

# ON A COLLECTION OF GYRINIDAE (COLEOPTERA) IN THE ZOOLOGICAL SURVEY OF INDIA, WITH THE DESCRIPTIONS OF TWO NEW SPECIES

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To almost everyone making aquatic collection, the wriggling beetles (Gyrinids) are familiar for their gyrating mode of locomotion and the way they form schools or colonies on the surface of quiet or slow moving water near the vegetation or under shade of large stones. Hatch<sup>1</sup> inferred from the materials studied by him that the adults formed two ecological groups: among the Indian genera, *Aulonogyrus*, *Gyrinus* and most *Dineutus* fall under the first group thought to inhabit standing water, while *Orectochilus* and certain species of *Dineutus* belong to the second group which inhabit streams. I have, however, collected *Gyrinus* and *Orectochilus* in the waters of the same stream not very far from each other. It is generally agreed that their natural food consists of animals swimming on water, most probably mayflies and similar insects which spend their life over water and fall in water accidentally. They have not been observed to catch animals in water and feeding is said to take place only at the surface. In captivity they have been fed on a variety of food including some vegetation, freshly killed and disabled animals, raw meat, live mealy-bugs, bread and cracker crumbs, etc.; in each case it seems necessary that the food should float.

The present account deals with the material of Gyrinidae collected by the staff of the Zoological Survey of India from time to time since 1923, the earlier materials having been the subject of study by Ochs<sup>2</sup>.

Two species appear to be new and have been described in the following pages. The rest of the material is referable to well known species and do not call for comments, except for remarks on the geographical distribution in the case of a few species.

## *Orectochilus orissaensis*, sp. nov.

Form elongate, oval, moderately convex, a little more attenuated posteriorly than anteriorly. Head black except for the yellow labrum, pronotum and elytra black with lateral border yellow. Under surface reddish brown; legs, anal sternites and epipleurae yellow.

Labrum semicircular, less than twice as wide as long, finely punctate, with long yellow cilia in front. Head finely granulose at the frons and clypeus. Pronotum finely punctate, anterior margin convex in the middle and concave below the eyes forming an acute angle with the

<sup>1</sup> Hatch, M. H., *Bull. Brooklyn Ent. Soc.* XX, pp. 101-104 (1925).

<sup>2</sup> Ochs, G., *Rec. Indian Mus.* XXVII, pp. 193-204 (1925); XXXI, pp. 241-249, 250-252 (1929), *Catalogue of Indian Insects*, Part 19—Gyrinoidea, pp. 1-39 (1930).

lateral margin Pubescent margin on the pronotum not so broad posteriorly, dilated anteriorly, extending upto the middle of the eye, inner margin of the pubescent area concave. Scutellum small and triangular. Elytra (text-fig. 1d) convex, slightly obliquely truncate apically, sutural angle almost a right angle, apical angle sub-obtuse, not rounded, pointed. Pubescent area on the elytra narrow anteriorly, suddenly dilating into a lobe directed upwards and inwards at about a point one-third from the posterior end of the elytron, inner pubescent margin beyond the lobe deeply concave, touching the suture at the apex. Anterior tibia of male sub-parallel, narrowing posteriorly, anterior tarsus dilated almost as broad as the tibia but shorter than the latter.

Aedeagus (text-fig. 1c) a little longer than three-fourths of the length of the parameres, broad at base, narrowing towards the apex, a little constricted sub-apically.

Size.—Male, length 4.5 mm., width 2.2 mm.; Female, length 4.6 mm., width 2.2 mm.

*Type-specimens*.—*Holotype*, No. 9657/H4, India: Chahala nulla, Simlipal Hills, Mayurbhanj dist., Orissa, 8. 11. 1951 (B. Biswas. Coll.).

*Allotype*, No. 9658/H4, same particulars as holotype.

*Paratypes*, 19 exs. No. 5659/H4 to 9677/H4. Same particulars as holotype.

*Remarks*.—This species closely resembles *O. andamanarum* in general appearance, size and the character of the bright yellow labrum. Both the species are characterised by having one lobe of the elytral pubescence, which is small and rounded in *O. andamanarum*, while it is rather elongate, directed upwards and inwards in the present species. Posterior to the lobe, the inner margin of the elytral pubescence is comparatively more concave in the present species than in *O. andamanarum*.

#### ***Orechtichilus ribeiroi*, sp. nov.**

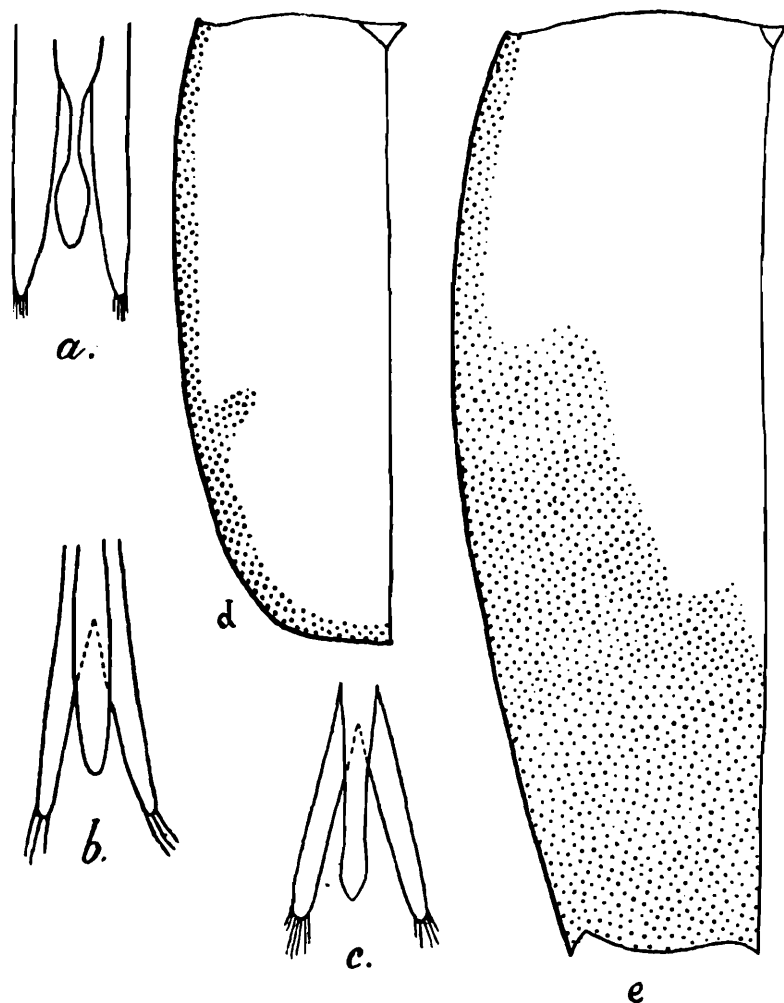
Form oblong, elongate, moderately convex. Head and pronotum black. Elytra dark brown. Undersurface dark brown, epipleurae, legs and anal sternites reddish brown.

Labrum semielliptical, coarsely punctate and with long yellow cilia in front. Head finely granulose at the frons and clypeus. Pronotum finely punctate, anterior margin minutely convex in the middle, concave below the eyes forming an acute angle with the yellow lateral margin. Pubescent margin broad posteriorly, slightly dilated anteriorly, reaching about the middle of the eye. Scutellum small and triangular. Elytra (text-fig. 1e) convex, slightly obliquely truncate posteriorly, outer apical angle prominent and pointed; sutural angle minutely pointed. Pubescent margin on the elytra sufficiently broad, almost uniformly wide in the anterior one-third; inner margin undulately dilating, bilobed and meeting the suture at the posterior quarter; anterior lobe convex beyond which the inner pubescent margin is slightly obliquely directed backwards to the suture; posterior lobe much smaller than the anterior one (rounded in the male and angular in the female), situated a little anterior to the posterior one-third. Male anterior tibia sub-parallel, broadened anteriorly, anterior tarsus dilated.

Aedeagus (text-fig. 1a) constricted in the middle one-third, narrowing towards the apex and rounded at the tip equal to four-fifth the length of the parameres.

Size.—Male, length 6.0 mm., width 7.5 mm. Female, length 6.8 mm. width 2.8 mm.,.

*Type-specimens.*—*Holotype*, No. 9678/H. India: Brahmani river, Bengal, 7-8. III. 1931 (S. Ribeiro Coll.).



TEXT-FIG. 1.—a. Male genitalia of *Orectochilus ribeiroi*, sp. nov.; b. Male genitalia of *O. haemorrhous* Reg.; c. Male genitalia of *O. orissaensis*, sp. nov.; d. Elytron of *Orectochilus orissaensis*, sp. nov.; e. Elytron of *O. ribeiroi*, sp. nov.

(Dotted portion on elytron indicates pubescent area).

*Allotype*,—No. 9679/H4. Same particulars as holotype,

*Paratypes*,—10 exs. No 9680/H4 to 9689/H4. Same particulars as holotype.

*Remarks.*—This species closely resembles *O. ritsemai* in shape and size but can be easily distinguished from it by its characteristic elytral pubescence. There is also a marked difference in the aedeagus of the two species; in the case of *O. ritsemai* the aedeagus (text fig. 1b) is almost uniformly wide, not constricted in the middle as in the present species.

## LIST OF SPECIES WITH LOCALITIES

Name of the species	Localities
<b>Tribe ENHYDRINI</b>	
1. <i>Dineutus spinosus</i> (Fabr.)	BIHAR : Morel river, near Burhait, Santal Parganas, 26. II. 1938 ( <i>H. S. Rao &amp; H. A. Hafiz</i> ). BENGAL : Teesta river, Darjeeling Dist.,—X. 1931 ( <i>S. L. Hora</i> ).
2. <i>D. unidentatus</i> Aube .	BIHAR : Kusma, Santal Parganas, 28. II. 1938, ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); sta. 12, Dist. Hazaribagh, 30. X. 1928, ( <i>M. Sharif</i> ); BENGAL : Calcutta, 25. VII. 1950 ( <i>T. G. Vazirani</i> ); EASTERN GHATS : sta. 54, Cuddapah Dist., 29. VII. 1929, ( <i>H. S. Pruthi</i> ); Yercaud, 4600 ft., Shevaroy hills, 2-15. VI. 1929 ( <i>H. S. Pruthi</i> ); SIND : sta. 9, Hat river Karachi, 19. XII. 1927, ( <i>B. Prasad &amp; B. N. Chopra</i> ). <i>Remarks on distribution.</i> —It is a widely distributed species and has been recorded from India, Ceylon, Burma, Malaya Peninsula, Java, Tonkin, East Indies, Annam and China. Ochs (1930), considers Karachi as doubtful within the range of its distribution, the present specimens mentioned above confirm the occurrence of the species in Sind.
3. <i>D. indicus</i> Aube . . .	BENGAL : Kalimpong, Darjeeling Dist. 29. 1. 1931, ( <i>S. L. Hora</i> ). BIHAR : Morel river, Santal Parganas, 23. XI. 1938, ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); Gurmani river, Santal Parganas, 29. 1. 1931, ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); Parasnath hills and Ranchi Survey,—IV. 1948, ( <i>Sinha &amp; Nath</i> ); ORISSA : sta 5, Mayurbhanj Dist., Simlipal hills, 11. II. 1951, ( <i>B. Biswas</i> ); PUNJAB : sta. 3, Simla Hills, 23. VI. 1923 ( <i>S. L. Hora</i> ); RAJASTHAN : Rajputana Survey,— III. 1948 ( <i>K. S. Pradhan</i> ); BOMBAY : sta. 2, Gokak, Belgaum Dist., — XI. 1928, ( <i>B. Prasad &amp; H. S. Kao</i> ); EASTERN GHATS : 6-15. VI. 1929, ( <i>H. S. Pruthi</i> ); sta. 15, Palkonda hills, 20-26. VIII. 1929, ( <i>H. S. Pruthi</i> ); sta. 16, 4600 ft., Shevaroy hills, 12. VI. 1929, ( <i>H. S. Pruthi</i> ).
<b>Tribe GYRININI</b>	
4. <i>Paragyrrinus arrowi</i> (Reg.) .	PUNJAB : Kangra Valley, 2. VI. 1946, ( <i>S. L. Hora</i> ).
5. <i>Aulonogyrrus obliquus</i> (Walk.)	EASTERN GHATS : 15. VI. 1929, ( <i>H. S. Pruthi</i> ).
6. <i>Gyrrinus convexiusculus</i> Mac.	EASTERN GHATS : 3-5. VIII. 1929, ( <i>H. S. Pruthi</i> ); sta. 30, Chitteri, Salem Dist., 20—22. VI. 1929, ( <i>H. S. Pruthi</i> ); sta. 63, Palkonda hills, 3. VIII. 1929 ( <i>H. S. Pruthi</i> ); ORISSA : sta. 5, Simlipal hills, Mayurbhanj Dist., II. II. 1951, ( <i>B. Biswas</i> ). BIHAR : Chotnagpur, Ranchi, Hesal, 19. III. 1951, ( <i>A. P. Kapur</i> ).
<b>Tribe ORECTOCHILINI</b>	
7. <i>Orectochilus semivestitus</i> Guerin.	EASTERN GHATS : 6-15. VI. 1929, ( <i>H. S. Pruthi</i> )
8. <i>O. oblongiusculus oblongiusculus</i> Reg.	BENGAL : Teesta Valley, Darjeeling Dist., 14. VI. 1934, ( <i>S. L. Hora</i> ); PUNJAB : Kangra valley, 5300 ft. 2. VI. 1936, ( <i>S. L. Hora</i> ).
9. <i>O. oblongiusculus parkeri</i> Ochs	PUNJAB : sta. 4, Simla hills, 26. VI. 1923, ( <i>S. L. Hora</i> ).
10. <i>O. limbatus</i> Reg. . . .	BIHAR : Gurmani river, Ranchi Dist., —. X. 1938, ( <i>M. Sharif</i> ); Gurmani river, Santal Parganas, 1938, ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); Morel river, Santal Parganas, 1938, ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); U. P. : Rihand river, Mirzapur, —. IV. 1947, ( <i>H. A. Hafiz</i> ).

LIST OF SPECIES WITH LOCALITIES—*contd.*

Name of the species	Localities
<b>Tribe ORECTOCHILINI—<i>contd.</i></b>	
11. <i>O. cuneatus</i> Reg.	PUNJAB : sta. 4, Simla hills, 26. VI. 1923 ( <i>S. L. Hora</i> ); BENGAL : Teesta Valley, sta. 1, Teesta 3. II. 1953.
12. <i>O. discifer</i> (Walk)	EASTERN GHATS : 2-15. VI. 1939 ( <i>H. S. Pruthi</i> ); BIHAR : Parasnath hills and Ranchi Survey,—IV. 1948, ( <i>Sinha and Nath</i> ). <i>Remarks on distribution.</i> —It has been previously recorded from Ceylon, Central India & Calcutta by Ochs (1930). The present record confirms its range of distribution to Northern India.
13. <i>O. productus</i> Reg.	BENGAL : Brahmani river, 7-8. III. 1931 ( <i>S. Ribeiro</i> ).
14. <i>O. orissaensis</i> , sp. nov.	ORISSA : sta. 2, Chahala nulla, Simlipal hills, Mayurbhanj Dist., 8. II. 1951 ( <i>B. Biswas</i> ).
15. <i>O. fletcheri</i> Ochs	BENGAL : Brahmani river, 7-8. III. 1931 ( <i>S. Ribeiro</i> ).
16. <i>O. haemorrhous</i> Reg.	BIHAR : Kusma, Santal Parganas, 28. II. 1938 ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); BENGAL : Brahman river, 7-8. III. 1931 ( <i>S. Ribeiro</i> ).
17. <i>O. ritsemai</i> Reg.	BIHAR : Morel river, Santal Parganas, 1938 ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); U.P. : Rihand river, Mirzapur, April-May, 1947 ( <i>H. A. Hafiz</i> ); REWA STATE : Ner, budda Survey, sta. 39. 2650 ft., II. 1927 ( <i>H. S. Pruthi</i> ).
18. <i>O. ribeiroi</i> , sp. nov.	BENGAL : Brahmani river, 7-8. III. 1931 ( <i>S. Ribeiro</i> ).
19. <i>O. undulans</i> Reg.	U.P. : Rihand river, April-May, 1947 ( <i>H. A. Hafiz</i> ). <i>Remarks on distribution.</i> —This is being recorded from India for the first time. Its already known distribution is from Tonkin.
20. <i>O. gangeticus</i> (Wied.)	BIHAR : Taljhari, Santal Parganas, 20. II. 1938 ( <i>H. S. Rao &amp; H. A. Hafiz</i> ); U.P. : Rihand river, Mirzapur, April-May, 1947 ( <i>H. A. Hafiz</i> ).
21. <i>O. spiniger</i> Reg.	ORISSA : Simlipal hills, sta. 30, Mayurbhanj Dist., 18. II. 1951 ( <i>B. Biswas</i> ). <i>Remarks on distribution.</i> —Regimbert <sup>1</sup> mentions a female example from "Inde" in Wehncke collection, referable to this species. In the above collection also there is a female example referable to this species. It has been recorded earlier from Malacca, Cambodia, Cochin, China, Laos, French Indo-China and Sumatra.
22. <i>O. indicus</i> Reg.	EASTERN GHATS : 1929 ( <i>H. S. Purthi</i> ).
23. <i>O. murinus</i> Reg.	BENGAL : Kalimpong, Darjeeling Dist., 29. I. 1931; PUNJAB : sta. 4, Simla hills. 26. VI. 1923 ( <i>S. L. Hora</i> ).

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<sup>1</sup> Regimbert. M., *Ann. Soc. ent. Fr.* (6) III, pp. 436-438, pl 12, fig. 129 (1883).