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On a new deep sea skate, *Rhinobatos variegatus*, with notes on the deep sea sharks *Halaelurus hispidus*, *Eridacnis radcliffei* and *Eugaleus omanensis* from the Gulf of Mannar.

by

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With 4 figures.

Introduction.

Our knowledge of the deep sea elasmobranchs of the seas around India is far from satisfactory. Alcock (1889, 1891, 1898, 1899) described *Raja mamillidens, Paracentroscyllium ornatum, Scyllium hispidum, Centrophorus rossi, Scyllium quagga, Raja powellii, R. johannis-davisi* and *Benthobatis moresbyi* based on the collection of the "Investigator" from the seas around India; Brauer (1906) reported five deep sea elasmobranchs from the Indian waters and described a new species *Scylliorhinus indicus* from the Gulf of Aden; Weber (1913) described three rays of which *Raja annandalei* and *R. sibogae* are from the Gulf of Mannar; Misra (1950) described a new species *Proscyllium alcocki* from the collections of Alcock; Silas & al. (1969) reported *Centrophorus armatus* (Gilchrist) and *Echinorhinus brucus* from the south west coast of India; *Squalus fernandinus* was also reported by Silas & Prasad (1969) from the above locality; Silas (1969) reported ten deep sea elasmobranchs from off south west coast of India; Nair & Mohan (1971, 1972) reported *C. armatus* and *E. brucus* from Gulf of Mannar.

Four deep sea elasmobranchs are described from Gulf of Mannar in the present study and of these *Rhinobatos variegatus* is a new skate and *Eugaleus omanensis* Norman is reported for the first time from Indian waters.

Scyliorhinidae.

Halaelurus hispidus (Alcock).

(Fig. 1.)

Scyllium hispidum Alcock 1891, Ann. Mag. nat. Hist., (6) **8**: 21; 1892 Illustr. zool. "Investigator": pl. 8 fig. 3-3a (Andamans); 1896 J. asiat. Soc. Bengal, **65** (2): 310 (Reference); 1899 Cat. deep sea Fish. Indian Mus.: 15 (Andamans). — Silas 1969, Bull. cent. mar. Fish. Res. Inst., 12: 15 (name only).

Scylliorhinus hispidus, — BRAUER 1906, Dtsch. Tiefsee Exped., "Valdivia", 15, Tiefseefische: 7 (Andamans, East coast of Africa).

Scyliorhinus hispidus, — REGAN 1908, Ann. Mag. nat. Hist., (8) **1**: 460 (Indian Ocean). — FOWLER 1941, Bull. U. S. nation. Mus., 100, **13**: 47 (compiled).

Halaelurus hispidus, — GARMAN 1913, Mem. Mus. comp. Zool., **36**: 85 (Andamans). — FOWLER 1941, Bull. U. S. nation. Mus., 100, **13**: 47 (compiled).

Trunk at origin of pectoral: breadth 9·1-11·8 (10·7), height 5·1-7·2 (6·2); snout length in front of: inner nostrils 2·6-4·6 (4·1), mouth 3·2-5·6 (4·7); eye diameter 3·3-4·4 (3·9); mouth: breadth 8·3-10·5 (9·3), height 3·4-5·1 (4·3); nostrils: distance between inner ends 2·3-3·3 (2·7); gill opening lengths: first 1·3-2·2 (1·4), second 1·2-2·0 (1·6), third 1·2-2·0 (1·7), fourth 1·2-2·0 (1·7), fifth 1·2-2·0 (1·5); first dorsal fin: vertical height 3·2-6·1 (5·0), length of base 5·0-6·3 (5·5); second dorsal fin: vertical height 2·1-4·0 (3·4);

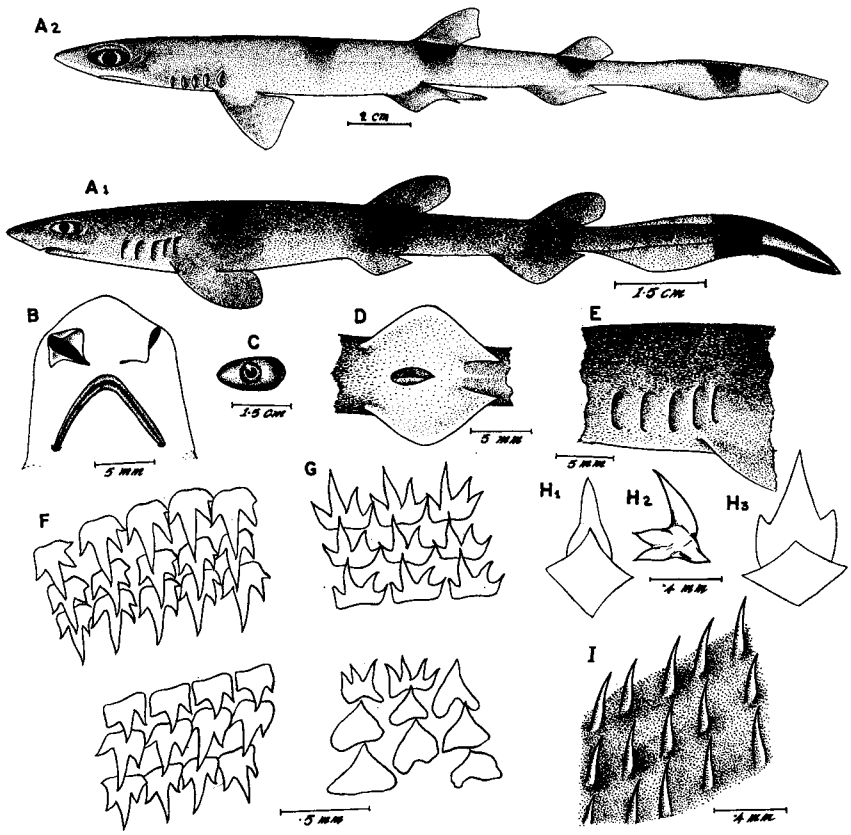

Fig. 1. *Halaelurus hispidus* (ALCOCK). — A1) ♀ juvenile, 140 mm; Gulf of Mannar. — A2) ♂ adult, 258 mm. — B) Ventral view of head, nostril flaps deflected. — C) eye. — D) Vent. — E) Positions of gill openings. — F) upper jaw teeth. — G) lower jaw teeth. — H1-3) dermal denticles of specimens of 150, 140, 258 mm respectively. — I) dermal denticles of a juvenile specimen in situ.

length of base 3·6-5·4 (4·7); anal fin: vertical height 2·6-3·6 (3·1), length of base 8·3-9·8 (9·2); caudal fin: upper margin 21·7-29·4 (24·3), lower anterior margin 6·5-12·2 (10·2); pectoral fin: outer margin 9·6-12·6 (11·3), inner margin 5·8-8·1 (6·4), distal margin 5·8-9·1 (7·7); distance from snout to: first dorsal 43·5-46·6 (45·3), second dorsal 61·9-66·0 (64·4), upper caudal 70·5-76·8 (75·0), pectoral 14·7-20·5 (18·5), pelvic 38·0-42·3 (40·6), anal 57·0-62·0 (59·0), lower caudal 68·5-75·6 (72·0); interspace between: first dorsal and second dorsal 12·2-15·5 (13·4), second dorsal and caudal 2·0-5·9 (3·3), anal and caudal 1·6-3·4 (2·4); distance between origins of: pectoral and pelvics 19·2-26·5 (23·2), pelvics and anal 12·8-20·1 (18·1); all proportions in per cent of total length, followed by their mean in parenthesis.

Head (upto first gill opening) 7 times in total length, flattened above; snout blunt; eyes about five times in prepectoral length, equal to preorbital distance. Spiracle round, about 1/3 in eye; fifth gill opening above the level of others (Fig. 1E).

Teeth about $\frac{22\text{-}22}{23\text{-}23}$, anterior upper jaw teeth with a median sharp cusp, flanked by one small cusp on inner side and two small ones on outer side, posteriorly either side of median cusp with one small cusp, nonfunctional rows with indistinct cusps, teeth symmetrical in both jaws, upper jaw with 3 functional rows anteriorly and one posteriorly. (Fig. 1 F & G). Labial fold short, around the corner of jaws; nostrils oblique, anterior and posterior margins with a single continous fold (Fig. 1 B). Dermal denticles in young specimens (140 mm to 150 mm) with a long pointed spine (Fig. 1 H). At about 150 mm the lateral cusps start developing, and the specimens above 250 mm have tricuspidate denticles with acutely pointed median cusps and short lateral cusps.

First dorsal bigger than second and originates behind midpoint of base of pelvics in very young specimens (140-158 mm) and opposite to last 1/4th of base of pelvics in larger specimens. Second dorsal originates above midpoint of base of anal, pelvics quadrate, rear corner pointed (Fig. 1 D), pectoral fins rounded; precaudal pit absent; anterior dorsal margin of caudal convex, tip pointed in young specimens and rounded in larger specimens; ventral caudal lobe not distinct in small specimens and rather distinct in larger specimens.

Dorsally grey, ventrally pale with broad grey bands along base of first, and second dorsals and posterior half of caudal, bands do not extend ventrally, ventral caudal lobe greyish, pectoral fins pale grey distally.

Distribution: Andaman sea, off Kerala, Gulf of Mannar, east coast of Africa.

Material: 1 ♀, CMFRI 4/640; total length 140 mm; off Mandapam, Gulf of Mannar, 200 fathoms; 3. IV. 1970. — 19 ♀, 111 ♂, CMFRI 4/640; ttl 140-265 mm; off Mandapam, Gulf of Mannar, 270 fathoms; 8. II. 1970. — 2 ♂, SMF 11465; ttl 216 and 181 mm; Gulf of Mannar, 250 fathoms; 8. IV. 1970.

Though REGAN (1908) reports the colour as "greyish with or without dark cross-bars on back", *H. hispidus* reported from Andaman sea does not have the bands. The colour varies greatly. Among the 130 specimens collected from a single haul some are pale brown with grey bands, some with white marking while a few are almost white with a few patches of pigmentations. Juvenile specimens (Fig. 1 A) are covered with bristle-like dermal denticles with a single spine and look different from the mature specimens (Fig. 1 I).

Carchariidae.

Eridacnis radcliffei SMITH.

(Fig. 2.)

Eridacnis radcliffei SMITH 1913, Proc. U. S. nation. Mus., **45**: pl. 47 (Philippines, off Jolo province, 161 fathoms). — NORMAN 1939, Sci. Rep. John Murray Exped., **7**: 12 (Philippines, Gulf of Aden). — FOWLER 1941, Bull. U. S. nation. Mus., 100, **13**: 200 (East Indies, Philippines). — HERRE 1953, Check list of Philippine fishes: 21. — COMPAGNO 1970, Proc. Calif. Acad. Sci., (4) **38** (4): 63-98.

Proscyllium alcocki MISRA 1950, J. zool. Soc. India, **2**: 87-89, pl. 1 (Andaman sea).

Eridacnis alcocki, — COMPAGNO 1970, Proc. Calif. Acad. Sci., (4) **38** (4): 90 (name only).

Trunk at origin of pectoral: breadth 8·8-10·4 (10·0), height 6·3-8·5 (7·0); snout length in front of: outer nostrils 3·3-4·6 (3·8), mouth 5·0-5·8 (5·5); eye diameter: horizontal 4·8-5·5 (5·1); mouth: breadth 7·3-9·0 (8·2), height 5·1-6·0 (5·6); nostrils: distance between inner ends 2·6-2·9 (2·7); gill opening length: first 2·2-3·0 (2·6), second 2·3-3·6 (2·9), third 2·8-4·1 (3·2), fourth 2·6-3·6 (2·9), fifth 2·2-3·1 (2·4); first dorsal fin: vertical height 4·7-5·7 (5·6), length of base 6·7-8·5 (7·6); second dorsal fin: vertical height 5·2-6·7 (5·8), length of base 6·8-9·0 (8·0); anal fin: vertical height 1·6-3·2 (2·2), length of base 6·1-8·6 (7·3); caudal fin: upper margin 22·4-24·4 (23·2), lower anterior margin 20·2-21·3 (20·1); pectoral margin: outer margin 11·6-12·1 (11·8), inner margin 6·8-8·7 (7·9), distal margin 6·2-9·4 (7·5); distance from snout to: eye 5·0-6·3 (5·5), first dorsal 30·4-32·8 (31·8), second dorsal 55·8-58·4 (57·3), upper caudal 72·3-76·4 (74·5), pectoral 19·7-21·3 (20.4), pelvics 40·4-43·1 (41·8), anal 56·4-60·8 (58·7); interspace between: first and second dorsal 16·6-19·9 (18·5), second dorsal and caudal 9·9-12·2 (11·1), anal and caudal 8·3-10·2 (9·2); distance between origins of: pectoral and pelvic 18·6-24·9 (21·7), pelvic and anal 15·5-17·2 (16·7): all proportions in per cent of total length followed by their mean in parenthesis.

Body slender, preoral distance about four times in prepectoral, eyes oval, lower nictitating fold distinct, (Fig. 2 B); fourth and fifth gill slits posterior to origin of pectoral (Fig. 2 C). Nostrils very oblique, shortest distance between nostrils to mouth more than 1/3 of the preoral distance, anterior nasal flaps short, reach posterior margin medially, posterior flaps broad; labial furrows rudimentary (Fig. 2 F); teeth $\frac{75\text{-}80}{75\text{-}80}$, minute, three functional rows anteriorly and 1-2 posteriorly on both jaws; anteriorly upper jaw teeth with single cusp (Fig. 2 G, I) and posteriorly with 1-2 cusps on each side (Fig. 2 J), lower teeth with median cusp upto 6th row, from 7th to 10th with one lateral cusp on outer side of the median cusp, from 13-18th row with two lateral cusps, from 19th to posterior end with four cusps of same size, non-functional teeth towards the corners with ill defined cusps (Fig. 2 H); lower margin of teeth with transverse notches; dermal denticles tricuspidate (Fig. 2 E).

Origin of first dorsal a little behind the inner end of pectoral; second dorsal slightly in advance of anal, as high as first, base longer than that of first dorsal; anal fin shallow, its base 3 times in its hight; caudal about 1/4 of total length; subterminal notch distinct, precaudal pit absent; outer corner of pelvic fins broadly rounded, inner corners elongated with pointed tips (Fig. 2 D); pectoral fins large, reaching just behind the origin of first dorsal; claspers serrated.

Dorsally grey, ventrally hyaline, tip of first dorsal and pectorals dark grey, three broad bands on caudal fin, ventral lobe of caudal greyish.

Distribution: Philippines, East Indies, Andaman seas, Gulf of Mannar and Gulf of Aden.

Material: 5 ♂, CMFRI 5/641; ttl 181-195 mm; off Mandapam, Gulf of Mannar, 200 fathoms, trawl net; 26. III. 1970; — 2 ♂, SMF 11467; ttl 191 and 181 mm (same lot). — 75 ♂, CMFRI 5/641; ttl 81-206 mm; off Mandapam, Gulf of Mannar, 270 fathoms, trawl net; 8. II. 1971.

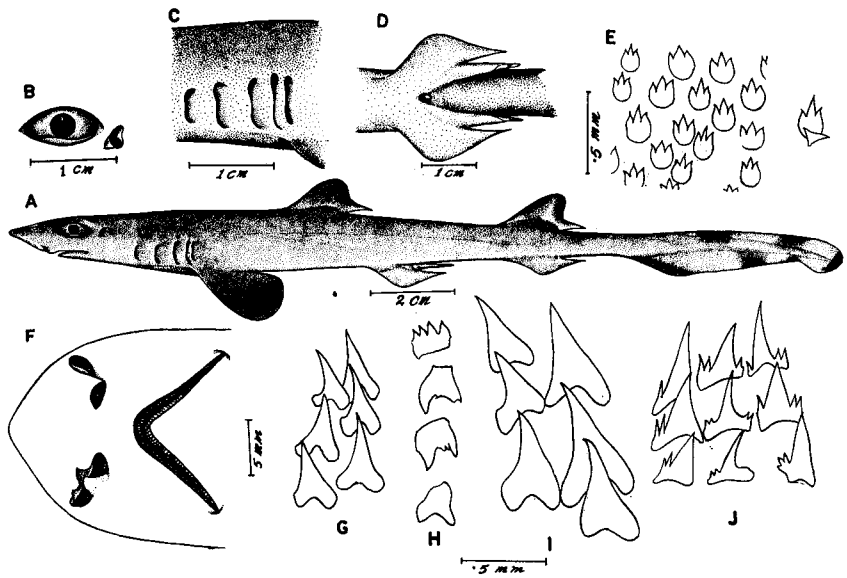

Fig. 2. *Eridacnis radcliffei* SMITH. — A) ♂, 192 mm., off Mandapam Camp (Gulf of Mannar). — B) eye, sub-ocular fold and spiracle. — C) position of gill slits. — D) ventrals and claspers. — E) dermal denticles. — F) head with deflected nasal flaps. — G) anterior lower jaw teeth (9th row). — H) lower jaw teeth 25th row. — I) anterior upper jaw teeth. — J) posterior upper jaw teeth.

Proscyllium alcocki MISRA, 1950, is synonymised with *E. radcliffei* SMITH as its description tallies with that of the last named species. COMPAGNO (1970) is also of the opinion that *alcocki* may be a synonym of *radcliffei*. The genus *Eridacnis* includes the species *radcliffei* SMITH, *barbouri* (BIGELOW & SCHROEDER) and *sinuans* (SMITH). In *Proscyllium* HILGENDORF the nostrils are very close and the internarial width is about 1/2 of nostril width where as in *Eridacnis* the nostrils are well apart and the internarial width about equals to nostril width.

Galeorhinidae.

Eugaleus omanensis NORMAN.*
(Fig. 3.)

Eugaleus omanensis NORMAN 1939, John Murray exped. 1933-34, Sci. rep., 7: 11-12, Fig. 3.

"Galeorhinus" omanensis, — COMPAGNO 1970, Proc. Calif. Acad. Sci., (4) 38 (4): 64-97.

Trunk at origin of pectoral: breadth 8·5-11·0 (9·5), height 5·4-8·7 (6·7); snout length in front of: outer nostril 2·3-4·3 (3·3), mouth 5·0-6·2 (5·7); eye diameter: horizontal 3·4-4·4 (4·1); mouth: breadth 5·8-8·4 (7·5), vertical height 3·5-4·8 (4·1); nostrils: distance between inner ends 2·9-3·9 (3·4); gill opening: first 1·3-2·1 (1·7), second 1·2-2·1 (1·7), third 1·3-2·1 (1·7), fourth 1·3-2·4 (1·8), fifth 1·3-2·4 (1·7); first dorsal: vertical height 3·8-6·2 (4·9), length at base 5·4-8·5 (7·7); second dorsal fin: vertical height 3·7-5·7 (4·3), length at base 4·7-7·1 (6·1), caudal fin: upper margin 18·8-23·7 (21·9), lower anterior margin 6·3-9·1 (7·6); pectoral fin: outer margin 8·7-13·4 (11·4), inner margin 5·8-7·1 (6·5), distal margin 4·5-8·5 (5·0); distance from snout to: first dorsal 24·7-30·0 (27·5), second dorsal 57·7-60·7 (59·0), upper caudal 76·3-80·8 (77·7), pectoral 19·3-23·7 (21·0), pelvics 44·3-48·5 (46·5), anal 58·6-63·2 (60·9), lower caudal 59·4-78·0 (73·7); interspace between: first and second dorsals 21·9-25·2 (23·5), second dorsal and caudal 10·8-14·0 (12·3), anal and caudal 8·2-10·2 (9·2); distance from origins of: pectoral and pelvic 22·7-27·1 (25·4), pelvic and anal 13·4-18·4 (15·1): all proportions in percent of total length followed by their means in parenthesis.

Trunk stout, tapering posteriorly, caudal peduncle slender, snout pointed, preoral distance slightly less than width of mouth, distance between nostril and mouth half of prenarial distance. Head about 6 times in total length, flat; eyes oval, nicitating lower eye lid present (Fig. 3 A, C); spiracle small, slit like, about 1/5

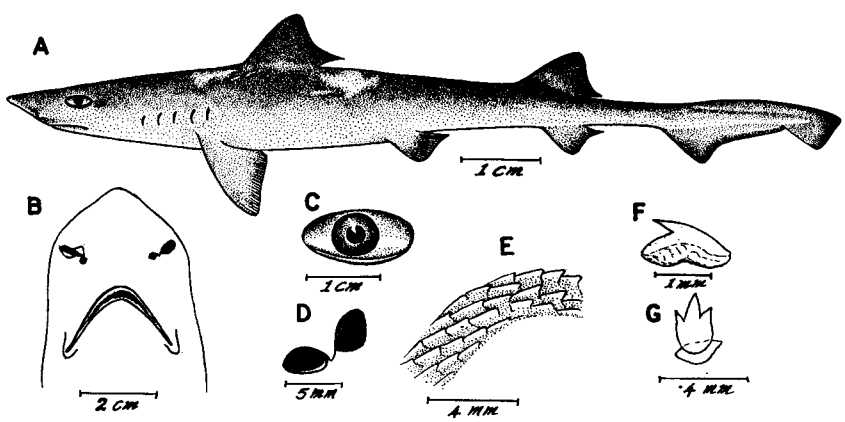

Fig. 3. *Eugaleus omanensis* NORMAN. — A) ♀, 435 mm, off Mandapam (Gulf of Mannar), 250 fathoms. — B) head showing deflected nasal flaps. — C) eye showing lower nicitating eye lid. — D) nasal flap. — E) dentition. — F) tooth. — G) dermal denticle of mature specimen.

*) While this paper was in press COMPAGNO & SPRINGER (1971, Fish. Bull., 69: 615-26) proposed the new genus *Iago* to accomodate this species (*Iago omanensis*).

of eye; nostrils slightly oblique, anterior margins with an outer flap and an inner flap with a median groove, (Fig. 3 D); width of nostril 3·5 in preoral distance, internarial space half of snout; labial fold well developed on both jaws, 1/3 of upper jaw and 1/4 of lower jaw (Fig. 3 B); gill slits equal in size but for first and fifth, the latter placed over pectoral peduncle, above the level of other gill openings; gill rakers absent.

Teeth $\frac{18 + 2 + 18}{18 + 2 + 18}$, small, with an oblique shallow cusp, 3-4 rows, not serrated, symmetrical on both jaws, base granulated and swollen with a transverse notch (Fig. 3 E, F); dermal denticles minute, tricuspidate in large specimens (350 mm and above, Fig. 3 G) and spike like with a single spine in small specimens (222 mm-350 mm).

Origin of first dorsal a little behind inner pectoral axil, middle of its base nearer to inner corner of pectoral than to pelvic origin, base 1·3 in second dorsal base; second dorsal fin originates just anterior to anal origin; caudal fin with well developed subterminal notch and rounded ventral lobe, terminal margin obliquely truncate and rather pointed in young specimens; anal shorter than second dorsal, its base 2/3 of that of second dorsal, originates a little in front of middle of second dorsal; pelvics originate nearer to first dorsal than to second dorsal; pectoral fin 1/4 in head, reaches beyond middle of first dorsal; precaudal pit absent.

Colour varies greatly, dark greyish dorsally, pale ventrally; pectoral axilla, gill slit margins, tip of first dorsal, second dorsal and caudal fin with dark grey pigmentation; irregular white patches in front and behind first dorsal or all over the body.

Distribution: Gulf of Aden and Gulf of Mannar.

Material: 1 ♀, CMFRI 5/642; ttl 435 mm; off Mandapam, Gulf of Mannar, 200 fathoms, trawl net; 8. IV. 1970. — 2 ♀, SMF 11466; ttl 315 and 233 mm; Gulf of Mannar, 8. IV. 1970. — 7 ♀, 8 ♂, CMFRI 5/642; ttl 222-397 mm; off Mandapam, Gulf of Mannar, 270 fathoms, trawl net; 8. II. 1971.

Since its first description by NORMAN (1939) based on a young specimen from Gulf of Aden, the species has not been reported. Drs. STEWART SPRINGER and L. J. F. COMPAGNO (personal communication) have collected 19 specimens of this species from Gulf of Aden to Gulf of Kutch. However the present record of it from Gulf of Mannar extends its distribution to further south.

Rhinobatidae.

Rhinobatos variegatus n. sp.

(Fig. 4.)

Holotype: ♀, CMFRI F. 176, total length 645 mm; Gulf of Mannar, off Mandapam, 200 fathoms; 2. III. 1970.

Diagnosis: Anterior nasal flap extends beyond posterior nasal margin, and laterally beyond the inner corner of nostrils and separated from that of other side by 1/3 the diameter of nostril; orbit 4·9 in snout, interspace between

first and second dorsal 2·9 times in base of first dorsal, snout with 3 lateral grey bands on each side and one median band.

Description:

Disc: extreme breadth 30·8 (199); snout length in front of: orbit 12·8 (83), mouth 14·8 (96); orbit: horizontal diameter 2·6 (17); interorbital space 3·2 (21); spiracle: length 1·2 (8), width 1·9 (12); distance between 4·8 (31); mouth: breadth 6·2 (40); nostrils: length 2·8 (18); distance between inner extension of flaps 1·0 (7); distance between inner end and mouth 1·7 (11); gill opening lengths: first 1·4 (9), second 1·2 (8), third 1·4 (9), fourth 1·2 (8), fifth 0·9 (6); first dorsal fin: vertical height 7·0 (45), base 4·5 (29); second dorsal fin: vertical height 6·8 (44), base 5·0 (32); caudal fin: upper margin 11·9 (77); pelvics: origin to tip 17·5 (113); distance: from tip of snout to centre of cloaca 41·1 (265), from centre of cloaca to tip of tail 59·9 (380); interspace between: first and second dorsal 13·0 (84), second dorsal and caudal 7·1 (46): all the proportions in per cent of total length followed by their actual length in millimetre in parenthesis.

Disc wedge shaped anteriorly, tip subacutely pointed, posterior margin evenly concave, overlapping pelvic origin by a distance slightly more than interspace of inner nostrils, first dorsal originates behind pelvic tip by a distance slightly more than preoral distance; lateral fold originates opposite to tip of pelvics and extends to origin of lower caudal.

Interorbital 3·9 in snout, mouth 2·5 in preoral distance. Spiracle about $^2/_5$ in orbit with two well developed posterior ridges of which the outer one larger than the inner, both curved inwards and 7·0 in orbit. Nostrils oblique, width equals the distance between inner ends, anterior margin with an inner and outer flaps,

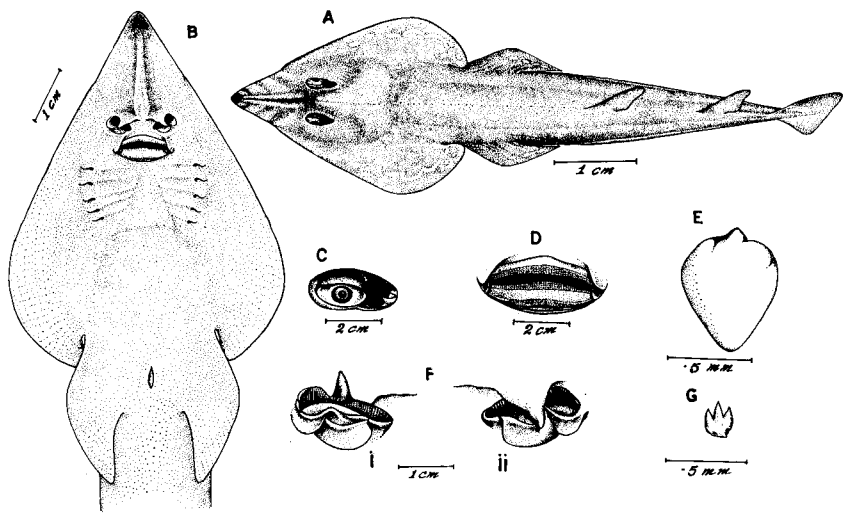

Fig. 4. *Rhinobatos variegatus* n. sp. — A) ♀ CMFRI F. 176, 645 mm, off Mandapam (Gulf of Manner), 250 fathoms. — B) ventral view. — C) eye and spiracle showing the ridges of spiracle. — D) mouth. — E) tooth. — F) nostrils showing the deflected flaps. — G) dermal denticle.

former well developed reaches beyond posterior margin and extends laterally to internarial space beyond inner corner of nostrils but separated from that of opposite side by half of internarial space; outer flap rudimentary, posterior margins with two well developed broad flaps (Fig. 4 F1, II). Interspace of rostral cartilage narrow anteriorly, wide posteriorly and confluent at anterior tip.

Teeth $\frac{32 + 32}{36 + 36}$, closely set, rhombic, arranged in rows (Fig. 4 D, E). Mouth with two rows of grooves at corners with upper and lower flaps. Dermal denticles closely set, tridentate with a short pedicle, median cusp longer (Fig. 4 G); about 36 minute tubercles along the mid line from nuchal region to first dorsal, about five minute tubercles anterior to orbit, tip of snout smooth.

Dorsal fins about equal height, base of second dorsal slightly more than that of first, obtusely triangular with rounded corner, anterior margin of first dorsal about twice its base, that of second dorsal 1·75 its base; interspace between first and second dorsal $2^4/_6$ times in first dorsal base, that between second dorsal and caudal 1·4 in second dorsal base; base of first dorsal $^1/_5$ in inner pelvic, inner margin slightly concave, rear ends of pectorals reach beyond the origin of pelvic, upper margin of caudal ahead of lower, $2^2/_5$ times in base of second dorsal.

Grey dorsally, ventrally pale, snout with 3 brown broad lateral bands on dorsal side and one medially; tip of snout pigmented ventrally; pectoral and pelvic fins with blue variegated markings.

Etymology: Based on the variegated markings of the pectoral and pelvic margins.

Discussion: *R. variegatus* differs from the known species with longer snout (4·9 in orbit), nostril equals to internarial space, 5·3 times in preoral length and about 0·5 in width of mouth; first dorsal base 1·5 in its height and 2·9 in interspace between first and second dorsal; extension of outer flap to internarial space and brown bands on the snout and pale blue markings over pectoral and pelvic fins.

R. lionotus and *R. annandalei* seem to be related to this species, but it differs from the former in having interspace of spiracle $2^2/_3$ in snout ($2^1/_3$ in *lionotus*), diameter of eye 4·9 in snout ($3^2/_5$ in *lionotus*), nostril twice in width of mouth ($1^2/_3$ in *lionotus*), 0·9 in internarial space ($1^1/_3$ in *lionotus*), first dorsal base 1·5 in height (equals height in *lionotus*). *R. annandalei* differs from *R. variegatus* n. sp. in having eyes $3^3/_5$-$3^2/_6$ in snout, internarial space $1^2/_5$ in nostril length (equals in *variegatus*) and the base of first dorsal $2^1/_5$ to $2^1/_4$ in interspace of first and second dorsal. However *variegatus* is closer to *lionotus* than to other species.

Summary.

A new species of skate *Rhinobatos variegatus* is described from Gulf of Mannar. *Eugaleus omanensis* NORMAN is reported for the first time from India since its description from Gulf of Aden. *Eridacnis alcocki* (MISRA) is synonymised with *E. radcliffei* SMITH. *Halaelurus hispidus* (ALCOCK) is described as it differs in certain details from the descriptions of the species from Andaman seas and as its young ones are much different from the adult in structure of dermal denticles, caudal fin and in colouration.

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