

Studies on Asian Carabidae

VIII. Species of the Genus *Ophoniscus*

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Abstract A new species of the carabid genus *Ophoniscus* BATES is described from Sri Lanka, and redescrptions are given for two species, *O. iridulus* BATES and *O. cribrifrons* BATES, both from Myanmar.

The harpaline genus *Ophoniscus* BATES is characterized by the mentum truncate at the bottom of the apical emargination, the labrum and the clypeus respectively subtruncate at the apex, the ligula bearing four setae, the dorsal surface wholly punctate and pubescent, the elytra with uniseriate setiferous pores respectively on the 3rd, 5th and 7th intervals, and the apical segment of female genitalia without small spine at the outer ventral margin. It consists of three known species.

In this paper I am going to redescribe two of them and to describe a new species from Sri Lanka.

I wish to express my deep gratitude to Dr. Frits HIEKE of the Museum für Naturkunde der Humboldt-Universität and Dr. Lothar ZERCHE of the Deutsches Entomologisches Institut for their kind loan of many important materials including a syntype of *O. iridulus* BATES. Also I heartily thank Mr. Taichi SHIBATA and Dr. Gerald R. NOONAN for their valuable suggestions.

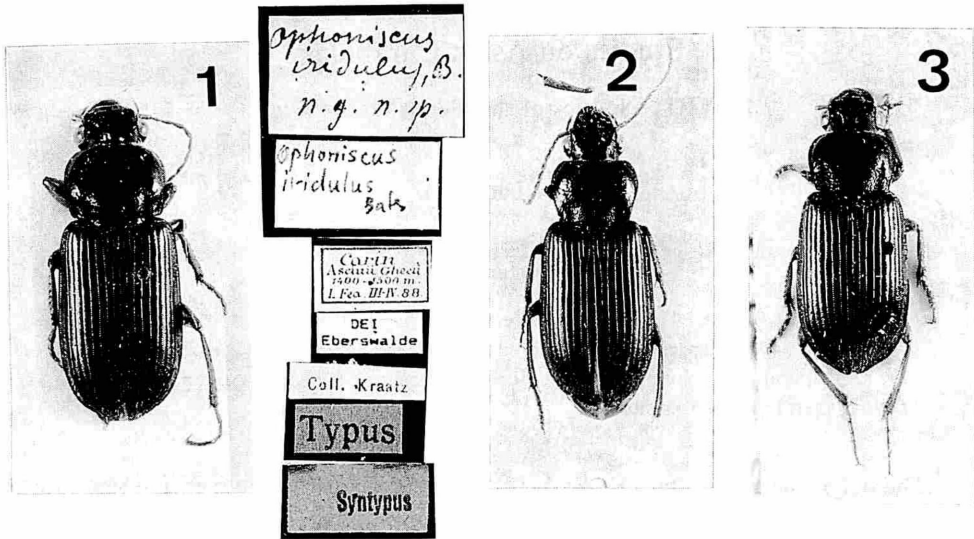
Ophoniscus iridulus BATES

(Figs. 1, 4–5)

Ophoniscus iridulus H. W. BATES, 1892, Anni. Mus. civ. Stor. nat. Genova, (2), 12: 337. — NOONAN, 1985, Milwaukee Public Mus. Contr. Biol. & Geol., (64): 12, 31–32; 1985, *ibid.*, (65): 18, 22–23.
Trichotichnus (Ophoniscus) iridulus: CSIKI, 1932, Coleopt. Cat., (121): 1216.
Parophonus (Ophoniscus) iridulus: NOONAN, 1976, Quaest. ent., 12: 46.

Body rather widely oblong, pitchy brownish black, very shiny, with weakly iridescent lustre on elytra; palpi, antennae and legs yellowish brown, labrum and mandibles reddish brown.

Head weakly convex and flattened on vertex, relatively wide and about three-fourths as wide as pronotum, coarsely and sparsely punctate all over in a syntype (smooth from vertex to clypeal suture in a Himalayan example), sparsely pubescent laterally on clypeus and frons; labrum gently curved inwards at sides, with apex trun-



Figs. 1-3. Habitus of *Ophoniscus* spp. — 1, *Ophoniscus iridulus* BATES (syntype); 2, *O. cribrifrons* BATES; 3, *O. insulicola* sp. nov.

cate or slightly emarginate; clypeus obscurely depressed between a pair of setae, very gently and flatly declivous in front of the depression, with one or two clear rugosities near sides; clypeal suture clearly marked but not deepened at each end, from which frontal impression runs obliquely behind, clear and shallow near the suture, and rudimentary just before supraorbit; interocular space relatively wide, a little more than two-thirds times the width of head inclusive of eyes; eyes large but not very convex; temples short, one-eighth the longitudinal diameter of eye, almost straightly contracted behind and meeting with neck constriction at an obtuse angle, sparsely pubescent, the pubescence being spread out towards gula and genae; mandibles short and thick, dull at tips; antennae slender and relatively long, reaching basal seventh of elytra, 3rd segment pubescent in apical three-fourths, weakly thickened distally, equal in length to 4th and twice as long as 2nd; labial palpi rather well pubescent, 2nd somewhat robust, as long as 3rd; ligula relatively wide, parallel-sided in basal three-fourths, thence weakly expanded forwards, its apex truncate and forming two sharp angles with sides; paraglossae wide, gently arcuately expanded apicad, prolonged forwards a little beyond ligular apex, and widely rounded at apices; mentum transverse, truncate at bottom of apical emargination, epilobes narrow and weakly widened in front; microsculpture fine and obscure, invisible on vertex and on middle of frons, composed of isodiametric meshes on apical portion of clypeus and of transverse lines and meshes near frontal impressions and supraorbital setae.

Pronotum subquadrate, widest at apical third, not well contracted behind at sides, two-fifths wider than long, coarsely punctate near median line and on lateral and basal areas, the punctures compact on basal foveae, sparsely pubescent laterally and basally;

sides weakly arcuate in front and gently obliquely straight behind from the widest point; apex almost truncate and unbordered medially; base slightly wider than apex, weakly bisinuate and very weakly oblique at sides, its border either obscurely observable at the sides or quite invisible; basal angles a little larger than rectangle and narrowly rounded; lateral furrows narrow and V-shapedly cut, not widened behind and linked with basal foveae; basal foveae small and shallow, flat at bottoms; both front and hind transverse impressions vague; median line short and fine, lying between the two impressions; a pair of marginal setae present, one of them being at the borders of apical angles and the other at apical third in lateral furrows; microsculpture fine and obscure, largely invisible though observable as transverse lines and meshes near apex and in basal foveae.

Hind wings fully developed. Elytra oblong, two-thirds longer than wide, gently and uniformly convex, densely and moderately coarsely punctate, densely pubescent; sides subparallel, arcuately convergent behind from apical third and shallowly sinuate at apices; apices not produced behind, widely rounded and not separated, each acute and rectangular at sutural angles; base gently oblique at sides and forming rounded angles with lateral borders; striae not wide, moderate and little stronger in depth even apically and basally, scutellar striole fully long; intervals more or less raised on disc and more raised near apex and base, 3rd, 5th and 7th each bearing a row of large setiferous pores along the inner stria, 3rd with 9–12 pores, 5th with 8–13 pores, and 7th with 8–13 pores; marginal series interrupted in middle, composed of (8–9)+(7–9) umbilicate pores; microsculpture vaguely observable as transverse lines.

Ventral surface rather densely pubescent on abdomen and moderately on coxae and trochanters; metepisterna a half longer than wide; 6th abdominal segment quadrisetose in both male and female along outer margin, in ♂ widely and weakly arcuate and in ♀ rather well produced behind and narrowly arcuate at apex.

Fore tibia weakly dilated distally and truncate at apex, sparsely pubescent dorsally, with three short spines along apico-external margin, terminal spur gradually expanded towards middle, toothed at the widest point of each side; tarsi bearing long pubescence on dorsal side, those on hind tarsi relatively short, 1st segment of mid tarsus fully squamous biseriately like 2nd, 3rd and 4th, hind tarsus in both sexes as long as the width of head, 1st three-fifths longer than 2nd and about twice as long as 3rd, 4th one-third shorter than 3rd, claw segment trisetose along each ventral margin.

Aedeagus (Fig. 4) robust and clearly arcuate, twisted to the left in 90°, so that the apical orifice is directed laterally; apical lamella thin and triangular, two-thirds longer than wide; apical orifice small, occupying posterior third of apical part; inner sac bearing two groups of spines, one composed of three long spines and the other of five spines. Stylus (Fig. 5) gently curved outwards and acute at tip, with a long seta situated at apical fourth; basal segment bearing a short seta at apex.

Length: 9.9–10.0 mm. Width: 3.2–3.5 mm.

Specimens examined. 1 ♂ (syntype), Carin (Karin), Asciiui, Ghecù, alt. 1,400–1,500 m, III~IV–1888, L. FEA leg.; 1 ♂, Pokhara, Nepal, 22~IX–1976, MÖNCH leg.,

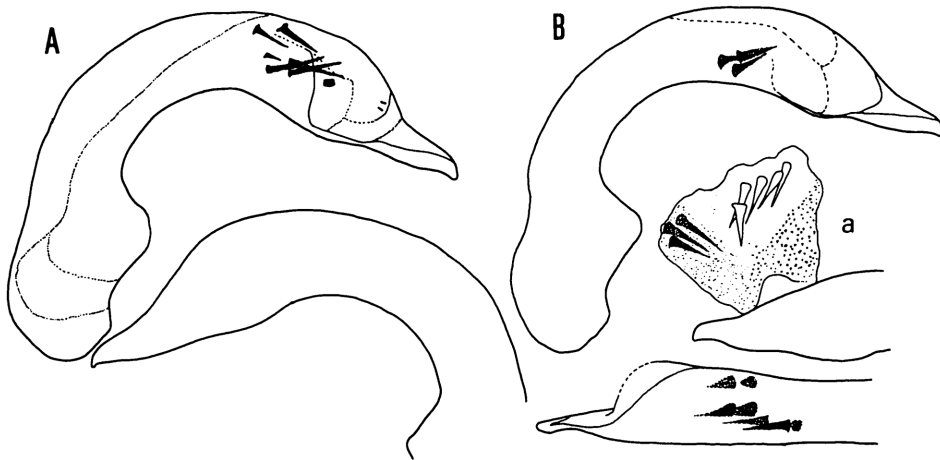


Fig. 4. Male genitalia of *Ophoniscus iridulus* BATES. — A, Syntype, from Carin (Karin), Asciuii Ghecù; B, specimen from Pokhara, Nepal. a: Inner sac.

1 ♂, same locality, 30-X-1992, SCHMIDT leg.; 1 ♀, Nagpore, India, 1 ♀, India (further data not decipherable).

Ophoniscus cribrifrons BATES

(Figs. 2, 6)

Ophoniscus cribrifrons BATES, 1892, Anni. Mus. civ. Stor. nat. Genova, (2), 12: 338. — NOONAN, 1985, Milwaukee Public Mus. Contr. Biol. & Geol., (64): 12, 31-32; 1985, *ibid.*, (65): 18, 22-23. *Trichotichnus (Ophoniscus) cribrifrons*: CSIKI, 1932, Coleopt. Cat., (121): 1216. *Parophonus (Ophoniscus) cribrifrons*: NOONAN, 1976, Quaest. ent., 12: 46.

Body similar to that of *Lampetes*-species, oblong, pitchy black and slightly brownish, very shiny, iridescent lustre distinctly weaker than in *O. iridulus*; palpi, antennae, lateral borders of pronotum, and legs reddish brown, labrum and mandibles dark reddish brown.

Head wide and only one-fourth narrower than pronotum, coarsely and moderately densely punctate all over except for labrum which is finely punctate, sparsely pubescent on labrum and partly on lateral areas, more or less convex and weakly raised on frons; labrum transversely quadrate, gently raised longitudinally along middle, with apex shallowly blunt-notched; clypeus rather thick and slightly swollen, shallowly emarginate and narrowly flattened throughout at apex, clearly sutured from frons by a fine and shallow line; frontal impressions divergent behind, moderately deep and not reduced up to eyes, so that convexity of space in front of the impression is emphasized; eyes hemispherically prominent; temples short and rather abruptly contracted behind, with sparse pubescence, which covers ganae and gula; genuine ventral margins of eyes removed for a short distance from buccal fissure; antennae not slender, short and not

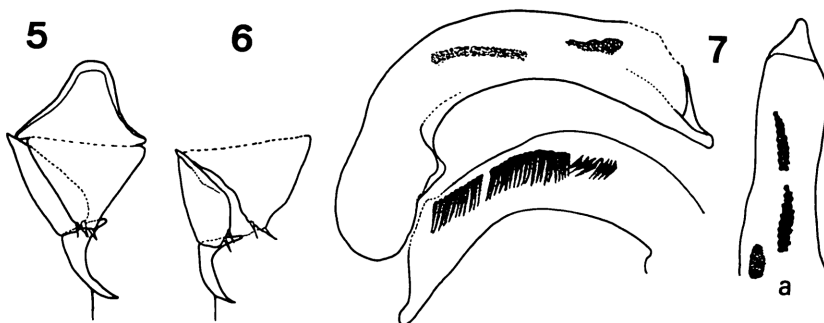
extending beyond basal fifth of elytra, densely pubescent in apical two-thirds of 3rd segment as well as all the following segments and sparsely covered with short pubescence on 1st and 2nd, 3rd as long as 4th and two-fifths longer than 2nd; mandibles short and robust, strongly curved inwards before apex, truncate and blunt at tip in left mandible and acute at tip in the right one; labial palpi not slender and bearing long, rather dense pubescence, 2nd rather well thickened distad and one-fifth shorter than 3rd; ligula wide, constricted just behind apex, thence gently arcuate behind and steeply oblique in front, its apex shallowly emarginate, sharply angulate at sides; paraglossae wide and expanded in a fan-shape, fused with ligula up to the ligular constriction; mentum less transverse than in *O. iridulus*, apical border truncate or hardly produced in front; microsculpture mostly invisible, slightly observable as transverse meshes only near apex of labrum and near supraorbital setae.

Pronotum transversely cordiform, two-fifths wider than long, relatively convex and flattened on disc, coarsely punctate all over, the punctures sparse on disc and dense in basal foveae, with very sparse pubescence laterally and basally; sides clearly arcuate in front and almost straight obliquely behind from the widest part at apical two-fifths, shallowly and widely sinuate before base; apex very shallowly emarginate, with a fine border interrupted medially; base one-tenth wider than apex, almost straight and finely and entirely bordered; basal angles a little wider than rectangle, apparently angulate though blunt at tips, without any prominences; each lateral furrow forming a line, not widened behind, and furnished with several fine and short uniseriate setae in apical fourth; basal fovea small, vaguely grooved longitudinally, weakly and roundly swollen beside the groove; two marginal setae present on each side, one situated at the border of apical angle and the other at apical fourth in lateral furrow; microsculpture mostly absent, partly visible (mainly near punctures) as vague transverse lines.

Fully winged. Elytra oblong, subparallel-sided, three-fifths longer than wide, gently and evenly convex, weakly declivous apicad and rather steeply so baso-laterally, covered with dense punctures and pubescence (the pubescence is lacking on disc in the specimen examined probably due to wearing out); base hardly oblique laterad and rounded at humeri; apices not produced behind, gently oblique before tips and separately rounded, obtuse and angulate at sutural angles; striae deep and wide, a little deepened apically and basally, scutellar striole long; intervals weakly convex, becoming higher towards base and sides, 3rd, 5th and 7th intervals bearing a row of setiferous pores along each inner stria, the row composed of 11–12 pores on 3rd, of 8–9 pores on 5th and of 7–9 pores on 7th; marginal series widely interrupted medially, consisting of 8+(7–8) umbilicate pores; microsculpture invisible under 80× magnification.

Ventral surface moderately densely pubescent on abdomen and metasternum and sparsely so on prosternum and pre- and mesepisterna; metepisterna rugose along inner margins, abruptly narrowed behind and three-fourths longer than wide; apical margin of 6th abdominal segment gently arcuately produced even in ♀ and quadrisetose.

Fore tibia sparsely pubescent dorsally, weakly widened distally and triangularly bi-protuberant at apex, armed with three spines along apico-external margin, terminal



Figs. 5-7. Genitalia of *Ophoniscus* spp. — 5, Stylus of *Ophoniscus iridulus* BATES; 6, stylus of *O. cribrifrons* BATES; 7, male genitalia of *O. insulicola* sp. nov. a: Dorsal side.

spur dentate at both margins; pubescence of tarsi long in mid tarsi and short in hind ones (fore tarsi missing), hind tarsi in ♀ one-tenth shorter than the width of head, 1st segment four-fifths longer than 2nd and as long as 2nd and 3rd together, 4th two-fifths shorter than 3rd, each ventral margin of claw segment trisetose.

Stylus (Fig. 6) short and moderately curved, a long seta situated distantly from apex, basal segment bearing two short setae at outer apical corner, which is tapered, hemisternite with two setae, one inserted at apex and the other a little before apex on inner margin.

Length: 8.5 mm. Width: 3.2 mm.

Specimen examined. 1 ♀, Bhamò, Birmania (Myanmar), IV-1886, FEA leg.

Ophoniscus insulicola sp. nov.

(Figs. 3, 7)

Body oblong, a little wider than in *O. cribrifrons*, pitchy and slightly brownish black, shiny, with slightly bluish iridescent lustre on elytra, labrum reddish brown, mandibles dark reddish brown; palpi, antennae, and legs light brown; dorsal surface almost lacking in microsculpture, which can be vaguely seen as transverse lines only on elytra.

Head well convex on vertex, rather wide and nearly three-fourths as wide as pronotum, sparsely furnished laterad with coarse punctures bearing short hairs and wholly with very fine punctures; labrum weakly convex, subsquare, and widely and shallowly notched at apex; clypeus quite flat, not rugose even near sides, more deeply emarginate than in the two previous species; clypeal suture shallow but clearly marked, slant at front side; frontal impressions also clear, gradually decreasing in clearness towards eyes, space in front of the impression hardly convex; eyes large and almost hemispherically prominent; temples rather well convergent in prolongation of the curvature of eyes towards neck constriction, bearing sparse pubescence; distance between buccal fissures and genuine ventral margins of eyes short; mandibles short and

robust, blunt and truncate at tip in left mandible, sharper in the right one; antennal segments 4th to apical segments missing, 1st and 2nd bearing very sparse pubescence besides the ordinary setae, 3rd relatively thickened apicad and a half longer than 2nd; labial palpi moderately pubescent, 2nd more or less robust and as long as 3rd; ligula gently expanded medially and constricted behind straight apex, fused with paraglossae up to the constriction; paraglossae not wide and rounded at apices; mentum less transverse than in *O. iridulus*, finely bordered at bottom of apical emargination, slightly protuberant in front of the border, epilobes narrow, weakly widened forwards.

Pronotum transversely quadrate, a half wider than long, widest at apical two-thirds, evenly and rather well convex, finely and moderately punctate throughout and coarsely and sparsely on lateral and basal areas, the coarse punctures partly confluent in basal foveae; sides arcuately convergent in front and straightly so behind from the widest point, slightly sinuate before base; apex shallowly and uniformly emarginate and unbordered medially; base a little wider than apex (1.1 in ratio), indistinctly bisinuate, very gently arcuate laterad, and obscurely bordered only on the arcuate portions; basal angles very obtuse and angularly rounded; lateral furrows narrow, not widened even behind, each with hind one of two marginal setae at the bottom and front one on lateral border; basal foveae ill-defined, shallow and only flattened, sparsely pubescent, the pubescence being spread out into lateral furrows and rarely visible on disc; median line fine and obscure, lying between the two transverse impressions, which are shallow and very vague.

Hind wings entirely developed. Elytra widely oblong, about one and a half times as long as wide and one-third wider than pronotum, uniformly and relatively convex and rather steeply declivous in apical parts, densely and moderately coarsely punctate, covered with dense pubescence: sides subparallel, gradually becoming arcuate behind from apical three-fifths and shallowly sinuate before apex, thence rather abruptly and straightly oblique; apices narrowly, separately rounded, blunt at sutural angles; base shallowly bisinuate, more or less oblique at sides; striae wide, moderately deep on disc and a little deeper near apex, scutellar striole very long; intervals slightly convex on disc, increasing in convexity backwards and weakly ridged near apex, 3rd, 5th and 7th each with uniseriate setiferous pores, 11 pores on 3rd, 8 pores on 5th, and 9 pores on 7th; marginal series divided into two groups, the proximal group composed of 8 umbilicate pores and the apical group of 8–9 pores.

Ventral surface a little more sparsely pubescent than in *O. iridulus*; metepisterna strongly contracted behind and moderately elongate, a half longer than wide; 6th abdominal segment bisetose on each side, slightly emarginate at apex.

Fore tibia sparsely pubescent and not sulcate dorsally, rather well dilated apicad, truncate and micro-protuberant medially at apex, armed with two short spines along apico-external margin, terminal spur distinctly unidentate at each margin; tarsi furnished with long pubescence on dorsal sides (the pubescence being a little shorter on hind tarsi), 1st segment of mid tarsi bearing ventral adhesive hairs only near apex, hind tarsi almost equal in length to the width of head, 1st about a half longer than 2nd and

one-fifth shorter than 2nd and 3rd together, 4th four-fifths as long as 3rd, claw segment quadrisetose along each ventral margin.

Aedeagus (Fig. 7) robust and relatively arcuate, thinned only at apex; apical lamella small, abruptly narrowed and produced in a tongue-shape; inner sac bearing two groups of spines, one composed of many peg-shaped ones and the other of short spinous ones.

Length: 8.2 mm. Width: 3.0 mm.

♀ Unknown.

Holotype: ♂, Ceylon (without further data), (in Museum of Humboldt University).

This new species resembles *O. cribrifrons* BATES but differs from the latter in lacking microsculpture on the head and pronotum, in the pronotum not cordate and more obtuse and blunt at basal angles, and in the elytra more narrowly rounded at apices and with iridescent lustre.

要 約

伊藤 昇: アジア地域のオサムシ科の研究. VIII. *Ophoniscus* 属の種について. — *Ophoniscus iridulus* BATES および *O. cribrifrons* BATES の再記載をするとともに, Sri Lanka より *O. insulicola* N. ITO. を記載した. この新種は, 2 番目の種に似ているが, 前胸背板の形状や微細印刻の差によって区別できる.

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