific from Samoa and Australia to the Red Sea. The present specimen agrees in all details with two Red Sea specimens of *Rastrelliger kanagurta* (USNM 250258-F4).

At least 9 of the 13 Mediterranean species of Scombridae occur in Israeli Mediterranean waters. Six were reported by BEN-TUVIA (1953)—*Scomber japonicus*, *Sarda sarda*, *Auxis rochei* (as *A. thazard*), *Euthynnus alletteratus*, *Thunnus thynnus*, and *T. alalunga*—and three were sent to me from Israel—*Rastrelliger kanagurta*, *Scomberomorus commerson*, and *Orcynopsis unicolor*.

With the addition of a second species of Scombridae to the Mediterranean fauna, it seems appropriate to present a key to the 13 species now known to occur in the Mediterranean Sea. The following key is based on the key to Indian Ocean scombrids (COLLETTE and GIBBS, 1963), modified by data of MATSUI (1967) and GIBBS and COLLETTE (1967, and unpublished).

KEY TO THE GENERA AND SPECIES OF SCOMBRIDAE KNOWN FROM THE MEDITERRANEAN SEA.

1. Entire body covered with moderately large scales; gill-rakers very long, longer than gill filaments; plainly visible through open mouth
 *Rastrelliger kanagurta* (CUVIER)
- Scales, if present, minute and difficult to discern, at least on posterior portion of body; gill-rakers not as long as gill filaments, hardly or not at all visible through open mouth 2
2. First and second dorsal fins separated by a distance equal to or greater than snout length 3

- First and second dorsal fins separated by a distance no greater than diameter of orbit 5
3. Body completely covered with small scales; interpelvic process very small, much shorter than shortest pelvic fin ray; adipose eyelids cover front and rear of eye; two small keels on each side of caudal peduncle; dorsal and anal finlets 5 *Scomber* 4
- Body with anterior scaly corselet, mostly naked posteriorly, interpelvic process about as long as longest pelvic fin ray; no adipose eyelids; in addition to the two small keels, a large midlateral keel present on each side of the caudal peduncle; dorsal finlets 8, anal finlets 7 *Auxis rochei* (RISSO)
4. Spines in first dorsal fin 11-13; space between end of first dorsal fin groove and second dorsal fin origin greater than length of groove, usually $1\frac{1}{2}$ times as great; swimbladder absent *S. scombrus* LINNAEUS
- Spines in first dorsal fin 9-10; space between end of first dorsal fin groove and second dorsal fin origin about equal to length of groove; swimbladder present *S. japonicus* HOUTTUYN
5. No anterior corselet, body entirely covered with scales of rather uniform size 6
- A corselet present, consisting of an anterior thickened area of larger modified scales, the scales posterior to the corselet either much smaller or absent 8
6. First dorsal spines 21-27; snout as long as rest of head; gill-rakers absent *Acanthocybium solandri* (CUVIER)
- First dorsal spines 14-17; snout much shorter than rest of head; gill-rakers present *Scomberomorus* 7
7. Lateral line abruptly bent downward below end of second dorsal fin; gill-rakers 3-8 on first arch; sides with numerous wavy vertical bands *S. commerson* (LACÉPÈDE)
- Lateral line forming a wavy curve from head to tail, not bent abruptly downward below end of second dorsal fin; gill-rakers 12-16 on first arch *S. tritor* (CUVIER)
8. Gill-rakers 13-23 on first arch; tongue without a pair of dorsally projecting longitudinal cartilaginous ridges 9
- Gill-rakers 25-63 on first arch; tongue with a pair of dorsally projecting ridges 10
9. First dorsal spines 20-23; gill-rakers 17-23 on first arch; no teeth on tongue; five to ten narrow, dark longitudinal stripes on upper part of body *Sarda sarda* (BLOCH)

- First dorsal spines 11-14; gill-rakers 13-17 on first arch; two oval patches of teeth on tongue; no stripes on body
Orcynopsis unicolor (GEOFFREY ST. HILAIRE)
10. Three to five prominent dark longitudinal stripes on lower part of body; gill-rakers 53-63 on first arch; first dorsal spines 15-16; no teeth on palatines or vomer *Katsowonus pelamis* (LINNAEUS)
 No dark longitudinal stripes on lower part of body; gill-rakers 25-43 on first arch; first dorsal spines 11-14; teeth present on palatines and vomer 11
11. Body naked except for anterior corselet and lateral line; several black spots usually present between pectoral and pelvic fins; pectoral rays 26-27
Euthynnus alletteratus (RAFINESQUE)
 Body covered with small scales behind corselet; no black spots between pectoral and pelvic fins; pectoral rays 30-36 *Thunnus* 12
12. Caudal fin with a narrow white posterior margin; gill-rakers on first arch 26-31; body deepest posterior to mid-length, at or slightly before second dorsal fin origin; pectoral fin very long, reaching well past end of second dorsal fin base *T. alalunga* (BONNATERRE)
 Caudal fin without white posterior margin; gill-rakers on first arch 35-43; body deepest at about mid-length, near middle of first dorsal fin base; pectoral fin short, less than 80% of head length *T. thynnus thynnus* (LINNAEUS)

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NOUVEAUX POISSONS POUR LA FAUNE DE LA MER ROUGE

par

M. DOR

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*A la mémoire
du Professeur J. L. B. Smith
qui par ses travaux a beaucoup
contribué à faire connaître
les poissons de la Mer Rouge*

SOMMAIRE

Preface

Explications des termes employés

ANGUILLIFORMES

CONGRIDAE

Uroconger lepturus

OPHICHTHIDAE

Ophichthus retifer

Myrophis uropterus

SALMONIFORMES

PARALEPIDIDAE

Lestrolepis pofi

LOPHIIFORMES

ANTENNARIIDAE

Antennarius commersonii

BERYCIFORMES

MONOCENTRIDAE

Monocentrus japonicus

GASTEROSTEIFORMES

SYNGNATHIDAE

Dunckerocampus dactyliophorus

SCORPAENIFORMES

SYNANCEJIDAE

Inimicus filamentosus

PLATYCEPHALIDAE

Platycephalus maculipinnis

P. pristiger

DACTYLOPTERIFORMES

DACTYLOPTERIDAE

Dactyloptena peterseni

PERCIFORMES

SERRANIDAE

Epinephelus latifasciatus

E. epistictus

ECHENEIDIDAE

Echeneis albescens

FORMIONIDAE

Apolectus niger

Lutjanidae

Pristipomoides microlepis

LETHRINIDAE

Lethrinus kallopterus

L. sanguineus

CHAETODONTIDAE

Genicanthus melanospilus caudo-
vittatus

POMACENTRIDAE

Teixeirichthys obtusirostris

Chromis nigrurus

Abudedefduf melanopus

Pomacentrus trichourus

LABRIDAE

Lepidaplois aldabrensis

Anampses twisti

Macropharyngodon bipartitus

M. varialvus

Coris africana

Hologymnosus semidiscus

Hemipteronotus javanicus