



A field identification key for 20 genera of Family Carangidae

E. M. Abdussamad*, Prathibha Rohit and O. M. M. J. Habeeb Mohamed

*Tuticorin Research Centre of Central Marine Fisheries Research Institute, South Beach Road, Tuticorin-628 001, Tamilnadu, India. *E-mail:emasamad@rediffmail.com*

Abstract

Carangidae is one of the most diverse finfish families. As field identification is complicated, a field key up to genus level has been prepared for 20 genera collected from the commercial catches at Tuticorin.

Key words: Carangids, field identification key

Introduction

Carangids being an assemblage of highly diverse group of fishes with mixed morphological and meristic characteristics, their identification and classification are complicated. Though many identification keys are available (Smith-Vaniz, 1984), their application in the field is difficult and confusing as they often employ minute taxonomic characteristics for classification of genera and species. Considering this, a field identification key upto genus level has been prepared for 20 genera of carangids. The morphometric characteristics given in this key is very distinct and striking even under field conditions. So it can be used with ease in the field for identification and classification of genera.

Materials and methods

Carangids exploited by different gears were collected from commercial catches from Tuticorin at weekly intervals. Colouration of body and fin were recorded in fresh condition. Meristic counts and morphometric measurements were made following Hubbs and Lagler (1947) and Smith-Vaniz and Staiger (1973). Observations on fin-rays and spines, gill rakers, lateral line scutes, head and body squamation were made from different size and age groups of each species. For all abundant species minimum of 30 specimens were studied and for rare species as per availability.

Based on the present data and other published

information (Smith-Vaniz, 1984) a simple key for field identification of genera available in the region was developed. Most distinct morphological features which are observable with ease under field condition alone were used in the preparation of the key. Based on the morphology of first dorsal fin, the carangids were first grouped under three categories. Based on other distinct morphometric features, they were further grouped into sub-categories or genera.

Results and Discussion

Carangids in the fishery are supported by scads, runners, trevallies, pilotfishes, jacks, black pomfrets, queenfishes and pompanos. A total of 49 species belonging to 20 genera were identified (Table 1). They were 12 species of scads belonging to six genera, 22 species of trevallies of seven genera and six pompanos of two genera. Genera under other groups were represented by single species each. In the present paper the field identification is restricted up to genus level.

Key for the identification of genera

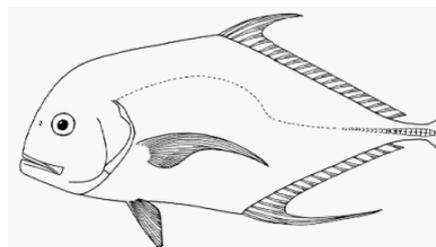
Based on the body squamation, morphology of fins, presence of adipose eyelid, lateral line scutes, gill rakers, head and colouration of body, fins and mouth, the carangids available in the region were categorised under 20 genera.

Table 1. Major genera and species of the family Carangidae

Group	Genera	Species
Scads	<i>Alepes</i>	<i>Alepes kleinii</i> , <i>A. vari</i> , <i>A. djedaba</i> , <i>A. melanoptera</i>
	<i>Atule</i>	<i>Atule mate</i>
	<i>Selar</i>	<i>Selar crumenophthalmus</i>
	<i>Selaroides</i>	<i>Selaroides leptolepis</i>
	<i>Decapterus</i>	<i>Decapterus macrosoma</i> , <i>D. tabl</i> , <i>D. kurroides</i> , <i>D. russelli</i>
	<i>Megalaspis</i>	<i>Megalaspis cordyla</i>
Runners	<i>Elegatis</i>	<i>Elegatis bipinnulatus</i>
Trevallies	<i>Atropus</i>	<i>Atropus atropus</i>
	<i>Carangoides</i>	<i>Carangoides armatus</i> , <i>C. uii</i> , <i>C. fendau</i> , <i>C. coeruleopinnatus</i> , <i>C. fulvoguttatus</i> , <i>C. gymnostethuus</i> , <i>C. malabaricus</i> , <i>C. talamparoides</i> , <i>C. chrysophrys</i> , <i>C. praeustus</i>
	<i>Caranx</i>	<i>Caranx ignobilis</i> , <i>C. sem</i> , <i>C. paupensis</i> , <i>C. carangus</i> , <i>C. sexfasciatus</i> , <i>C. tille</i> , <i>C. melampygus</i>
	<i>Ulua</i>	<i>Ulua mentalis</i>
	<i>Seriolina</i>	<i>Seriolina nigrofasciata</i>
	<i>Seriola</i>	<i>Seriola rivoliana</i> , <i>S. dumerili</i>
	Pilot fishes	<i>Gnathanodon</i>
Jacks	<i>Naucrates</i>	<i>Naucrates ductor</i>
	<i>Uraspis</i>	<i>Uraspis uraspis</i> , <i>U. secunda</i>
Black pomfrets	<i>Parastromateus</i>	<i>Parastromateus niger</i>
Queenfishes	<i>Scomberoides</i>	<i>Scomberoides lysan</i> , <i>S. tala</i> , <i>S. commersonnianus</i> , <i>S. tol</i>
	<i>Alectis</i>	<i>Alectis indicus</i> , <i>A. ciliaris</i>
Pompanos	<i>Trachinotus</i>	<i>Trachinotus baillonii</i> , <i>T. botla</i> , <i>T. blochii</i> , <i>T. mookalee</i>

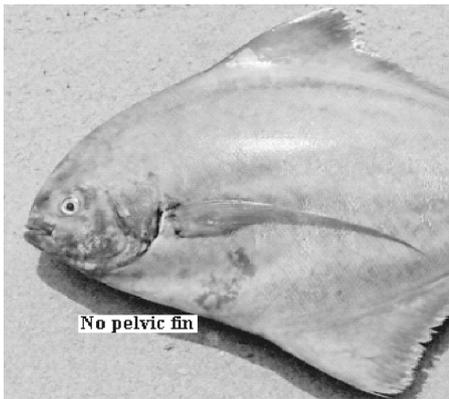
I. Spinous first dorsal fin 'absent' (not apparently visible):

Detached anal spine resorbed or embedded (not visible externally), pectoral longer than head, lateral line with scutes.....



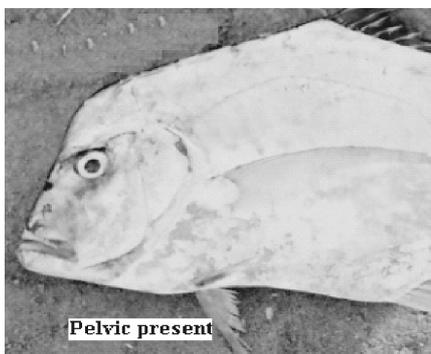
Source: Smith-Vaniz (1984)

- i. Body deep, ovate and compressed, dorsal and ventral profile strongly and equally convex, pelvic fin absent in adults (in young ones, if present, positioned anterior to pectoral base). Straight part of lateral line with 8-9 weak scutes, *Parastromateus*



Parastromateus

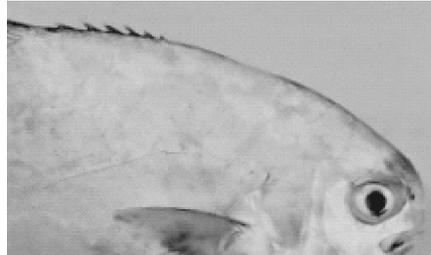
- ii. Body deep and compressed, skin superficially naked, Pelvic fin present. In young fishes, minute first dorsal spines may be visible and anterior soft rays of second dorsal and anal fins filamentous. Straight part of lateral line with 12-30 weak scutes, *Alectis*



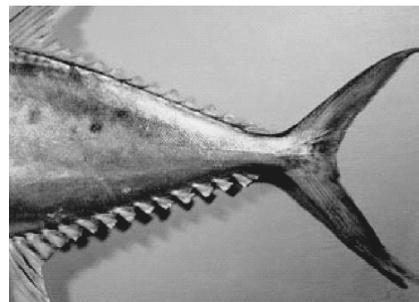
Alectis

II. First dorsal fin modified in to short spines:

Anal with one or two detached spines, pectoral shorter than head, lateral line without scutes.....



- i. Body oblong to elliptical, well compressed, dorsal profile more convex than ventral, anal



Scomberoides

with two detached spines, posterior part of soft dorsal and anal fin consisting of several semi-detached finlets, *Scomberoides*

- ii. Body deep to ovate or sub-ovate, strongly compressed, dorsal and ventral profile more or less equally convex, anal with two detached spines, lobes of second dorsal, anal and caudal



Trachinotus

fin elongate (falcate), anal and II dorsal fin entire without finlets, *Trachinotus*

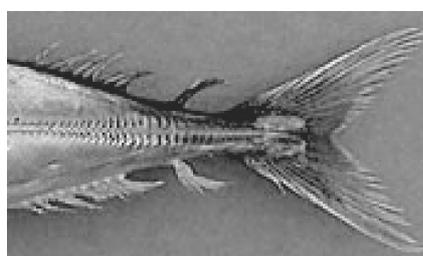
- iii. Body elongate, shallow and sub-cylindrical, dorsal and ventral profile equal, upper jaw narrow towards posterior end, anal fin with single visible detached spine, caudal peduncle with dorsal and ventral groove and lateral fleshy cutaneous keel, *Naucrates*



Naucrates

single terminal double-rayed detached finlet in dorsal and anal fin, no lateral line scutes, superficially no detached anal spine, caudal peduncle with dorsal and ventral groove, *Elegatis*

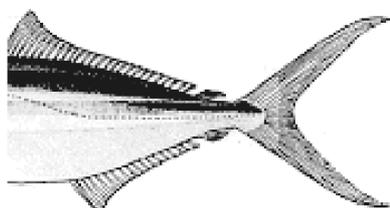
- ii. Body elongate, slender and nearly rounded, a terminal single rayed detached finlet in dorsal and anal fin, lateral line scutes prominent with maximum scute height less than the eye diameter, *Decapterus*



Decapterus

III. First dorsal fin entire (normal):

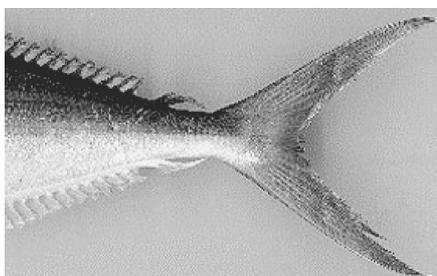
Second dorsal and anal fin with detached finlet(s):



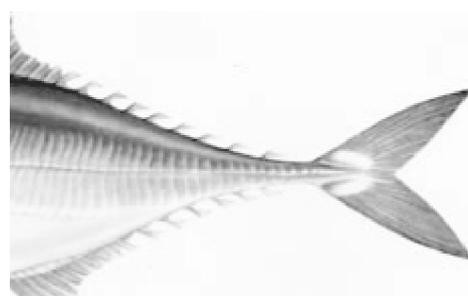
Source: Smith-Vaniz (1984)

- iii. Body elongate, sub-cylindrical, little compressed anteriorly, caudal peduncle strongly compressed, posterior soft dorsal and anal fin rays consisting of several detached finlets. Lateral line scutes broad and prominent, maximum scute height more than the eye diameter, *Megalaspis*

- i. Elongate, fusiform body, head and snout pointed, first dorsal short with only 6 spines,



Elegatis

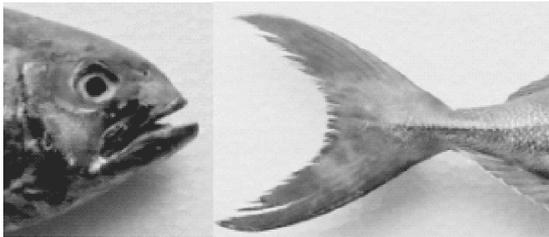


Megalaspis

Second dorsal and anal fin without detached finlets:

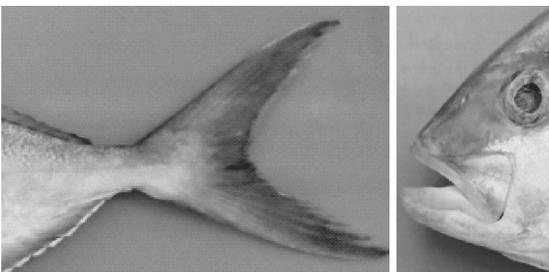
- a. *Lateral line without scutes*

- i. Body elongate, relatively shallow and sub-cylindrical, upper jaw relatively narrow, broadly rounded at the end with moderately slender supramaxilla terminating below the posterior margin of the pupil, caudal peduncle with lateral cutaneous keel, pelvic longer than second dorsal height *Seriolina*



Seriolina

- iii. Body elongate, moderately deep and slightly compressed, upper jaw truncate, broad at the end, with broad supramaxilla terminating below before the anterior margin of the pupil, caudal peduncle without cutaneous keel, pelvic shorter than second dorsal height, *Seriola*

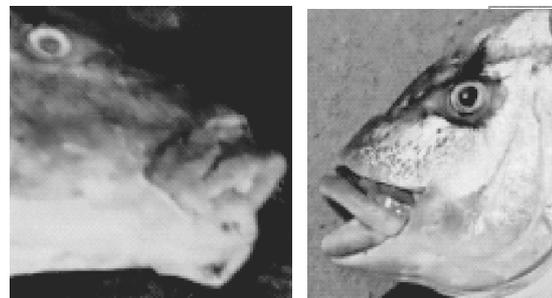


Seriola

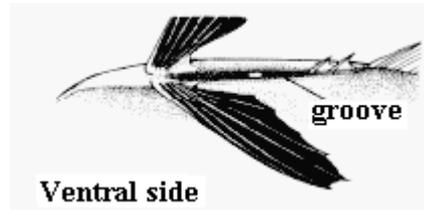
b. Straight part of lateral line with scutes

- 1. Adipose eyelid totally absent or poorly developed

- i. Body deep, strongly compressed and ovate, belly with a deep median groove to accommodate pelvic fin, anus and anal spines, pelvic fin jet black with rays whitish basally and conspicuously long extending to the base of anal fin, entire length of straight part of lateral line with scutes, *Atropus*



Gnathanodon



Atropus

Source : Smith-Vaniz (1984)

- ii. Body oblong and compressed, dorsal more convex than ventral, tongue, roof and floor of the mouth white/cream, the rest blue black, body and head dusky to brown with 6-7 bars with narrow pale inter-space, first dorsal relatively short with 8 spines, no detached anal spines, *Uraspis*

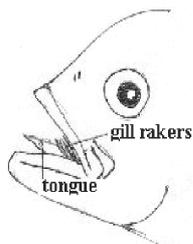


Uraspis

Source : Smith-Vaniz (1984)

- iii. Body oblong compressed, lips papillose and upper jaw strongly protractile, jaws without teeth, first dorsal with 7 spines in adults, body with alternate broad and narrow bands and golden yellow with dark bands in young ones, *Gnathanodon*

- iv. Body deep, strongly compressed and ovate, gill rakers long, numerous and projected into the mouth along the side of tongue, angle of chin projected beyond the upper jaw, straight part of lateral line with small scutes, lobes of anal and second dorsal elongate, *Ulua*



Source : Smith Vaniz (1984)

Ulua

- v. Body compressed, varying in shape from oblong to ovate, dorsal and ventral profile



Carangoides

convex, chord of curved part of the lateral line longer than the straight part, scutes relatively small and weak, *Carangoides*

2. Adipose eyelid developed only towards posterior half of the eye.....

- i. Body oblong and compressed, dorsal and ventral profile evenly convex (in some ventral



Alepes

slightly more convex) chord of curved part of the lateral line shorter than straight part, straight part with broad and prominent scutes, *Alepes*

- ii. Body mostly oblong and compressed, dorsal profile moderately convex, profile of belly between opercle and origin of anal fin more or less straight or slightly concave, upper jaw with an outer row of widely spaced canine teeth, chord of curved part of the lateral line almost equal or slightly shorter than the straight part, straight part with relatively large and strong scutes, *Caranx*



Caranx

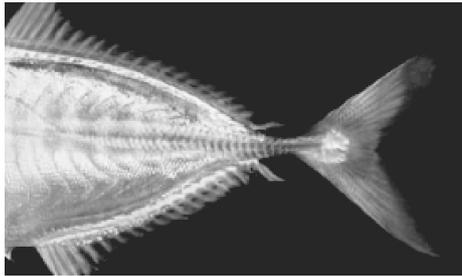
- iii. Body oblong and compressed, dorsal and ventral profile evenly convex, chord of curved part of the lateral line longer than the straight part, straight part with relatively small and less prominent scutes, a prominent black spot on shoulder region, *Selaroides*



Selaroides

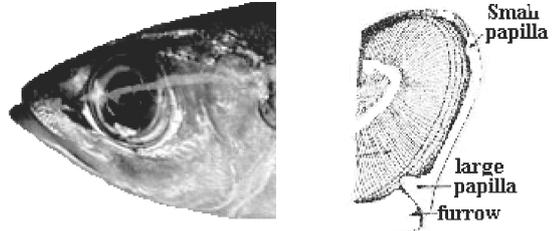
3. Adipose eyelid fleshy, well-developed and covering entire eye with a vertical opening centred on pupil.....

- a Body elongate and moderately compressed, dorsal and ventral profile evenly convex, terminal ray of second dorsal and anal fin finlet like—little more separated and nearly twice in length than the just previous ray, eyes moderate, diameter shorter than snout length *Atule*



Atule

- b. Body elongate, moderately compressed, ventral profile slightly more convex than dorsal, eyes large and prominent, diameter longer than snout length, second dorsal and anal fin with a basal sheath, lower edge of shoulder girdle margin with a deep furrow and large papillae immediately above it and a smaller one near upper edge, *Selar*.



Selar

Smith-Vaniz (1984)

Acknowledgement

The authors sincerely acknowledge the encouragement given by Dr. N. Gopalakrishna Pillai, Director, CMFRI, throughout the study and in the preparation of the paper.

References

- Hubbs, C. L. and K. F. Lagler 1947. Fishes of the great lake region. *Cranbook Inst. Sci. Bull.*, 26:186 pp.
- Smith-Vaniz, W. F. and J. C. Staiger 1973. Comparative revision of *Scomberoides*, *Oligoplites*, *Parona*, and *Hypocanthus* with comments on the phylogenetic position of Campagramma (Pisces: Carangidae). *Proc. Cal. Acad. Sci.*, 39: 1185-256.
- Smith-Vaniz, W. F. 1984. Carangidae. In: Fischer, W. and G. Bianchi (Eds.) FAO species identification sheets for fishery purpose, Western Indian Ocean (Fishery area 51) Volume I. FAO, Rome.

Received: 2 August 2007
Accepted: 12 December 2007