

Zeitschrift: Entomologica Basiliensia
Herausgeber: Naturhistorisches Museum Basel, Entomologische Sammlungen
Band: 4 (1979)

Artikel: Coleoptera: Fam. Georissidae, Hydraenidae, Hydrophilidae und Ptilodactylidae
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DOI: <https://doi.org/10.5169/seals-980753>

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Ergebnisse der Bhutan-Expedition 1972 und Indien-Nepal-Expeditionen 1975–1977 des Naturhistorischen Museums in Basel

Coleoptera: Fam. Georissidae, Hydraenidae, Hydrophilidae und Ptilodactylidae

by M. Satô

Abstract: One species of Georissidae, 2 species of Hydraenidae, 16 species of Hydrophilidae and 11 species and 1 subspecies of Ptilodactylidae from Bhutan, India and Nepal are reported. Of these 2 species of Hydraenidae, 3 species of Hydrophilidae and 10 species and 1 subspecies of Ptilodactylidae are new to science, namely: *Hydraena (Hydraena) tenjikuana* (India), *wittmeri* (India), *Cercyon (Cercyon) pseudodilutum* (India), *Oocylus bhutanicus* (Bhutan), *Crenitis orientalis* (India, Bhutan), *Ptilodactyla brancuccii* (Nepal, Bhutan), *P. brancuccii darjeelingiana* (India), *P. jiriensis* (Nepal), *P. miscella* (Bhutan), *P. bicolor* (Bhutan), *P. ardua* (India), *P. godavariensis* (Nepal), *P. wittmeri* (Nepal, Bhutan), *P. baroniurbanii* (Nepal), *P. bhutanica* (Bhutan) and *P. multifaria* (Nepal).

This is my second report on the aquatic beetles captured by the Bhutan-Expedition 1972 of the Naturhistorisches Museum Basel. For that result, nine species of Hydrophilidae and five species of Ptilodactylidae are treated in the present paper. All of them are new to the fauna of Bhutan.

Additionally, one species of Georissidae, two species of Hydraenidae, ten species of Hydrophilidae and three species of Ptilodactylidae from India and six species of Ptilodactylidae from Nepal are treated herewith. These specimens have been collected by the India-Nepal-Expedition 1975–1977 of the same Museum.

Among them two species of Hydraenidae, three species of Hydrophilidae and ten species and one subspecies of Ptilodactylidae are described as new.

I am greatly indebted to Dr. Walter Wittmer for the opportunity given to study the collection of aquatic beetles obtained on his expeditions.

Georissidae

Genus *Georissus* Latreille

Georissus LATREILLE, 1809, Gen. Curst. et Ins., 4: 377.

Georyssus: GYLLENHAL, 1813, Ins. Suec., 3: 675.

Type-species: *Byrrhus crenulatus* Rossi, 1774.

Subgeneric categories of the genus proposed by me in 1972. In this occasion, I shall show a key for subgenera of the genus *Georissus*, which is not given in the original description.

Key to subgenera

- 1 (4) Head granulate in front and provided with a few foveae in the hind part. Pronotum sparsely granulate. Elytral granules not so much pronounced.
- 2 (3) Pronotum distinctly grooved on the middle and along the anterior and on the lateral margins; sides just before the hind angles not dentate. Elytra provided with some rows of distinct punctures. *Georissus* s.str.
- 3 (2) Pronotum lacking a distinct groove on disc; sides just before the hind angles distinctly dentate. Elytra provided with some rows of granules. *Neogeorissus* M.Satô, 1972 (type-species: *G. (Ne.) japonicus* M.Satô, 1972)
- 4 (1) Head provided with some distinct foveae in whole. Pronotum closely granulate. Elytra distinctly granulate and bearing four longitudinal carinae. *Nipponogeorissus* M.Satô, 1972 (type-species: *G. (Ni.) granulatus* M.Satô, 1972)

1. *Georissus (Georissus) fusicornis* Champion

Georyssus fusicornis CHAMPION, 1923, Ent. Month. Mag., (3) 9: 175 (Haldwani, Kumaon).

1 ♀, Lebong (alt. 1,600–1,800 m), Darjeeling Distr., India, July 2, 1975, W. Wittmer.

Distribution: India.

Since its original description from Kumaon, this is the first record of the species.

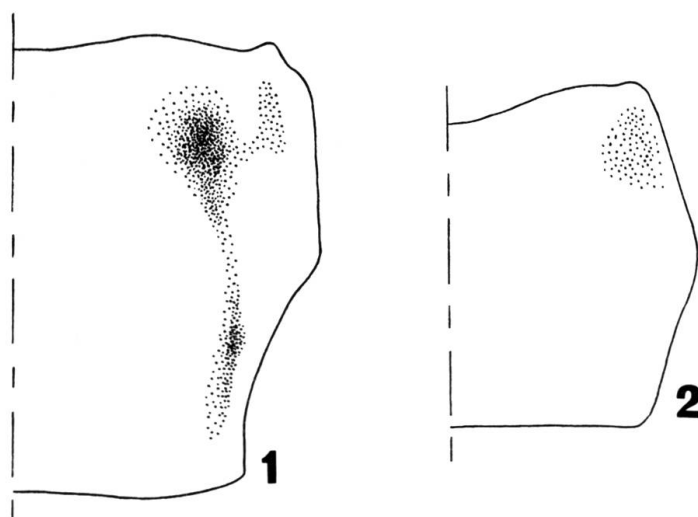
Hydraenidae

1. *Hydraena (Hydraena) tenjikuana* n.sp. (Fig. 1)

Dorsal surface brownish black and shining, ventral surface black and opaque; head black, antennae, maxillary palpi, legs, peripheries of pronotum and elytra brown to yellowish brown.

Head slightly convex, sparsely and strongly punctate, somewhat impressed at inner sides of eyes which are coriaceous; integument smooth; maxillary palpi slender, approximate ratio of length 12:5:9. Pronotum moderately convex, transverse, broadest at middle, thence gently narrowed anteriorly and constricted posteriorly; margins distinctly crenulate; disc sparsely and strongly punctate, the punctures being coarser and more pronounced than those on the head; sublateral longitudinal impression somewhat distinct and its apical portion oval and deep; integument smooth on central area and rugose on lateral areas. Elytra moderately convex, broadest a little behind the middle, thence slightly narrowed anteriorly and distinctly rounded posteriorly; lateral sides reflexed; margins feebly crenulate; disc provided with 15 punctate striae, the punctures in the striae are strong, becoming finer posteriorly and their interspaces narrower than their own diameter, integument smooth.

Ventral surface coriaceous, closely covered with cinereous pubescence except for shining mentum, two oval portions of metasternum and 5th to 7th abdominal sternites; mentum sparsely and rather distinctly



Figs. 1, 2: Pronotum; 1, *Hydraena (Hydraena) tenjikuana* n.sp. 2, *Hydraena (Hydraena) wittmeri* n.sp.

punctate; basal punctures strong; metasternum distinctly impressed at anterior area. Legs slender.

Length: 2.4 mm; width: 1.1 mm.

Holotype: ♀, Chim-Khona (Ghum) (alt. 2,200 m), Darjeeling Distr., India, May 28, 1975, W. Wittmer. Paratype: ♀, same locality as the holotype, June 4, 1975, W. Wittmer. The type-series is deposited in the collection of the Naturhistorisches Museum Basel.

This new species resembles *H. (H.) bihamata* Champion from India, but can be separated from the latter by the pronotum provided with sublateral longitudinal impressions and lacking a median sulcus.

The new name, *tenjiku*, means India in the old language of Japan.

2. *Hydraena (Hydraena) wittmeri* n. sp. (Figs. 2, 3)

Body oblong oval, shining above and subopaque beneath. Color almost yellowish brown, except for the posterior area of head and the ventral surface which are somewhat darker than the other parts.

Head rather flattened, sparsely and distinctly punctate, the punctures being separated one from another by about a half their diameter; clypeus finely punctate, with distinct suture; maxillary palpi slender, relative length 10 : 5 : 6. Pronotum slightly convex, transverse, broadest at near the middle, thence narrowed both anteriorly and posteriorly; margins obsolete crenulate; disc slightly concave at antero-lateral portions, sparsely and distinctly punctate, the punctures being coarser than those of head, separated one from another by about a half of their diameter. Elytra moderately convex, subparallel-sided at basal two thirds, thence rounded posteriorly; lateral sides more or less reflexed; disc provided with 15 punctate striae, the punctures in striae are distinct, longitudinally separated one from another by half their diameter, each bearing a fine white hair.

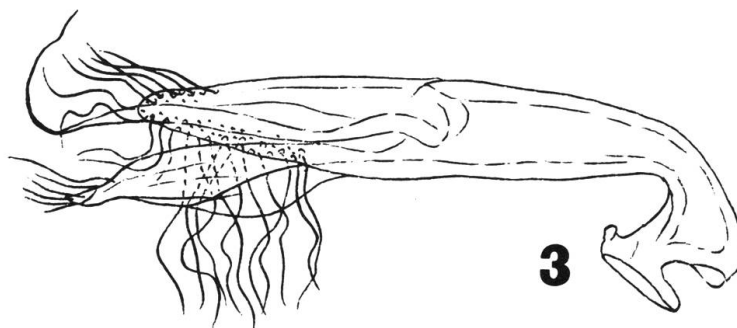


Fig. 3: Male genitalia of *Hydraena (Hydraena) wittmeri* n. sp.

Ventral surface covered with cinereous pubescence; mentum finely and sparsely punctate; pro- and mesosternum carinate medially; metasternum hollowed just behind the middle. Male genitalia as figured.

Length: 1.60 mm; width: 0.75 mm.

Holotype: ♂, Tiger Hill (alt. 2,500 m), Darjeeling Distr., India, May 12, 1975, W. Wittmer. The type is deposited in the collection of the Naturhistorisches Museum Basel.

The present new species can be distinguished from *H. (H.) dimorpha* d'Orchymont from India for the slender maxillary palpi, the unicolor pronotum and the distinct and oval punctures on elytra.

The species is dedicated to Dr. W. Wittmer, who has given me the opportunity to study it and collected the interesting specimen.

Hydrophilidae Sphaeridiinae

1. *Dactylosternum hydrophiloides* (MacLeay) (Fig. 4)

Sphaeridium hydrophiloides MACLEAY, 1825, Annul. Java.: 36 (Java).

Cyclonotum nitidum CASTELNAU, 1940, Hist. Nat. Ins., II: 58.

Cyclonotum rubripes BOHEMAN, 1859, Eugen. Resa.: 24.

30 exs., near Kalimpong, Darjeeling Distr., India, Feb. 18, 1975, B. Bahadur; 1 ex., Samchi (alt. 300 m), Bhutan, May 7–11, 1972.

Distribution: India, Bhutan, Indo-china, China, Formosa, Philippines, Borneo, Celebes, Sumatra, Java, Mentawai, Buru, Andaman.

This species is rather common in tropical Asia, though the male genitalia of the species is hitherto illustrated.

2. *Sphaeridium cameroni* d'Orchymont (Fig. 5)

Sphaeridium Cameroni D'ORCHYMONT, 1926, Bull. Ann. Soc. ent. Belgique, 66: 203 (Mohand Rau, Siwaliks).

1 ♂, 2 ♀♀, near Kalimpong, India, Oct., Nov. 17, 1975, Bahadur.
Distribution: India.

The male genitalia of the species are distinctly different from those of related species, viz. *dimidiatum* and *severini*, as figured.

3. *Sphaeridium dimidiatum* Castelnau

Sphaeridium dimidiatum CASTELNAU, 1940, Hist. Nat. Ins., II: 60.

1 ♀, near Kalimpong, India, Oct., 1975, B. Bahadur.

Distribution: India, Indo-china, China, Ceylon, Formosa, Ryukyus, Philippines, Borneo, Sumatra, Java, Sunda Is.

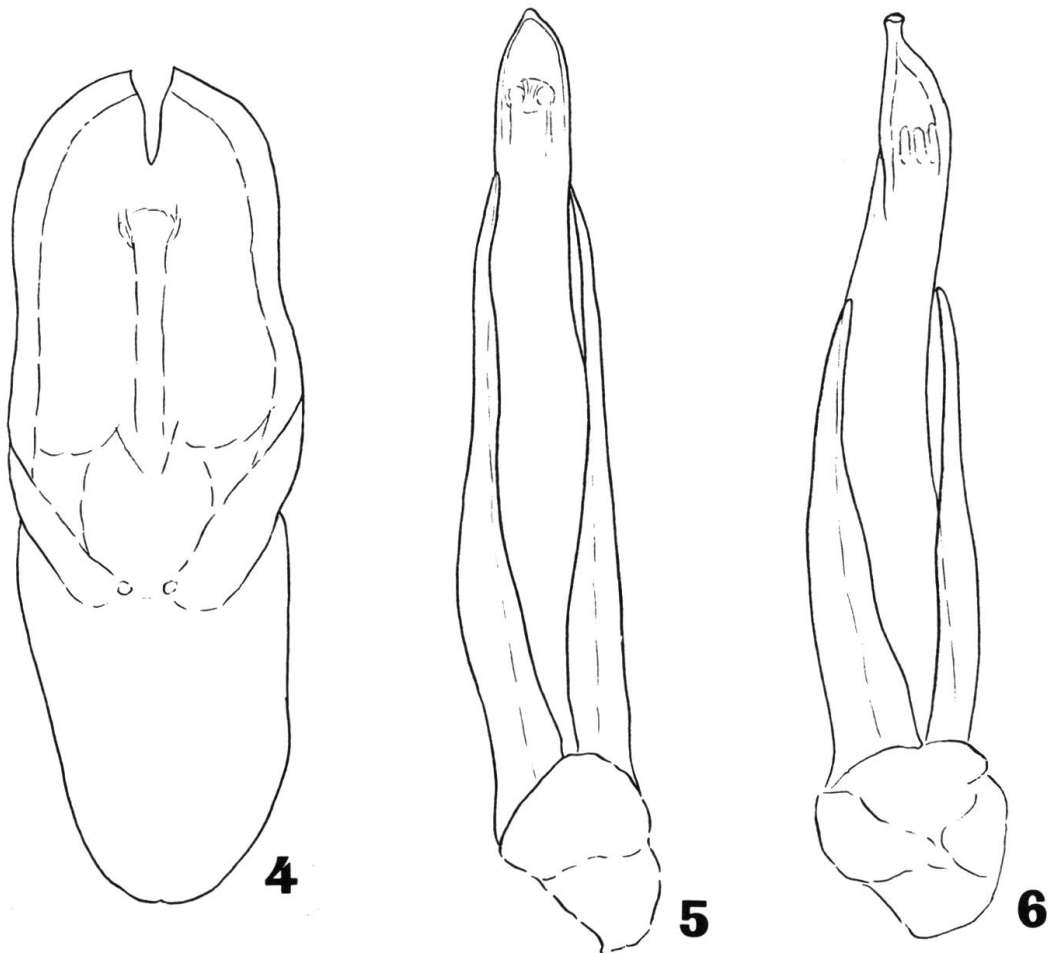
4. *Sphaeridium severini* d'Orchymont (Fig. 6)

Sphaeridium Severini d'ORCHYMONT, 1919, Ann. Soc. ent. France, 88: 117 (Mahé, Côte du Malabar).

1♂, 1♀, near Kalimpong, India, no exact data, B. Bahadur.

Distribution: India, Cambodia, Sumatra.

The central spine of underside on hind tibia seems to be different in respective specimen. D'ORCHYMONT (1919, 1923) described that the left and the right hind tibia each have a sole spine in his original description and the left have a sole and the right have two in his second report.



Figs. 4–6: Male genitalia: 4, *Dactylosternum hydrophiloides* (MacLeay). 5, *Sphaeridium cameroni* d'Orchymont. 6, *Sphaeridium severini* d'Orchymont.

But, examining specimens I found two spines on each hind tibia. Male genitalia are illustrated for the first time.

5. *Coelostoma* (*Lachnocoelostoma*) *horni* (Régimbart)

Cyclonotum horni RÉGIMBART, 1902, Ann. Soc. ent. France, 71: 474 (Ceylon).

Cyclonotum orbiculare: RÉGIMBART, 1903, Ann. Soc. ent. France, 72: 337.

1♂, Samchi, Bhutan, May 9, 1972.

Distribution: India, Ceylon, Indo-china, China, Senegal, Mozambique, Transvaal, Maurice.

This is new to the fauna of Bhutan.

6. *Coelostoma* (*Holocoelostoma*) *stultum* (Walker)

Hydrobius stultum WALKER, 1858, Ann. Mag. nat. Hist., (3) 2: 209 (Ceylon).

Cyclonotum simplex SHARP, 1874, Trans. Ent. Soc. London: 419 (Japan).

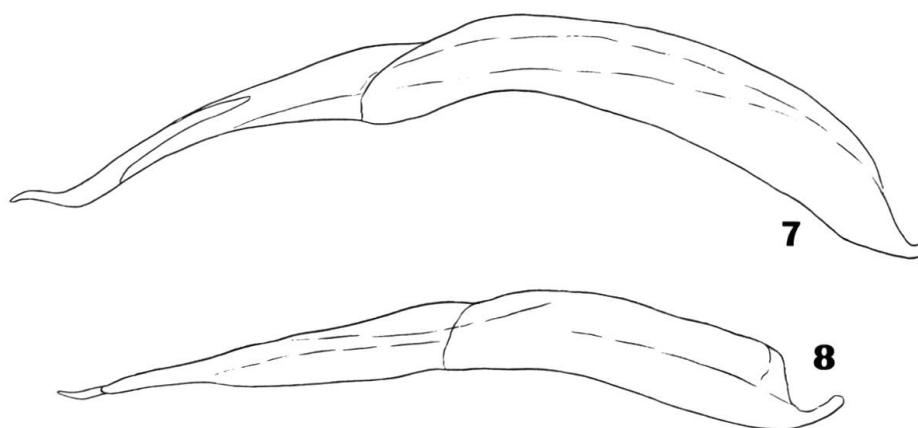
1♂, Phuntsholing (alt. 200–400 m), Bhutan, May 15, 1972.

Distribution: India, Ceylon, Indo-china, Japan, Formosa, Sumatra.

This species is common in the Southeast Asia, but Bhutan is a newly recorded locality.

7. *Pachysternum cardoni* d'Orchymont (Figs. 7, 9)

Pachysternum Cardoni D'ORCHYMONT, 1926, Bull. Ann. Soc. ent. Belgique, 66: 220 (Barway, India).



Figs. 7, 8: Lateral aspect of male genitalia; 7, *Pachysternum cardoni* d'Orchymont. 8, *Pachysternum nigrovittatum* Motschulsky.

3 exs., near Kalimpong, India, Feb. 18, 19, 1975, B. Bahadur.

Distribution: India.

The species is distinctive in the genus *Pachysternum* for the larger body and the male genitalia.

8. *Pachysternum nigrovittatum* Motschulsky (Figs. 8, 10)

Pachysternum nigrovittatum MOTSCHULSKY, 1863, Bull. Soc. Imp. Nat. Moscou, 36 (2): 447 (Ceylon).

1 ex., near Kalimpong, India, Oct. 19, 1975, B. Bahadur.

Distribution: India, Ceylon, Indo-china, Singapore, Hongkong.

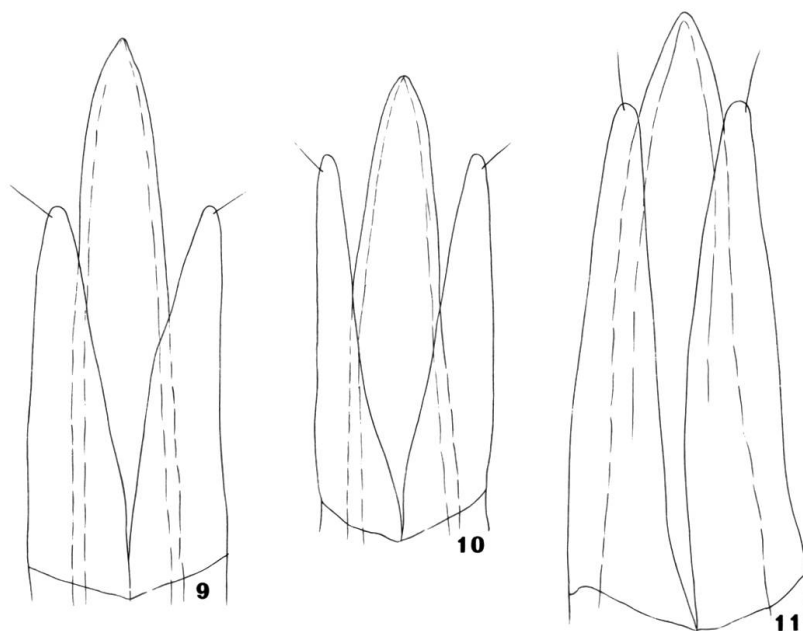
The figure of the male genitalia is drawn on a specimen from Ceylon (1♂, XII, 1881–IV, 1882, G. Lewis leg.).

9. *Pachysternum stevensi* d'Orchymont

Pachysternum stevensi D'ORCHYMONT, 1926, Bull. Ann. Soc. ent. Belgique, 66: 220 (Shempagonus, India).

7 exs., near Kalimpong, India, Feb. 18, 1975 and no exact data, B. Bahadur,

Distribution: India, Indo-china.



Figs. 9–11: Apical portion of male genitalia of *Pachysternum*-species; 9, *P. cardoni* d'Orchymont. 10, *P. nigrovittatum* Motschulsky. 11, *P. stevensi* d'Orchymont.

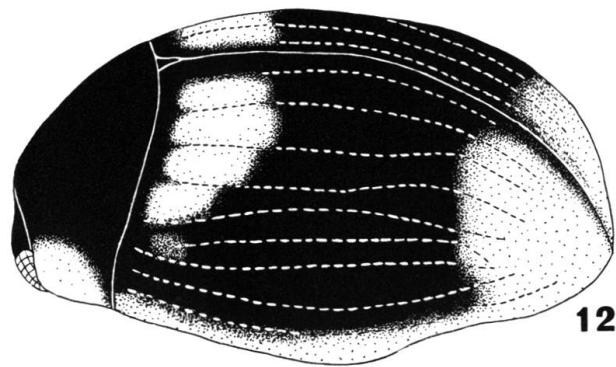


Fig. 12: Dorso-lateral aspect of body of *Pachysternum stevensi* d'Orchymont.

Elytral marking of the species as shown in the figure is distinctive from *nigrovittatum* which is akin to the present species, as well as the male genitalia is pronounced.

10. *Cercyon* (*Cercyon*) *atricapillum* (Marshall) (Fig. 13)

Dermestes atricapillus MARSHAM, 1802, Col. Brit.: 72.

Dermestes nigriceps MARSHAM, 1802, Col. Brit.: 72.

Dermestes laevis MARSHAM, 1802, Col. Brit.: 73.

Cercyon atriceps STEPHENS, 1829, Ill. Brit. Ent. Mand., II: 151.

Cercyon testaceum STEPHENS, 1829, Ill. Brit. Ent. Mand., III: 152 (in part).

Cercyon vicinalis WALKER, 1859; Ann. Mag. nat. Hist., (3) 3: (258).

4 exs., Samchi (alt. 300 m), Bhutan, May 7–11, 1972.

Distribution: Europe, Africa, S.E. Asia, N. & S. America.

The male genitalia are illustrated by VOGT (1970), but his figure is insufficient because it does not show the apex of paramera destitute of pubescence.

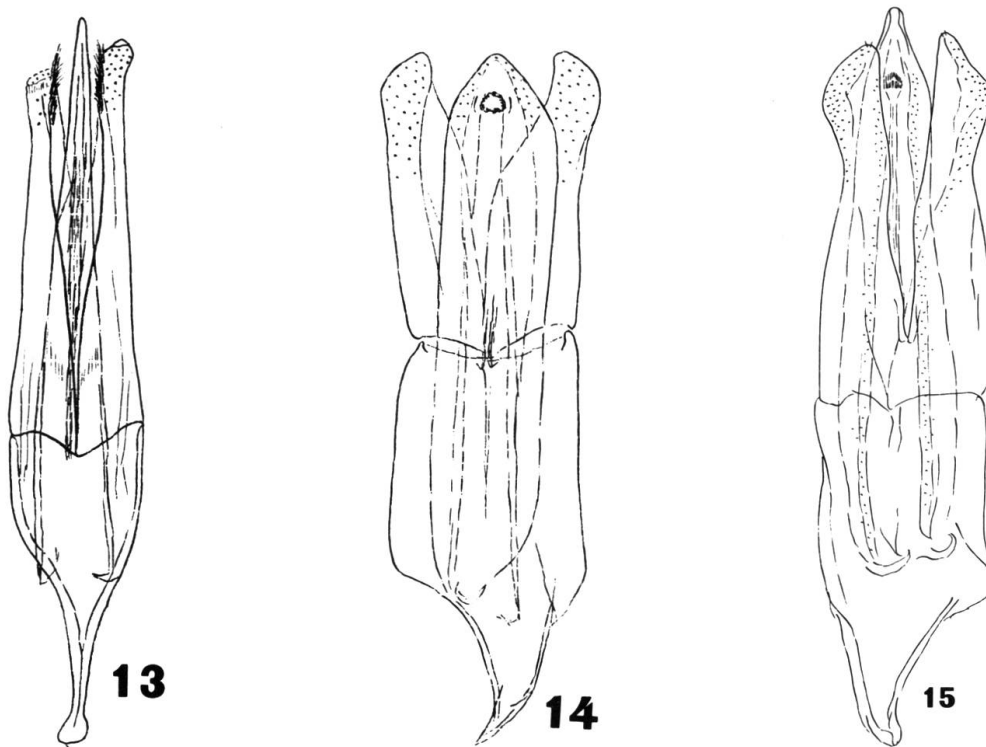
11. *Cercyon* (*Cercyon*) *dilutum* Régimbart (Fig. 14)

Cercyon dilutus RÉGIMBART, 1903, Ann. Soc. ent. France, 72: 338 (Mahé).

2 exs., Lebong (alt. 1,600–1,800 m), Darjeeling Distr., India, May 8, 1975, W. Wittmer; 1 ex., 87 km von Phuntsholing (alt. 1,700 m), Bhutan, May 22, 1972.

Distribution: India, Bhutan.

The male genitalia are figured for the first time in the present paper.



Figs. 13–15: Male genitalia: 13, *Cercyon (Cercyon) atricapillum* (Marsham). 14, *Cercyon (Cercyon) dilutum* Régimbart. 15, *Cercyon (Cercyon) pseudodilutum* n.sp.

12. *Cercyon (Cercyon) pseudodilutum* n.sp. (Fig. 15)

Very closely allied to *C. dilutum* Régimbart. It differs from it in having the elytral punctures more or less distinct, the mesosternal elevation somewhat broader and the male genitalia differently structured. The following color pattern is also characteristic for the present species: Head black except for obscurely brownish vertex; pronotum black, with broad lateral margins and narrow anterior margin which are reddish brown. Elytra reddish brown, basal margin narrowly and basal half of lateral margins broadly blackened. Ventral surface darkened.

Length: 2.4 mm; width: 1.6 mm.

Holotype: ♂, Lebong (1,600–1,800 m), Darjeeling Distr., India, May 8, 1975, W. Wittmer. The type is preserved in the collection of the Naturhistorisches Museum Basel.

13. *Cercyon (Cercyon) lividulum* d'Orchymont

Cercyon (s.str.) *lividulus* D'ORCHYMONT, 1926, Bull. Ann. Soc. ent. Belgique, 66: 204 (Nilghiris).

1♀, Samchi (alt. 300 m), Bhutan, May 7–11, 1972.

Distribution: India, Bhutan.

This is the first record from Bhutan for the species.

Hydrophilinae

14. *Oocyclus bhutanicus* n. sp. (Fig. 16)

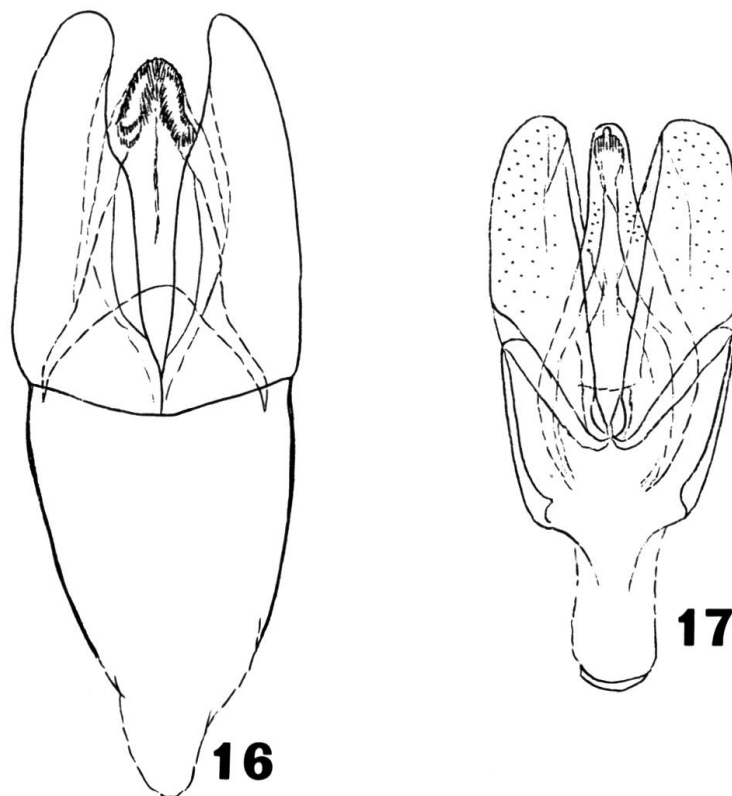
Body hemispherical, polished above, more or less shining beneath. Color mostly black with aeneous sheen; legs, abdomen and stipes brown; antennae, maxillary palpi and mouthparts yellowish brown.

Head about 1.7 times as broad as long; surface closely and finely punctate, the punctures being separated one from another by 1 to 2 times their diameter, the sides of eyes bearing a series of setiferous punctures; eyes moderate, the distance between them about 4 times as broad as the width of an eye; maxillary palpi moderate in length, relative length 2:4:3:6. Pronotum about 2.6 times as broad as long; sides gently narrowed anteriorly; each angle obtuse; surface closely punctate as those on head and provided with few setiferous punctures on anterolateral portions. Scutellum finely punctate. Elytra well convex, about 1.2 times as long as broad; surface closely and finely punctate, the punctures almost as same as those on head, but more or less rugose on apical area; distinct punctures scattered on lateral areas in addition to the primary punctures; scarce and fine pubescence recognized.

Ventral surface closely clothed with aurocinereous pubescence. Mentum obsoletely and sparsely punctate in front and bearing few, short hairs on sides. Prosternum tectiform, medio carinate. Mesosternum sparsely pubescent, triangularly pointed at apex. Metasternum convex at the middle; posterocentral area polished; anterior portion lanceolately produced. Trochanter sparsely pubescent; front femora finely and sparsely punctate and pubescent on basal third; mid femora sparsely and distinctly punctate; hind femora closely and distinctly punctate; tibiae provided with some series of distinct spines; approximate ratio of each tarsal length as follows: front—3:2:2:2:5, middle—3:5:3:2:6, hind—5:7:4:3:3. Male genitalia as figured.

Length: 4.1 mm; width: 2.4 mm.

Holotype: ♂, 87 km von Phuntsholing (alt. 1,700 m), Bhutan, April 30, 1972. The type is deposited in the collection of the Naturhistorisches Museum Basel.



Figs. 16, 17: Male genitalia: 16, *Oocyclus bhutanicus* n.sp. 17, *Crenitis orientalis* n.sp.

This new species is somewhat allied to *O. latus* d'Orchymont from Ceylon, but can be distinguished from it in the body's larger size, in the entirely black color on the dorsal surface and in the elytral punctures of two different kinds.

15. *Crenitis orientalis* n.sp. (Fig. 17)

Body oval, well convex, somewhat shining above, subopaque beneath. Head blackened, pronotum and elytra brown to dark brown, but peripheries and apical third of elytra paler than the rest in general, sometimes entirely brown; ventral surface dark brown; antennae and maxillary palpi yellowish brown; mouthparts and legs brown.

Head about 2.1 times as broad as long; surface closely and finely punctate, punctal interspaces being 1.5 to 2 times the diameter of a puncture, slightly impressed at each side on the middle; integument microreticulate; frontoclypeal suture gently emarginate; labrum transverse, closely and finely punctate, finely microreticulate on the integu-

ment; eyes rather small, the distance between them about 5.5 times as broad as the width of an eye; maxillary palpi moderate in length, 1st joint longer, 2nd small, 3rd elongate, approximate ratio of respective joints 5 : 2 : 4. Pronotum about 2.6 times as broad as long, broadest near the base; lateral margins gently curved anteriorly; posterior margin slightly trisinate; surface closely and finely punctate: punctual interspaces being 2 to 3 times the diameter of a puncture. Elytra moderately convex, about 1.3 times as long as broad; sutural stria traced at apical three fourths; surface closely and finely punctate, the punctures somewhat longitudinally arranged as striae and their interspaces about half a diameter of a puncture.

Ventral surface shagreened and almost covered with fine and close pubescence. Mentum finely punctate, but transversely striolate at the apical area. Mesosternum transversely elevated in front. Metasternum somewhat elevated medially. Legs slender; femora microreticulate; tibiae spined. Male genitalia as figured. Sex dimorphism not pronounced, but the body more or less larger in female.

Length: 2.3–3.0 mm; width: 1.3–1.8 mm.

Holotype: ♂, Tiger Hill, Darjeeling Distr., India, May 27, 1975, W. Wittmer. Paratypes: 2 exs., Tiger Hill, May 27, 1975, W. Wittmer; 8 exs., Tiger Hill (alt. 2150 m), May 7, 1975, W. Wittmer; 3 exs., Tiger Hill (alt. 2,500 m), May 7, 1975, W. Wittmer; 2 exs., Lopchu (Ghum), Darjeeling, India, May 9, 1975, W. Wittmer; 2 exs., Rimbick-Ramam (alt. 1,950–2,450 m), Darjeeling, India, May 19, 1975, W. Wittmer; 1 ex., Rimbick (alt. 2,350 m), May 22, 1975, W. Wittmer; 3 exs., Ramam (alt. 2,450), May 19, 20, 1975, W. Wittmer; 4 exs., Chim-Khona (Ghum) (alt. 2,200 m), Darjeeling, India, May 28, June 4, 7, 1975, W. Wittmer; 4 exs., Tonglu-Garibas (alt. 3,050–2,600 m), Darjeeling, India, June 7, 1975, W. Wittmer; 3 exs., Tango (alt. 2,700 m), Bhutan, 22 km of Thimphu, June 30, 1972; 1 ex., Dorjula (alt. 2,450–2,600 m), Bhutan, June 6, 1972. Most type-series are preserved in the collection of the Naturhistorisches Museum, Basel, but some paratypes in the collection of the Biological Laboratory, Nagoya Women's University.

The present new species is easily separable from *C. apicalis* (Reitter) in having the body more or less small, the color of the dorsal surface dark-brown with pale apical portion and in the male genitalia morphology.

16. *Laccobius* (*Microlaccobius*) *gracilis orientalis* Knisch

Laccobius (s.str.) *orientalis* KNISCH, 1924, Wiener Ent. Zeit., 41: 33 (Kumaon).

2 exs., Samchi (alt. 300 m), Bhutan, 7.–11.V.1972.

Distribution: India, Bhutan, Afghanistan, Siria, Lebanon, Israel, Egypt, Iran, Turkmenistan.

New to the fauna of Bhutan.

Ptilodactylidae

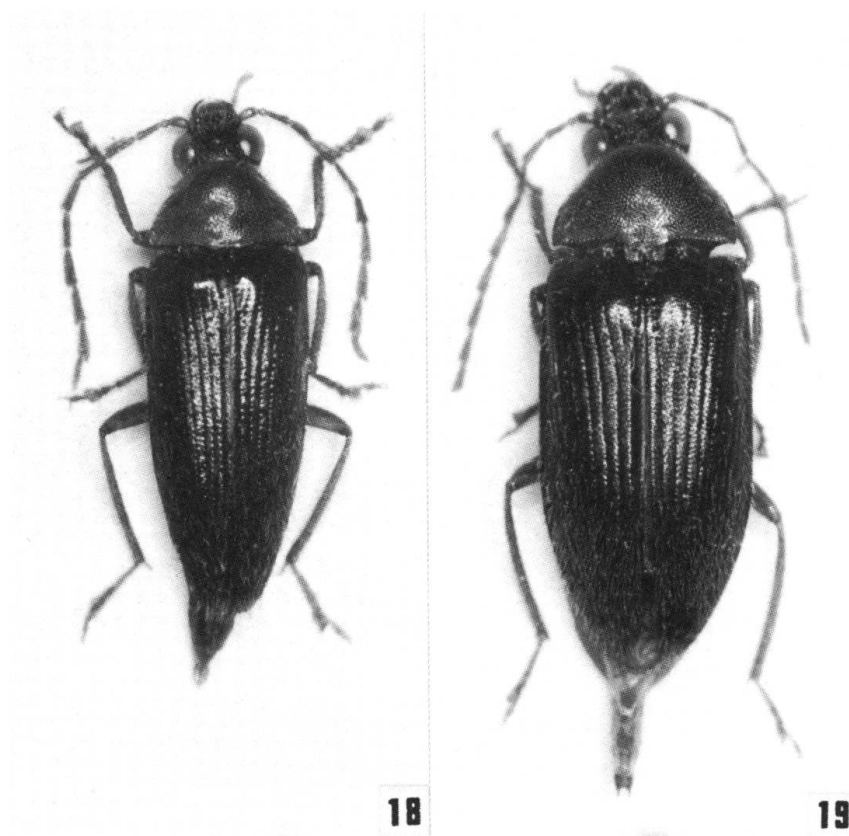
1. *Ptilodactyla angustatipennis* Pic (Figs. 18, 19, 25, 34)

Ptilodactyla angustatipennis PIC, 1916, Mél. exot.-ent., 21: 4 (Indes: Tenasserim).

12 ♂♂, 6 ♀♀, Lopchu (alt. 1,500 m), Darjeeling Distr., India, May 31, 1975, W. Wittmer.

Distribution: India.

As the original description is insufficient in the body proportion, I append a diagnosis of the species as follows:



Figs. 18, 19: *Ptilodactyla angustatipennis* Pic.: 18, male; 19, female.

Male. Body distinctly attenuated posteriad. Color mostly chestnut; head black; peripheries of pronotum and elytra vaguely brown; maxillary and labial palpi, antennae and legs yellowish brown. Distance between eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.8 times as broad as long. Elytra about 2.3 times as long as broad. Antennae pectinate from 4th to 10th segment, approximate ratio of segmental length as follows: 2:1:3:4:4:4:4:4:4:4:4, each appendage stretched from the base and a little longer than the primary segment. Inner claw of anterior tarsus obliquely truncate at tip and a little shorter than the outer which is stout. Genitalia: median lobe slender, tapered, with a dully pointed apex; median strut distinctly expanded; lateral lobe moderate, its apical third incrassate; basal lobe rather large.

Length: 5.5–6.0 mm*; width: 2.1–2.3 mm

Female. Body moderately narrowed posteriad. Color dark chestnut. Distance between eyes about 2.3 times as broad as the breadth of an eye. Pronotum about 2.2 time as broad as long. Elytra about 1.8 time as long as broad. Antennae filiform, approximate ratio of segmental length as follows: 2:1:3:4:4:4:4:4:4:4:3.5.

Length: 5.7–6.2; width 2.4–2.7 mm.

2. *Ptilodactyla brancuccii* n.sp. (Figs. 26, 35)

Male. Body somewhat attenuated posteriad. Color mostly chestnut; head black, peripheries of pronotum and elytra vaguely brown, appendages yellowish brown. Distance between eyes about 1.6 times as broad as the width of an eye. Pronotum about 1.4 times as broad as long. Elytra about 2.6 times as long as broad. Antennae pectinate from 4th to 10th segments, approximate ratio of segmental length 2.5:1:3.5:4:4.5:5:5:5:5:5:4; each appendage stretched from the base and a little longer than the primary segment. Inner claw of anterior tarsus moderate, obliquely truncate at tip and a little shorter than the outer one which is rather stout. Genitalia: median lobe slender, tapering terminally with sharply pointed apex; median strut moderate; lateral lobe moderate, its apical half incrassate; basal lobe rather large.

Length: 4.7–6.2 mm; width: 1.9–2.4 mm.

Female. Body gently narrowed posteriad. Color dark chestnut. Distance between eyes about 2.5 times as broad as the width of an eye.

* The length of *Ptilodactyla*-species is given from the anterior margin of pronotum to the apex of elytron.

Pronotum about 1.7 time as broad as long. Elytra about 2.0 times as long as broad. Antennae filiform, approximate ratio of segmental length 2.5:1:3:4:4:4:4:4:4:3.5.

Length: 5.4–6.1 mm; width: 2.1–2.6 mm.

Holotype: ♂, Godavari (alt. 1,600 m), Nepal, June 10, 1976, W. Wittmer and C. Baroni Urbani. Paratypes: 13 ♂♂, 10 ♀♀, same data as the holotype; 3 ♂♂, 1 ♀, Danda Pakhar (alt. 1,000–1,500 m), Nepal, June 1, 1977, M. Brancucci; 3 ♂♂, 1 ♀, Gokaruaban, Kathmandu, Nepal, June 12, 1976, W. Wittmer and C. Baroni Urbani; 1 ♂, ditto, May 24–June 21, 1976; 4 ♂♂, 14 ♀♀, km 87 von Phuntsholing, Bhutan, May 22, 1972; 1 ♂, Phuntsholing, Thimphu, Bhutan, May 22, 1972; 3 ♀♀, 21 km O., Wangdi Phodrang (alt. 1,700–2,000 m), Bhutan, June 15, 1972. Most type-series are deposited in the collection of the Naturhistorisches Museum Basel, but some paratypes in the collection of the Biological Laboratory, Nagoya Women's University.

General appearance of the new species is almost as same as *P. angustatipennis* Pic, but it differs from the latter in the combination of characters mentioned above.

The specific name of the present species is derived from M. Brancucci who collected a part of this interesting material.

2a. *Ptilodactyla brancuccii darjeelingiana* n. ssp. (Figs. 26a, 36)

Very closely similar to the nominal subspecies, but distinctive in the following points:

Male. Distance between eyes about 1.8 times as broad as the width of an eye. Pronotum about 1.5 times as broad as long. Elytra about 2.2 times as long as broad. Approximate ratio of antennal segments 3:1:3.5:3.5:4:4:4:4:4:5. Inner claw of anterior tarsus truncate at tip, outer claw inwardly bent. Lateral lobe of genitalia angulate at the apical third and having a sharply pointed apex.

Length: 4.8 mm; width: 1.8 mm.

Female. Distance between eyes about 2.2 times as broad as the width of an eye. Pronotum about 1.7 times as broad as long. Elytra about 1.9 times as long as broad. Approximate ratio of antennal segments 2.5:1:3:3.5:3.5:3.5:3.5:3.5:3.5:3.5:3.5.

Length: 4.8 mm; width: 1.9 mm.

Holotype: ♂, Rimbick-Ramam (alt. 1,950–2,450 m), Darjeeling Distr., India, May 19, 1975, W. Wittmer, Paratype: ♀, same locality as the holotype. The type-series is deposited in the collection of the Naturhistorisches Museum Basel.

3. *Ptilodactyla jiriensis* n. sp. (Figs. 28, 38)

Male. Body subparallel-sided. Color mostly chestnut, but legs and peripheries of pronotum and elytra somewhat lighter than the others; head brownish black. Distance between eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 2.2 times as long as broad. Approximate ratio of antennal segments 3:1:3.5:4:4:5:5:5:5:5; each segmental appendage stretched from the base and a little longer than the primary segment. Inner claw of anterior tarsus stout, about a half as long as the outer one and truncate at tip; outer claw stout and short. Genitalia: median lobe somewhat broad, its apical part subtriangular with pointed apex; median strut stout; lateral lobe rather stout and gently rounded at the apex; basal lobe moderate.

Length: 5.1–6.1 mm; width: 1.9–2.4 mm.

Female. Body subparallel-sided. Color dark chestnut. Distance between eyes about 2.2 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 2.1 times as long as broad. Approximate ratio of antennal segments: 2.5:1:3:3.5:3.5:3.5:3.5:3.5:3.5:3.5.

Length: 5.1 mm; width: 2.0 mm.

Holotype: ♂, Jiri (alt. 1,800–1,900 m), Nepal, May 27, 1976, W. Wittmer and C. Baroni Urbani. Paratypes: 1 ♂, 1 ♀, same data as the holotype. The type-series is deposited in the collection of the Naturhistorisches Museum Basel.

The present new species most closely resembles *P. angustatipennis* Pic in general appearance, but is separable from it in having the body subparallel-sided, the proportions of body and antennae different, the anterior tarsal claws of the male stout and the male genitalia characteristic structure.

4. *Ptilodactyla miscella* n. sp. (Figs. 20, 27, 37)

Male. Body subparallel-sided. Color almost chestnut, but head black. Distance between eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 2.4 times as long as broad. Approximate ratio of antennal segments 2.5:1:3:4:4:4.5:4.5:5.5:5:5:5; each segmental appendage stretched from the base and about 1.2 times as long as the primary segment. Inner claw of anterior tarsus stout, about a half as long as the outer one, and truncate at the tip; outer claw long and slender. Genitalia: median lobe slender, tapering apically with sharply pointed

**20****21**

Fig. 20: *Ptilodactyla miscella* n.sp. (male). Fig. 21: *Ptilodactyla bicolor* n.sp. (female).

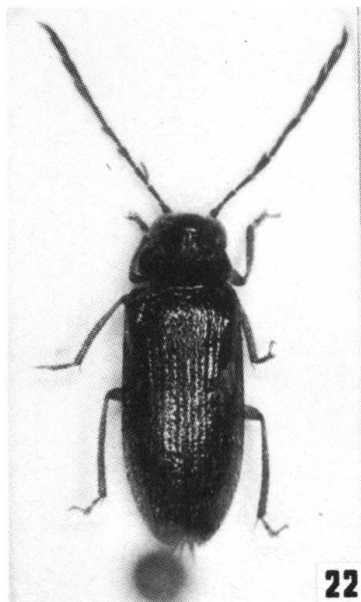
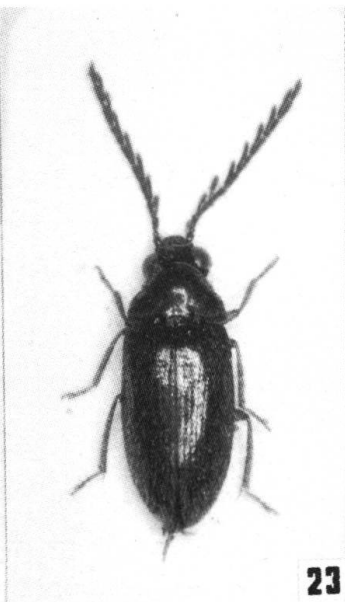
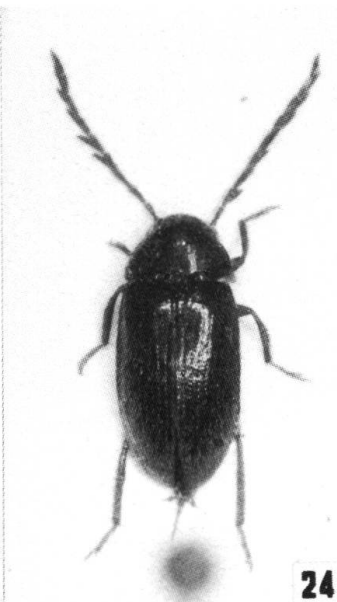
**22****23****24**

Fig. 22: *Ptilodactyla ardua* n.sp. (male) Fig. 23: *Ptilodactyla wittmeri* n.sp. (male).
 Fig. 24: *Ptilodactyla baroniurbanii* n.sp. (male).

apex; lateral lobe slender, evenly narrowed apicad, but slightly emarginate at the preapex; basal lobe somewhat small.

Length: 6.6 mm; width: 2.2 mm.

Female. Unknown.

Holotype: ♂, 6–10 km after Dorjula (alt. 3,100 m), Bhutan, June 11, 1972. The type-specimen is preserved in the collection of the Naturhistorisches Museum Basel.

This new species is closely related to three species of the genus *Ptilodactyla* which are treated in the previous pages, but it can be separated from them by the different proportions of the body and antennae, by the tarsal claws and male genitalia.

5. *Ptilodactyla bicolor* n.sp. (Fig.21)

Female. Body stout and subparallel-sided. Color mostly dark brown to blackish brown; pronotum and ventral surface yellowish brown. Distance between the eyes about 4 times as broad as the width of an eye. Pronotum about 1.7 times as broad as long. Elytra about 1.8 times as long as broad. Antennae more or less broad, serrate, with relative length of each segment 2.5:1:4:4.5:4:4:4:3.5:3.5:3.5:3.

Length: 5.9 mm; width: 2.5 mm.

Male. Unknown.

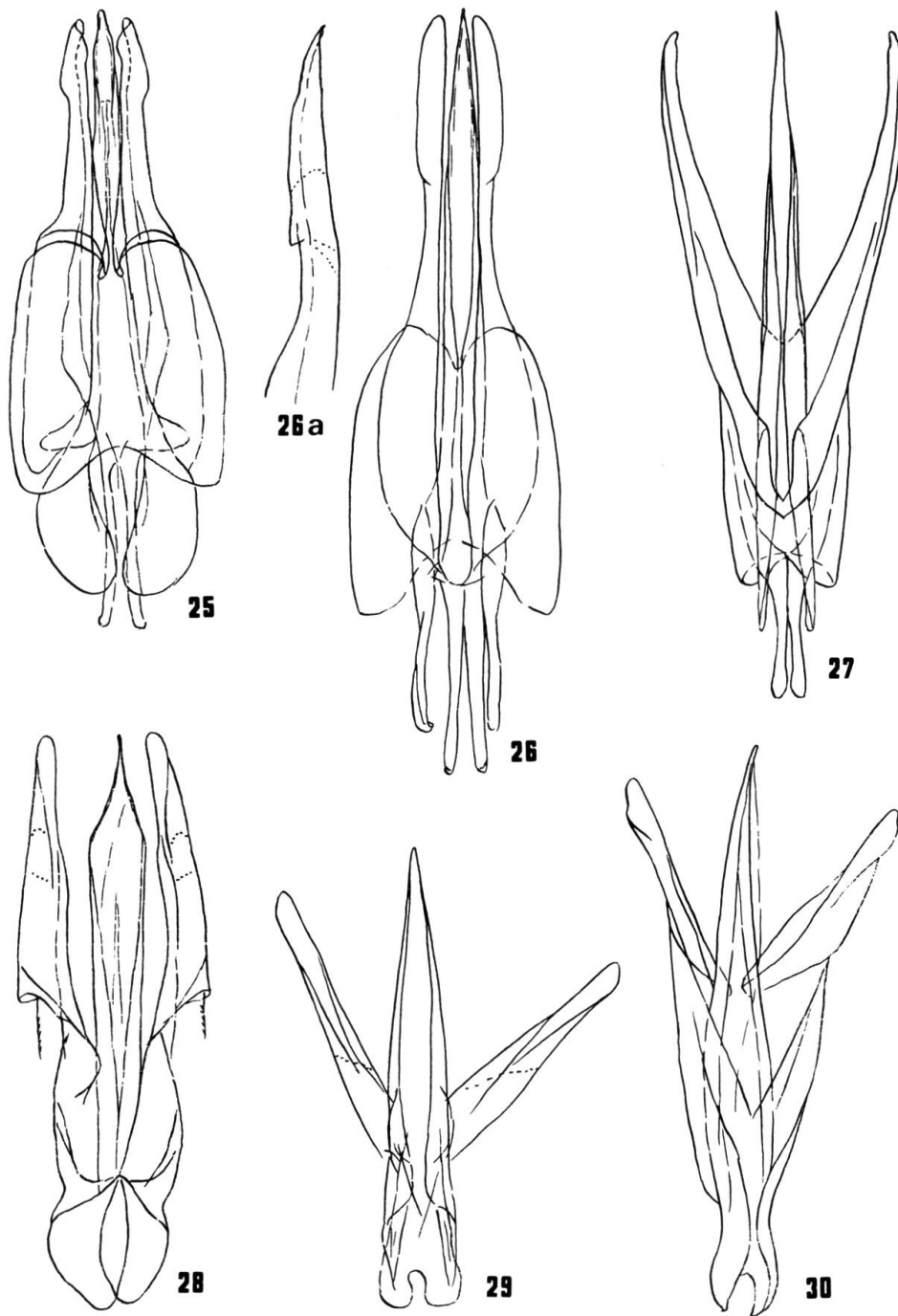
Holotype: ♀, 87 km von Phuntsholing, Bhutan, May 22, 1972. The type-specimen is preserved in the collection of the Naturhistorisches Museum Basel.

This new species can be separated easily from all the species belonging to the genus *Ptilodactyla* which are described in the present paper by the color pattern, the body form and the serrate antennae.

6. *Ptilodactyla ardua* n.sp. (Figs.22, 30, 40)

Male. Body slender and subparallel-sided. Color brownish black; antennae and legs brown to dark brown. Distance between the eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 2.3 times as long as broad. Approximate ratio of antennal segments 2.5:1:2.5:2.5+4:3.5+4.5:3.5+5:3.5+5:3.5+5:3+5:4.** Inner claw of anterior tarsus about two-thirds as long as the outer and acute at tip of under side; outer claw stout and distinctly bent ventrally. Genitalia: median lobe moder-

** The plus numbers of the *Ptilodactyla*-species show the length of the appendage of each antennal segment.



Figs. 25–30: Male genitalia of *Ptilodactyla*-species: 25, *P. angustatipennis* Pic. 26, *P. brancuccii* n. sp. 26a, *P. brancuccii darjeelingiana* n. subsp. 27, *P. miscella* n. sp. 28, *P. jiriensis* n. sp. 29, *P. godavarensis* n. sp. 30, *P. ardua* n. sp.

ate, distinctly tapered with pointed apex; lateral lobe moderate and emarginate at the preapex; basal lobe rather long.

Length: 4.0–4.2 mm; breadth: 1.4–1.6 mm.

Female. Unknown.

Holotype: ♂, Chim-Khona (Ghum) (alt. 2,200 m), Darjeeling Distr., India, June 4, 1975, W. Wittmer leg. Paratypes: 4 ♂♂, same data as the holotype. The type-series is deposited in the collection of the Naturhistorisches Museum Basel, except for a paratype which is deposited in the collection of the Biological Laboratory, Nagoya Women's University.

Somewhat allied to *P.saigonensis* Pic and *P.vuilleti* Pic, but the present new species can be distinguished from them in the elytral pubescence uniform and the body fairly small.

7. *Ptilodactyla godavarensis* n.sp. (Figs. 29, 39)

Male. Body rather stout and subparallel-sided. Color almost dark chestnut. Distance between eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 2.3 times as long as broad. Approximate ratio of antennal segments 2:1:2.5:3+?:3+?:3+6:4+7:4+7:4+7:5. Inner claw of anterior tarsus stout, subtriangular and about two thirds as long as the outer one which is stout, with a bluntly pointed apex. Genitalia: median lobe rather stout, moderately tapered and its apex pointed; lateral lobe moderate and obliquely truncate at the tip; basal lobe somewhat small.

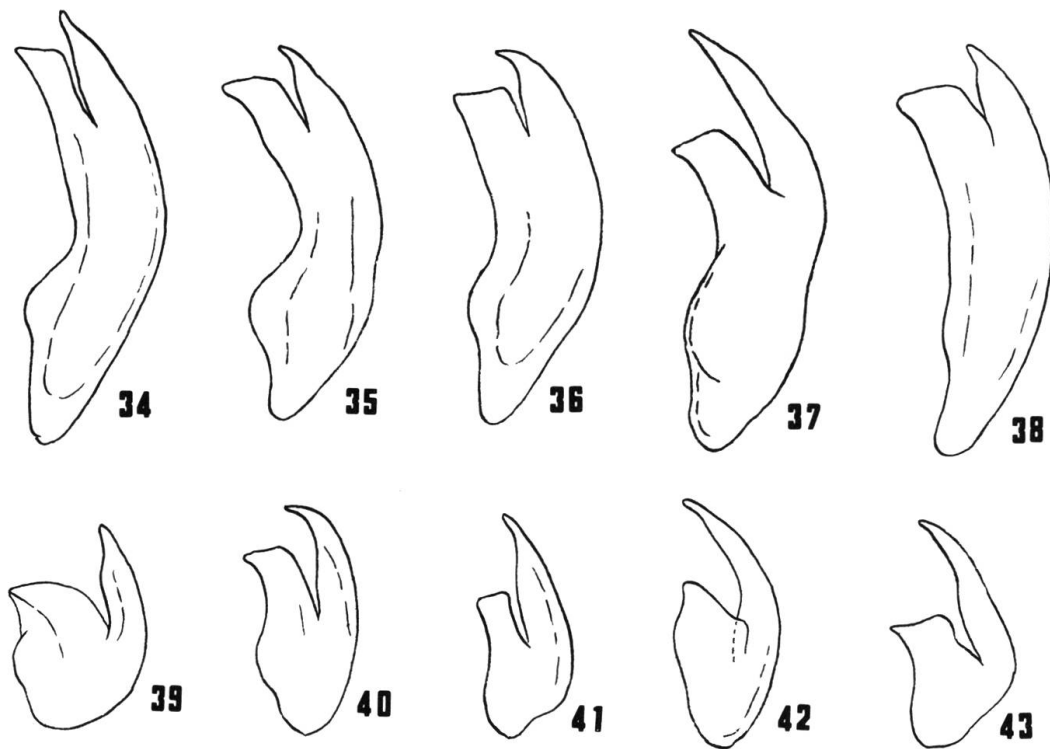
Length: 4.0 mm; width: 1.8 mm.

Female: Body stout and subparallel-sided. Distance between the eyes about 2.4 times as broad as the width of an eye. Pronotum about 1.8 times as broad as long. Elytra about 1.8 times as long as broad. Approximate ratio of antennal segments 2.5:1:3:3.5:3.5:4:4:4:4:—:—.

Length: 4.7 mm, width: 2.2 mm.

Holotype: ♂, Godavari, Nepal, June 6, 1976, W. Wittmer and C. Baroni Urbani. Paratype: ♀, Godavari (alt. 1,500–1,700 m), Nepal, May 21, 1977, W. Wittmer and C. Baroni Urbani. The type-series is deposited in the collection of the Naturhistorisches Museum Basel.

This new species is more or less similar to *P.atricollis* Pic, but differs from it in the small body not so much shining.



Figs. 34–43: Anterior tarsal claws of male of *Ptilodactyla*-species: 34, *P. angustatipennis* Pic. 35, *P. brancuccii* n.sp. 36, *P. brancuccii darjeelingiana* n.subsp. 37, *P. miscella* n.sp. 38, *P. jiriensis* n.sp. 39, *P. godavarensis* n.sp. 40, *P. ardua* n.sp. 41, *P. baroniurbanii* n.sp. 42, *P. wittmeri* n.sp. 43, *P. bhutanica* n.sp.

8. *Ptilodactyla wittmeri* n.sp. (Figs. 23, 31, 42)

Male. Elongate oval. Color brown to dark brown; legs yellowish brown. Distance between the eyes about 1.7 times as broad as the width of an eye. Pronotum about 1.6 times as broad as long. Elytra about 1.9 times as long as broad and indistinctly punctate-striate. Approximate ratio of antennal segments $2:1:2.5:3+4:3+4:3+4.5:3.5+5:3.5+5.5:3.5+5.5:3.5+5:4$. Inner claw of anterior tarsus about a half as long as the outer and subtriangular in shape with a blunt apex; outer claw slender. Genitalia: median lobe somewhat stout, tapering apically with sharply pointed apex and provided with a pair of tongue-like projection at the middle; median strut distinct; lateral lobe stout, outwardly-bent and its inside swollen at the middle; basal lobe stout.

Length: 2.8–3.5 mm; width: 1.3–1.6 mm.

Female. Color brownish black, but legs brown. Distance between the eyes about 2.5 times as long as the width of an eye. Pronotum about 1.7 time as broad as long. Elytra about 1.7 time as long as broad.

Approximate ratio of antennal segments 2:1:2.5:2.5:2.5:2.5:2.5:2.5:3:3:3.

Length: 3.4–3.8 mm; width: 1.7–1.9 mm.

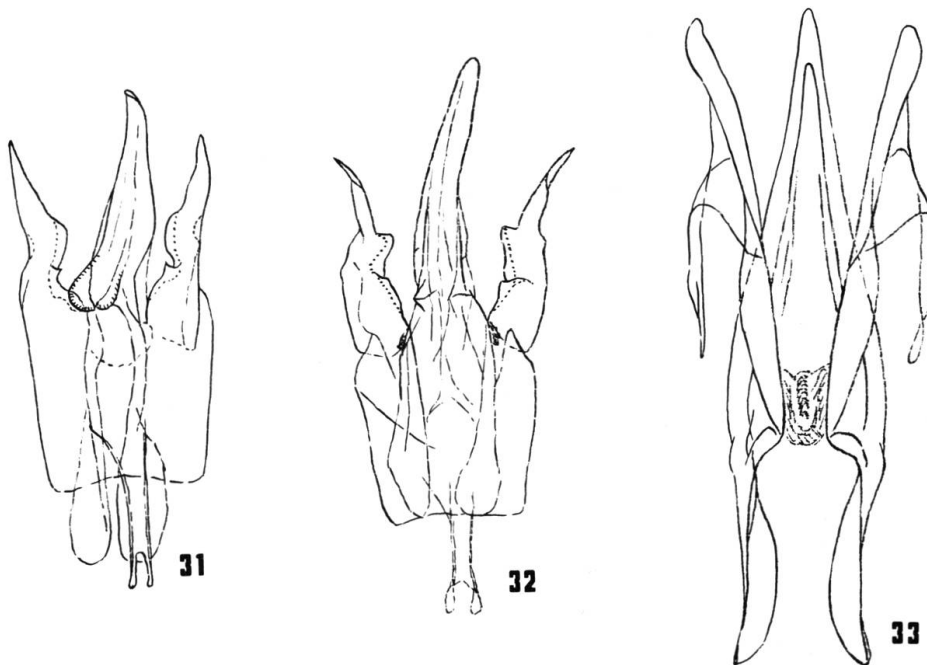
Holotype: ♂ Bhutan: 87 km von Phuntsholing-Thimphu (alt. 1,680 m), May 22, 1972. Paratypes: 5 ♂♂, 3 ♀♀, same data as the holotype, 9 ♂♂, 1 ♀; 21 km O Wangdi Phodrang (alt. 1,700–2,000 m), June 15, 1972, 1 ♂; Samchi (alt. 400 m), May 9, 1972; 1 ♂, 1 ♀, Nepal: Pokhara (alt. 820 m), June 15–18, 1976, W. Wittmer and C. Baroni Urbani; India: 1 ♂, Cherrapunjee, Meghalaya (alt. 1,200 m), May 16, 1976, W. Wittmer and C. Baroni Urbani. Most type-series are preserved in the collection of the Naturhistorisches Museum Basel, but some paratypes in the collection of the Biological Laboratory, Nagoya Women's University.

This new species is related to *P. atricollis* Pic, but seems to differ in the color of the body and in the punctate striae of elytra.

The species is named in honour of Dr. W. Wittmer who has kindly given me many facilities.

9. *Ptilodactyla baroniurbanii* n.sp. (Figs. 24, 32, 41)

Male. Body elongate oval. Color almost dark brown to blackish brown, but head black, mouthparts, antennae and legs yellowish brown.



Figs. 31–33: Male genitalia of *Ptilodactyla*-species: 31, *P. wittmeri* n.sp. 32, *P. baroniurbanii* n.sp. 33, *P. bhutanica* n.sp.

Distance between the eyes about 1.6 times as long as the width of an eye. Pronotum about 1.7 times as broad as long. Elytra about 1.7 times as long as broad and finely punctate-striate. Approximate ratio of antennal segments 1.5:1:2.5:3+5:3.5+5:4+6:4+6:4+6:4+6:4+5.5:5. Inner claw of anterior tarsus long about a half as the outer, its apex truncate; outer claw stout. Genitalia: median lobe moderate, gently tapered, with rounded apex; median strut moderate; lateral lobe angulate at the middle, thence abruptly narrowed terminally; basal lobe rather large.

Length: 2.9–3.3 mm; breadth: 1.3–1.5 mm.

Female. Unknown.

Holotype: ♂, Nepal: Godavari, June 10, 1976, W. Wittmer and C. Baroni Urbani. Paratypes: 2 ♂♂, same data as the holotype; 3 ♂♂, Gokarnaban, Kathmandu, June 12, 1976, W. Wittmer and C. Baroni Urbani. The type series are deposited in the collection of the Naturhistorisches Museum Basel, except for two paratypes in the collection of the Biological Laboratory, Nagoya Women's University.

This new species can be distinguished from *P. wittmeri* mihi by the different body proportion and by the pronounced male genitalia.

The species is dedicated to Dr. C. Baroni Urbani who collected this interesting material.

10. *Ptilodactyla bhutanica* n. sp. (Figs. 33, 43)

Male. Body elongate oval. Color mostly testaceous; head black; legs yellowish brown. Distance between the eyes about 2.4 times as broad as the breadth of an eye. Pronotum about 1.9 times as broad as long. Elytra about 1.6 times as long as broad. Approximate ratio of antennal segments 1.5:1:2:2.5+4:2.5+5:3+5.5: 3+6: 3+6:3+6:3+6:–. Inner claw of anterior tarsus less than a half length of the outer and with an acute at tip of under side; outer claw slender. Genitalia: median lobe robust, subtriangular in shape, apex bluntly pointed; lateral lobe moderate, subtriangular with rounded apex.

Length: 3.6 mm; width: 1.8 mm.

Female. Unknown.

Holotype: ♂, Bhutan: Phuntsholing (alt. 2/400 m), D. K. Dukpa, Aug. 1975. Paratype: ♂, same data as the holotype. The type-series is deposited in the collection of the Naturhistorisches Museum Basel.

The present new species is somewhat similar to the previously described species, but is separable from them by the color testaceous and by the proportions of the body and antennae.



Fig. 44: Male genitalia of *Ptilodactyla multifaria* n. sp.

11. *Ptilodactyla multifaria* n. sp. (Fig. 44)

Male. Body rather stout and subparallel-sided. Color almost chestnut; head black. Distance between the eyes about 1.6 times as broad as long. Pronotum about 1.6 times as broad as long. Elytra about 1.7 times as long as broad and provided with vague fasciated pubescence. Relative length of antennal segments 2:1:3:3+3:3+3:3+3.5:3+4:3+4:3+4:3+4: –. Genitalia: median lobe stout, subtriangular in shape, apex dully pointed; median strut moderate; lateral lobe stout and its apex rounded; basal lobe moderate.

Length: 3.8 mm; width: 1.7 mm.

Female. Unknown.

Holotype: ♂, Gokaruaban, Kathmandu, Nepal, June 2, 1976, W. Wittmer and C. Baroni Urbani. Type-specimen is preserved in the collection of the Naturhistorisches Museum Basel.

This new species is somewhat similar to *P. saigonensis* Pic, but seems to differ in the body small in size and the fasciated pubescence on elytra vague.

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