TREVALLY OF THE SPERMONDE ARCHIPELAGO, SOUTH SULAWESI

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ABSTRACT

The Carangoidae, popularly known as trevally is a commercially fishes and one of marine resources abundance in water of Indonesia. A study has been carried out to describethe carangoid fishes of the family Carangidae from the Spermonde Archipelago, South Sulawesi and the result will be used as basis for further study especially on bio-diversity monitoring for the area. This study was conducted from August 2006to November 2015. Thirty carangoid fishes belonging 13 genera were examined and identified: *Alepes, Alectis, Atule, Decapterus, Caranx, Carangoides, Elagatis, Gnathanodon, Megalaspis, Pseudocaranx, Scomberoides, Selar,* and *Selaroides*. The Common name available of each species was given.

Key words: Trevally, Spermonde Archipelago, South Sulawesi

INTRODUCTION

Carangoid fishesincludes highly important commercial fishes widely inhabiting mainly offshore waters in the vicinity of coral reefs from tropical to temperate regions. This family are very active swimming and some species ascend river as sub-adults (Gushiken, 1983). They usually can be identified by their deeply forked caudal fin, narrow caudal peduncle, and by the two detached spines preceding the anal fin. Most species are fast-swimming predatory fishes that hunt in the waters above reefs and in the open sea; some dig in the sea floor for invertebrates. Until recently there had been confusion about scientific names and taxonomically of carangoid fishes because of their similar overall appearance and coloration, but it has become possible to identified them because Smith-Vaniz (1999) reviewed them and described 47 species in Indonesian waters.

The result of this work will be used as basis for further study especially on bio-diversity monitoring and would hopefully be utilized as a basis for formulating management regulation of the fisheries resources for the coast Spermonde Archipelago, South Sulawesi.

METHOD

Specimens of carangoid fishes were purchased in Rajawali Fish Landing Port and Paotere FishLanding Port and fish markets in Makassar, South Sulawesi, Indonesia, from August 2006 to November 2015. The specimens purchased had been collected mostly by hand-line.

The specimens examined at the Laboratory of Marine Biology, Faculty of Marine Science and Fisheries, Hasanuddin University, Makassar. Counts and measurement are as prescribed by Hubbs and Lagler (1958). Identification is based on Rau & Rau (1980) and Allen and Talbot (1985) Gushiken (1984; 1984), Carpenter (2001), and Iwatsuki et al (2000), Kimura & Matsuura (2003).. Abbreviation used in this report are as below: Dorsal rays (D), Anal fin rays (A), Pectoral fin ray (P), Gill rakers (Gr).

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RESULTS AND DISCUSSION

Diagnostic Features of The Family Carangidae

The Carangidae with the following combination of characters: body shape varies widely, from elongate or torpedo-shaped to deep-bodies and strongly compressed. Caudal peduncle slender. Head compressed, usually keeled dorsally. Mouth slightly protractile. Teeth in jaws usually small, either in a single series or in a villiform band. Gill opening wide. Gill membrane usually not united, free from isthmus. Opercular bones thin, smooth, closely fitting. Two more or less separate dorsal fins. Spinous dorsal fins short-based with slender or short spine. Soft dorsal fin with a long base. Pectoral fins either long and falcate, or shorter and non-falcate. Anal fin preceded by two detached spines, at least in the young, its base long, equal to or sorter than that of soft dorsal fin. Most adults in this family are green, blue or blackish above; silver to white or yellow-gold on side and belly; some are barred or striped. Scales small, thin and cycloid, sometimes absent. Lateral line arched anteriorly, becoming straight posteriorly. Scutes usually present along straight portion of lateral line, but some times also along curved portion. Scutes entirely absent in some species.

***Alepes djedaba* (Forsskål, 1755)**

Descriptions: Compressed. Arched portion of lateral line a little sorter than half the length of straight portion, the lateral beginning under 2nd to 4th rays of 2nd dorsal fin. Depth 2.7 to 3.2 times in SL. Head 3.3 to 4.0 times in SL. Scales on breast, 33 to 51 scutes. Gr. 26 to 31 on lower limb; D_I with one forward-pointing spine (partially embedded in skin) and 8 normal spines, D_{II} 1+ 23 to 25; Anal fin with 2 detached spines followed by 1+ 18 to 20; P 20 to 23.

Figure 1. Banded scad (Selar perut pipih)

***Alectis indica* (Rüppel, 1830)**

Figure 2. Threadfin trevally, Indian mirrorfish (Kuweh rombeh)

Descriptions: Highly compressed. Lateral line anteriorly with strong, irregular arch, becoming straight below 9th to 12th dorsal fin rays. Depth 1.2 to 2.0 times in SL. suborbital width not greater than eye diameter. Head 2.5 to 3.7 times in SL. A distinct hump on head profile directely over eyes in comparison with *A. ciliaris*. Scale minute, deeply embedded and inconspicuous. Skin that sppears naked. Gr. stout and short, 7 to 9 on upper and 16 to18 on lower limb; D_I. 6 to 7 (embedded in skin in large species), D_{II} 1+ 18 to 19; Anal fin with 2 detached spines (embedded in skin in adult) followed by 1+ 16; P 18 to 20.

***Atule mate* (Cuvier, 1833)**

Descriptions: Compressed. Arched portion of lateral line equal to or slightly shorter than straight portion, which begun below sixth to eight soft dorsal rays.

Figure 3. Yellowtail scad (selar como)

Depth 2.9 to 3.5 times in SL. Head 3.3 to 3.8 times in SL. Scale small, not embedded in skin. Breast fully scaled. Gr. 9 to 12 on upper and 27 to 29 on lower limb; D_I with one forward-pointing spine (partially embedded in skin) and 8 normal spines, D_{II} 1+ 23 to 25; Anal fin with 2 detached spines followed by 1+ 19 to 21. Last ray of soft dorsal and anal fins finlet-like, but not detached.

***Carangoides bajad* (Forsskål, 1755)**

Figure 4. Orangespotted trevally (bubara)

Descriptions: Compressed. Lateral line anteriorly with a relatively low arch, with junction of curve and straight part below vertical from 11thto 15thsoft rays of second dorsal fin. Eye diameter smaller than snout length. Gr. 7 to 9 on upper and 18 to 21 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 22 to 25; Anal fin with 2 detached spines followed by 1+ 18 to 21. Soft dorsal, anal and pectoral fin falcate.

***Carangoides equula* (Temminck& Schlegel, 1844)**

Figure 5. Whitefin trevally

Descriptions: Compressed. Lateral line anteriorly with a moderate regular arch, with junction of curve and straight part below vertical from twelfth to fifteenth soft rays of second dorsal fin. Eye diameter smaller than snout length. Gr. 7 to 10 on upper and 18 to 23 on lower limb; D_I with one forward-pointing and 7 normal spines, D_{II} 1+ 23 to 25; Anal fin with 2 detached spines followed by 1+ 21 to 24; spinous dorsal fin moderately high, longest spine height about equal to length of soft dorsal fin lobe.

***Carangoides ferdau* (Forsskål, 1755)**

Descriptions: Compressed. Straight part of lateral line shorter than arched portion. Depth 2.5 to 2.7 times in SL. Head about 3.6 times in SL. Scale small, not embedded in skin. Breast fully scaled.Gr. 7 to 10 on upper limb and 18 to 19 on lower limb; D_I with one forward-pointing and 7 normal spine, D_{II} 1+ 23 to 29; Anal fin with 2 detached

Figure 6. Ferdau's cavalla

spines followed by 1+ 21 to 25. Soft dorsal, anal and pectoral fin falcate; color typically with 5 or 6 dusky band on sides that usually persist market specimens.

***Carangoides fulvoguttatus* (Forsskål, 1755)**

Figure 7. Gold-spotted trevally

Descriptions: Body subovate and compressed, becoming elongated-ovate and slightly subcylindrical with age. Profile of head and nape slightly angular. Mouth cleft distinctly below level of eye. Eye diameter smaller than snout length. Lateral line anteriorly with a low regular arch, with junction of curve and straight part below vertical from 13th to 16th soft rays of 2nd dorsal fin. Gr. 6 to 8 on upper and 17 to 21 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 21 to 26; Anal fin with 2 detached spines followed by 1+ 21 to 26. Numerous small golden spot on upper half and several dark irregular blotches along lateral line.

***Carangoides gymnostethus* (Cuvier, 1833)**

Descriptions: Body ovate and compressed, becoming elongated-ovate and slightly subcylindrical with age.

Figure 8. Bludger (bubara)

Profile of head and nape gently convex. Mouth cleft at level with lower margin of eye. Eye diameter smaller than snout length. Lateral line anteriorly with a low regular arch, with junction of curve and straight part below vertical from 16th to 20th soft rays of 2nd dorsalfin. Gr. 7 to 9 on upper and 19 to 22 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 28 to 32; Anal fin with 2 detached spines followed by 1+ 24 to 26. A few brown or golden spot sometimes present midlaterally.

***Carangoides hedlandensis* (Whitley, 1933)**

Figure 9. Bumpnose trevally

Descriptions: Body strongly compressed and deep; head profile extremely steep in adults, and with a distinct break in contour "bump" in the interorbital region of which becomes more pronounced with increasing size. Eye diameter about equal to or larger than snout length. Lateral line anteriorly with a moderate regular arch, with junction of curve and straight part below vertical from 10th to 12th soft rays of 2nd dorsal fin. Gr. 6 to 11 on upper and 14 to 17 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 20 to 22; Anal fin with 2 detached spines followed by 1+ 16 to 18; lobe of second dorsal fin elongated and filamentous, longer than head.

***Carangoides orthogrammus* (Jordan and Gilbert, 1881)**

Figure 10. Island trevally

Descriptions: Body elongated and compressed; dorsal profile (more convex than ventral profile); snout usually slightly angular. Upper jaw highly protractile. Lips noticeable fleshy in large adults. Lateral line anteriorly a very slight arch with junction, of curve and straight part below vertical from 15th to 19th soft rays of 2nd dorsal fin. Straight part of lateral line with 21 to 34 scales followed by 19 to 31 small scutes. Gr. 8 to 10 on upper and 20 to 30 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 28 to 31; Anal fin with 2 detached spines followed by 1+ 24 to 26.

***Carangoides plagiotaenia (*Bleeker, 1857)**

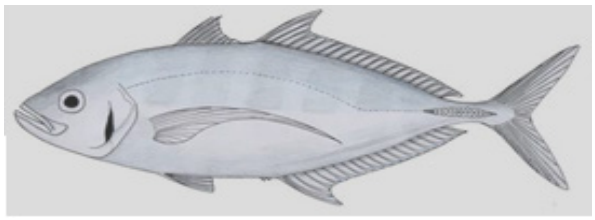

Figure 11. Barcheek trevally

Descriptions: Body oblong and compressed; lower jaw somewhat enlarged and projecting beyond upperjaw. Upper jaw with a narrow band of small teeth. Lateral line anteriorly with a moderate regular arch, with junction of curve and straight part below vertical from 13th and 15th soft rays of 2nd dorsal fin. Gr. 8 to 14 on upper and 20 to 27 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 22 to 24; Anal fin with 2 detached spines followed by 1+ 18 to 20; lobe of second dorsal fin sorter than head length.

***Carangoides praeustus* (Bennett, 1830)**

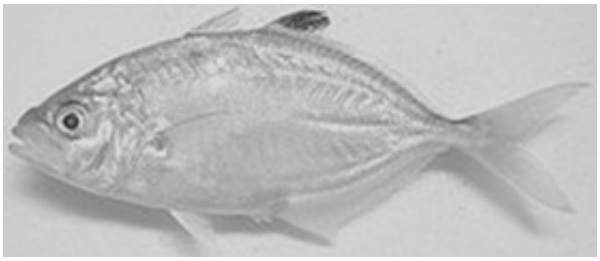

Figure 12. Brownback trevally

Descriptions: Body oblong and compressed; dorsal and ventral profiles similar and gently convex, dorsal profile of head nearly straight. Eye diameter slightly smaller than snout. Lateral line anteriorly with a moderate regular arch, with junction of curve and straight part below vertical from between 7th and 11th soft rays of 2nd dorsal fin. Gr. 9 to 11 on upper and 22 to 26 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 21 to 24; Anal fin with 2 detached spines followed by 1+ 18 to 20; spinous dorsal fin moderately high, longest spine nearly equal height of soft dorsal fin lobe.

***Carangoides talamparoides* (Bleeker, 1852)**

Descriptions: Body strongly compressed, almost ovate; dorsal profile of head strongly elevated to nape, almost straight in profile. Eye diameter distinctly smaller than snout length. Lateral line anteriorly with a moderate regular arch, with junction of curve and straight part below vertical from between 11th and 14th soft rays of 2nd dorsal

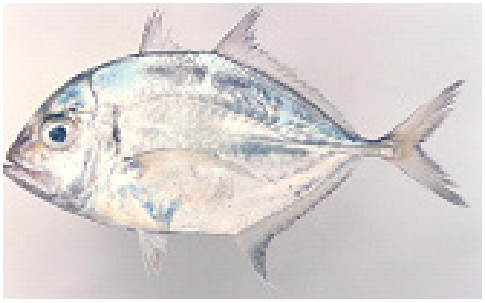

Figure 13. Imposter trevally

fin. Gr. 6 to 9 on upper and 19 to 22 on lower limb; D_I with one forward-pointing and 8 normal spines, D_{II} 1+ 20 to 23; Anal fin with 2 detached spines followed by 1+ 17 to 19.

***Caranx ignobilis* (Forsskål, 1775)**

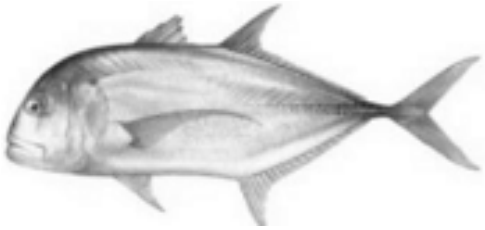

Figure 14. Yellowfin-jack (bubara)

Descriptions: Slightly compressed, robust. Lateral line becoming straight below 6th to 7th soft dorsal fin ray. Arched part 1.4 to 1.5 times in straight part. Depth 2.0 to 3.2 times in SL. Upper jaw reaching to below posterior margin of eye. Eye with moderate posterior and narrower anterior eyelids. Head 3.0 to 3.6 times in SL. Gr. 4 to 7 on upper and 11 to 16 on lower limb; D_I with one forward-pointing (partially embedded in skin) and 8 normal spine; D_{II} 1+ 18 to 21; Anal fin with 2 detached spines followed by 1+ 15 to 17. Base of anal fin shorter than that of dorsal fin. Pectoral fins falcate.

***Caranx heberi* (Bennet, 1830)**

Figure 15. Balcktip trevally

Descriptions: Body oblong, compressed; dorsal profile strongly convex to second dorsal fin, ventral profile only slightly convex. End of upper jaw extends to posterior edge of pupil or a little beyond. Straight part of lateral line with 0 to 4 anterior scales followed by 30 to 40 strong scutes. Gr. 6 to 8 on upper and 17 to 19 on lower limb; D_I with one forward-pointing and 8 normal spine, D_{II} 1+ 19 to 20; anal fin with 2 detached spines followed by 1+ 15 to 17. Small to large patch of prepelvic scales. Blackish pigment in upper caudal-fin lobe typically present.

***Caranx melampygus* (Cuvier, 1833)**

Figure 16. Bluefin trevally (Kuwah puka putih)

Descriptions: Body oblong, compressed; dorsal profile moderately convex to second dorsal fin, ventral profile only slightly convex. End of upper jaw extends to below anterior margin of eye. Straight part of lateral line with 0 to 10 anterior scales followed by 27 to 42 strong scutes. Gr. 5 to 9 on upper and 17 to 21 on lower limb; D_I with one forward-pointing and 8 normal spine, D_{II} 1+ 21 to 24; anal fin with 2 detached spines followed by 1+ 17 to 20. Small blackish spot, much smaller than pupil diameter at upper angle of opercle. Head and body silvery grey and fins pale to dark dusky, except pectoral fins yellow.

***Caranx sexfasciatus* (Quoy&Gaimard, 1825)**

Figure 17. Bigeye trevally

Descriptions: Body oblong, compressed; dorsal profile moderately convex anteriorly, ventral profile only slightly convex. End of upper jaw extends to beyond posterior margin of eye. Straight part of lateral line with 0 to 3 anterior scales followed by 27 to 36 strong scutes. Gr. 6 to 8 on upper and 15 to 19 on lower limb; D_I with one forward-pointing and 8 normal spine, D_{II} 1+ 19 to 21; anal fin with 2 detached spines followed by 1+ 14 to 17. Small blackish spot, much smaller than pupil diameter at upper angle of opercle.

***Caranx tille* (Cuvier, 1833)**

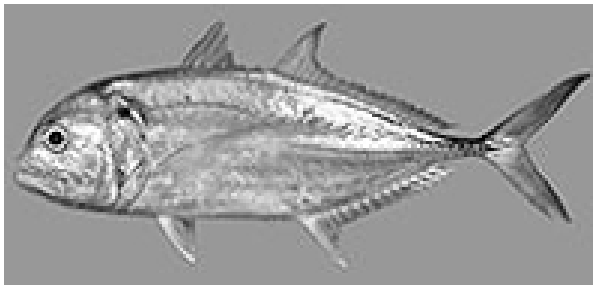

Figure 18. Tille trevally

Descriptions: Body oblong, compressed; dorsal profile strongly convex anteriorly, ventral profile only slightly convex. End of upper jaw beyond posterior margin of eye. Straight part of lateral line with 0 to 2 anterior scales followed by 33 to 42 strong scutes. Gr. 6 to 8 on upper and 15 to 17 on lower limb; D_I with one spine and 8 normal spine, D_{II} 1+ 20 to 22; anal fin with 2 detached spines followed by 1+ 16 to 18. Blackish spot, at least 1/2 diameter of pupil at upper margin of opercle.

***Decapterus kurroides* (Bleeker, 1855)**

Figure 19. Redtail scad (laying malalugis)

Descriptions: Body elongated, moderately slender and slightly compressed. Posterior end of upper jaw straight above, slightly concave and not noticeable slanted anteroventrally. Upper jaw with a narrow band of minute teeth. Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from 11th to 13th soft rays of 2nd dorsal fin. Scales in curved with 31 to 36 scutes; total scutes in lateral line 80 to 86. End of upper jaw beyond posterior margin of eye. Gr. 9 to 12 on upper and 26 to 32 on lower limb; D_I with one spine and 8 normal spine, D_{II} 1+ 28 to 30; anal fin with 2 detached spines followed by 1+ 22 to 26. Caudal fin red.

***Elagastis bipinnulata* (Quoy&Gaimard, 1825)**

Figure 20. Rainbow runner (Sunglir)

Descriptions: Body greatly elongate, almost fusiform, head and snout pointed; mouth small, upper jaw ending distinctly before eye. Upper jaw with a narrow band of minute teeth. Lateral line with a slight anterior arch. No scutes. D_I with 6 spines, D_{II} 1+ 25 to 30 including a detached 2-rayed finlet, anal fin with only 1 spine, followed by second spine continuous with the following 18 to 22 soft rays, including a detached 2-rayed finlet. Anal fin base relatively short. Pectoral fin short, about two times in head length and about as long as pelvic fins. Caudal fin deeply forked. Two narrow light blue or bluish white stripe along side, with a broader olive or yellow stripe between them.

***Gnathanodon speciosus* (Forsskål, 1775)**

Figure 21. Golden trevally (Kuweh macan)

Descriptions: Body compressed, oblong. Lips noticeably papillose and upper jaw strongly protactile. Upper jaw without teeth. Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below vertical from ninth to fourteenth soft rays of second dorsal fin. Straight part of lateral line with 17 to 24 scale

followed 17 to 26 scutes Scales in curved with 31 to 36 scutes; total scutes in lateral line 80 to 86. Gr. 7 to 9 on upper and 19 to 22 on lower limb; D_I with 7 spine, D_{II} 1+ 18 to 20, anal fin with 2 detached spines followed by 1+ 15 to 17. All fins yellow, tip of caudal fin lobes black.

***Megalaspis cordyla* (Linnaeus, 1758)**

Figure 22. Torpedo scad

Descriptions: Body elongate, subcylindrical, a little compressed posteriorly, caudal peduncle strongly compressed with a marked medial keel. Snout and lower jaw pointed. Upper jaw extending posteriorly to centre of eye. Lateral line strongly arched anteriorly, with junction of curved and straight parts below vertical from 4th or 5th spine of dorsal fin. Scales in curved part of lateral line 21 to 28; straight part with 51 to 59 very large scutes. Gr. 8 to 12 on upper and 19 to 22 on lower limb; D_I with 8 spines, D_{II} 1+ 18 to 20 soft rays, anal fin with 2 detached spines followed by 1+ 16 to 17 soft rays.

***Pseudocaranx dentex* (Bloch and Schneider, 1801)**

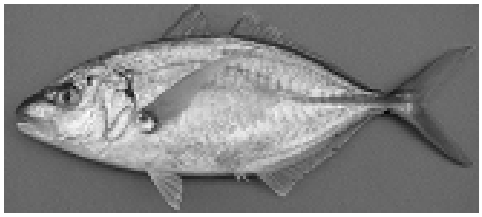

Figure 23. White trevally

Descriptions: Body elongate, moderately deep and compressed, with dorsal and ventral profiles similar. Eye relatively small with adipose eyelid poorly developed. End upper of jaw essentially vertical. Both jaws with a single row of blunt conical teeth, upper jaw sometimes with an inner series of conical teeth anteriorly. Lateral line with a weak and extended anterior arch, with junction of curved and straight parts of lateral line below vertical from 12th to 14th soft rays of 2nd dorsal fin. Gr. 9 to 13 on upper and 20 to 24 on lower limb; D_I with 8 spines, D_{II} 1+ 24 to 28 soft rays, anal fin with 2 detached spines followed by 1+ 20 to 24soft rays. A diffuse black spot on upper margin of opercle.

***Scombroides tala* (Cuvier, 1832)**

Figure 24. Barred queenfish

Descriptions: Body oblong to elliptical, strongly compressed; snout and nuchal profile nearly straight. Upper jaw extend slightly beyond margin of eye in adults. Lateral line only slightly irregular, weakly to moderately convex above pectoral fins becoming straight posteriorly. No scutes; scales on midbody below lateral line partially embedded and bluntly lanceolate. No caudal peduncle grooves. Gr. 1 to3 on upper and 7 to 11 on lower limb; D_I with 6 to 7 short spines, D_{II} 1+ 16 to 19 soft rays, anal fin with 2 detached spines followed by 1+ 16 to 17 soft rays. Side of adult with 4 to 8 vertically elongate plumbeous blotche, most of which intersect lateral line.

***Scombroides tol* (Cuvier, 1832)**

Figure 25. Needlescaled queenfish

Descriptions: Body oblong to elliptical, strongly compressed; dorsal and ventral profiles nearly equal, snout pointed with dorsal profile of head and nape slightly concave. Upper jaw extend to posterior margin of pupil in adults. Lateral line only slightly irregular, weakly to moderately convex above pectoral fins becoming straight posteriorly. No scutes; scales on midbody below lateral line partially embedded, slender needle-like. No caudal peduncle grooves. Gr. 7 on upper and 17 to 20 on lower limb; D_I with 6 to 7 short spines, D_{II} 1+ 19 to 20 soft rays, anal fin with 2 detached spines followed by 1+ 18 to 19 soft rays. Side of adult with 5 to 8 vertically oblong black blotches, most of which intersect lateral line.

***Selar crumenophthalmus* (Bloch, 1793)**

Figure 26. Bigeye scad (*Selar bentong*)

Descriptions: Body elongate and moderately compressed with lower profile slightly more convex than upper. Eye very large, shorter than snout length and with a well developed adipose eyelid completely covering eye except for a vertical slit centred on pupil. Upper jaw moderately broad and extending to below anterior margin of pupil. Gr. 9 to 12 on upper and 26 to 31 on lower limb; D_I with 8 spines, D_{II} 1+ 24 to 27, dorsal and anal fins without 2 detached terminal finlet. Scales in curved part of lateral line 48 to 56; 0 to 4 scutes in curve part of caudal peduncle.

***Selaroides leptolepis* (Cuvier, 1833)**

Descriptions: Body elongate, oblong and compressed; dorsal and ventral profiles equally convex. Eye diameter about equal to slightly smaller than snout length. Upper jaw strongly protractile with posterior end of jaw concave above, concave and produced below.

Figure 27. Yellowstripe scad (Selar kuning)

Upper jaw without teeth; lower jaw series of minute teeth. Lateral line anteriorly with moderate regular arch, with junction of curved and straight parts below vertical from 10th to 12th soft ray of 2nd dorsal fin. Gr. 10 to 14 on upper and 26 to 32 on lower limb; D_I with 8 spines, D_{II} 1+ 24 to 26, dorsal and anal fins without 2 detached terminal finlet. Scales in curved part of lateral line 13 to 25followed by 24 to 29 relatively small scutes.

***Seriolinanigro fasciata* (Rüppel, 1829)**

Figure 28.Blackbanded trevally (bubara)

Descriptions: Body elongate, moderately shallow and slightly compressed, with head profile rising steeply to interorbital, than becoming smoothly convex to origin of spinous dorsal fin. Upper jaw broadly rounded posteriorly, usually extending to below posterior margin of eye. Gr. on first gill arch mostly consisting of rudiments, 4 to 10 total elements. Dorsal fin with VI or VIII short spines, followed by I spine and 15 to 18 soft rays. No scutes; caudal peduncle with a slight lateral fleshy keel on each side, and dorsal and ventral grooves present.

***Ulua mentalis* (Cuvier, 1833)**

Descriptions: Body strongly compressed; dorsal profile more strongly convex than ventral profile. Lower jaw becoming prominent in large adults, with the angel of "chin" projecting beyond upper jaw. Lateral line anteriorly with moderate arch, with junction of curved and straight parts below vertical from 10th to 12th soft ray of second dorsal fin. Gr. 23 to 27 on upper and 51 to 61 on lower limb; gill rakers extremely long, feather-like, and project into mouth along side of ttongue.

Figure 29. .Longrakered trevally

D_I with 8 spines, D_{II} 1+ 21 to 22, anal fin with 2 detached spines followed by I spine and 17 or 18 soft rays.

***Uraspis helvola* (Forster, 1801)**

Figure 30..Whitemouth jack

Descriptions: Body oblong and compressed; dorsal profile strongly convex, ventral profile slightly convex to isthmus, than nearly straight to origin of second dorsal fin; snout broadly rounded. Upper jaw extending posteriorly to below anterior margin of eye to middle of eye. Curved part of lateral line with 48 to 66 scales

and straight part of lateral line with 23 to 40 scutes. Gr. 5 to 7 on upper and 13 to 17 on lower limb; D_I with 8 short slender spines, D_{II} 1+ 25 to 30 soft rays, anal fin with 2 detached spines followed by I spine and 19 to 22 soft rays.

CONCLUSION

Thirty species of 13 genera of the family Carangidae were described from the Tomini Bay, Gorontalo: *Alectis indica*(Rüppel, 1830), *Alepes djedaba* (Forsskål, 1755), *Atule mate*(Cuvier, 1833), *Carangoides bajad* (Forsskål, 1755), *Carangoides equula* (Temminck & Schlegel, 1844), *Carangoides ferdau* (Forsskål, 1755), *Carangoides fulvoguttatus* (Forsskål, 1755), *Carangoides gymnostethus* (Cuvier, 1833), *Carangoides hedlandensis* (Whitley, 1933)

Carangoides orthogrammus Jordan and Gilbert, 1881, *Carangoides plagiotaenia* Bleeker, 1857, *Carangoides praeustus* (Bennett, 1830), *Carangoides talamparoides* Bleeker, 1852

Caranx ignobilis (Forsskål, 1775), *Caranx heberi* (Bennet, 1830), *Caranx melampygus* Cuvier, 1833, *Caranx sexfasciatus* Quoy & Gaimard, 1825, *Caranx tille* Cuvier, 1833, *Decapterus kurroides* Bleeker, 1855, *Elagastis bipinnulata* (Quoy & Gaimard, 1825), *Gnathanodon speciosus* (Forsskål, 1775), *Megalaspis cordyla* (Linnaeus, 1758), *Pseudocarax dentex* (Bloch and Schneider, 1801), *Scombroides tala* (Cuvier, 1832), *Scombroides tol* (Cuvier, 1832), *Selar crumenophthalmus* (Bloch, 1793), *Selaroides leptolepis* (Cuvier, 1833), *Seriolina nigrofasciata* (Rüppel, 1829), *Ulua mentalis* (Cuvier, 1833), *Uraspis helvola* (Forster, 1801).

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