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NEW OR LITTLE-KNOWN COLEOPTERA FROM JAPAN AND ITS ADJACENT REGIONS, XXX

By

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Abstract

Five new species and two new subgenera of Carabidae and Harpalidae (Caraboidea) are described.

Introduction

During my studies on Japanese Coleoptera a considerable amount of material has been accumulated in my collection deposited now in our laboratory. In the present paper I describe a few new species belonging to genera *Nippononebria* (Nebriinae), *Tachys*, *Bembidion* (Trechinae) and *Pterostichus* (Pterostichinae) from my collection, and propose new subgeneric name for two species-groups of the genus *Pterostichus*. The type-specimens of new forms described here are placed in my collection unless otherwise indicated.

CARABIDAE

Nippononebria sawadai Nakane sp. n.

Black or blackish brown, shining, with faint brassy or aeneous tinges on elytra, the tinges very feeble and scarcely visible in female; mouth parts including labrum and palpi, anterior half of clypeus, antennae, side margins of pronotum and legs reddish brown, femora somewhat darker; under surface more or less reddish.

Head relatively large, gently convex between eyes, which are not so small, moderately prominent but far apart; tempora very short; frontal furrows shallow, short but wide, oblique, somewhat wrinkled; clypeus rather short, with a vague transverse furrow in front; front margin of clypeus slightly arched-emarginate, that of labrum nearly straight or slightly emarginate; surface with rather weak microsculpture consisting of isodiametric meshes; mentum with a short but rather wide bifid tooth; palpi short and relatively stout, with terminal joint weakly dilated to apex, where it is rather broadly truncate; terminal joint of maxillary palpi a half longer than penultimate,

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that of labial palpi not longer than penultimate; antennae rather short and stout, reaching basal third of elytra, pubescent from apical portion of 4th joint.

Pronotum transverse, subcordate, fully a third wider than head, about a fourth wider than long, widest at a little before middle; sides rather narrowly bordered and reflexed, gently and broadly rounded, very slightly sinuate posteriorly; hind angles rectangular or rather acute; front margin nearly straight or scarcely produced in middle, with angles moderately strongly produced and rounded at apex; basal margin a little wider than front margin, straight or very feebly sinuate on both sides of middle and slightly curved backwards near hind angles; disc gently convex, smooth, with some indistinct fine transverse wrinkles and with weak microsculpture consisting of nearly isodiametric or transverse meshes, front and basal area together with moderately deep transverse impressions sparsely punctured and somewhat uneven; basal foveae deep, divided into two grooves by a weak carina on each side; median line distinct, not reaching both margins but transverse impressions in front and behind.

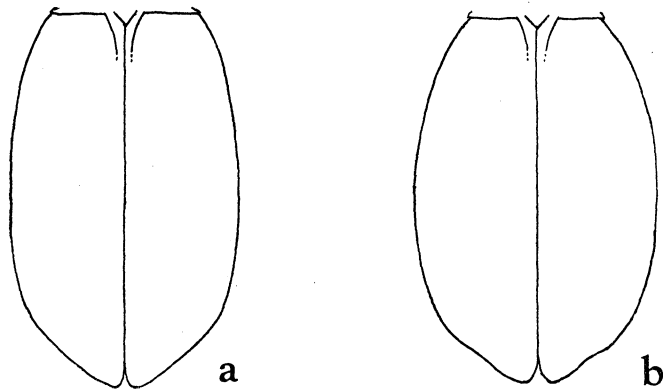


Fig. 1 *Nippononebria* species. Elytral outline
a *N. sawadai* Nakane (Mt. Ido) b *N. pusilla* Uéno (Mt. Komagatake)

Elytra elongate-oval, weakly convex, a third wider than pronotum, a little more than half again as long as wide, widest at or a little behind middle; sides gently rounded and sublinearly convergent behind to apex; shoulders indistinct, but with a small tooth at joint of basal and lateral borders; basal borders sublinear but slightly wavy or curved; striae not so deep, almost entire, finer in outer ones, distinctly punctured, the punctures becoming finer towards apex and sides; scutellary striole long; intervals slightly convex, apical carina obtuse; 3rd interval with two or four dorsal pores adjoining 3rd stria, the pores small, often inconspicuous; marginal series of umbilicate pores variable, few in posterior half; microsculpture consisting of transverse meshes. Wings reduced, about half as long as elytra.

Undersurface with distinct microsculpture of isodiametric or transverse meshes. Prosternal process bordered, a little inclined inwards at apex; mesosternum longitudinally costate along middle and hollowed between coxae; metepisterna rather small, longer than wide; 1st abdominal sternite sparsely punctured usually along base, with

a fovea at basal corner on each side; 3rd to 5th sternites with a pair of setae in middle; anal sternite with a seta in male, two in female, on each side. Legs as usual in the genus.

Male genitalia resemble those of congeners, but the apical portion of penis is more dilated with apical lamella rather widely but shortly projected and bluntly truncate at tip.

Body length: 7.2–8.4 mm; width: 2.7–3.2 mm.

Locality: Mt. Ido, Aomori Prefecture, N. Honshu, Japan.

Holotype (male), allotype (female) & 10 paratypes: Mt. Ido, 24. ix. 1975, Hirofumi Sawada leg. (2 paratypes in coll. Sawada)

This species is allied to *N. pusilla* Uéno and its subsp. *yatsuana* Nakane, but may be easily distinguishable from the latter in having longer and less rounded elytra, with not or scarcely sinuate apical margin.

HARPALIDAE

Tachys (Tachyura) boninensis Nakane sp. n.

Reddish brown, shining, not or feebly iridescent; elytra yellowish brown, with basal area (except humeral) and median portion broadly but very obscurely darker; clypeus, labrum and mandibles light reddish brown, antennae, palpi, elytral epipleura and legs yellowish brown; under side reddish brown.

Head gently convex medially, with distinct isodiametric microsculpture; eyes glabrous, moderately convex; frontal furrows rather deep, slightly curved, diverging in front and behind, not reaching hind supraorbital setae, which are situated a little behind the posterior margin of eyes; antennae slender but submoniliform, reaching basal fifth of elytra, with 2nd joint slightly longer than 3rd, 11th a half longer than 10th.

Pronotum weakly convex, transverse but subcordate, widest at apical third, a third wider than head, a third again as wide as long; basal margin a fifth wider than front margin; surface largely smooth, with microsculpture very indistinct and forming nearly isodiametric but irregular meshes along anterior transverse impression; median part of disc bearing some very faint transverse wrinkles and microscopic punctures; front margin nearly straight, with angles hardly produced; base longitudinally rugose between posterior transverse impression and hind margin, basal angles rectangular and not rounded at tip, with a fine carina just inside; lateral margins strongly rounded before middle, convergent from middle posteriorly, not or scarcely sinuate before basal angles; median line fairly deep, not reaching front margin, deepened at or just behind posterior transverse impression, which is deep, very finely punctate and nearly interrupted at middle; anterior impression shallow and rather strongly arcuate.

Elytra weakly convex, but depressed at central area between 5th intervals, oval in shape, a little less than a half wider than prothorax, a half longer than wide; micro-

sculpture obsolete, consisting of transverse lines; lateral borders smooth, not setulose, rounded at shoulder and nearly reaching beyond base of 4th striae; apical sinuation very slight; apex rather narrowly rounded; 1st to 4th striae rather deep, moderately coarsely punctured; 1st stria entire, becoming finer and closer to suture behind; 2nd to 4th obsolete at base, abbreviated at apical area, 5th somewhat shallower than 4th, free at base and apex, 6th and 7th obsolete, only traceable by rows of several punctures, 8th deep behind but slightly impressed in middle; two dorsal pores on interval 3rd adjoining 3rd stria, situated at basal and apical third respectively; apical striole distinct, a little dilated and curved in front; apical pore just inside the middle of apical striole.

Body length: 3 mm; width: 1.2 mm.

Locality: Bonin Islands (Hahajima).

Holotype: female, Kitamura, Hahajima, Bonin Is., 4. vi. 1976, T. Nakane leg. (NSMT)

Very closely related to *T. luteus* Andrewes from Singapore and possibly a local race of the latter, which has been recorded from Hawaii, Tahiti, Formosa and Saipan Island. But the microsculpture of head above is fairly distinct and isodiametric, the body is a little larger, the 2nd joint of antennae is a little longer than 3rd, and the lateral border of elytra is not setulose, extending to beyond the base of 4th stria.

***Bembidion (Peryphus) hayachinense* Nakane sp. n.**

Black with weak coppery or aeneous tinges above, the elytra slightly iridescent or opalescent; labrum and mandibles dark reddish brown, palpi yellowish brown with penultimate joint of maxillaries infuscate; antennae dark reddish brown, with basal two joints, basal half of 3rd, and base of 4th and 5th reddish brown; usually base of pronotum, lateral borders and sutural interval of elytra very obscurely reddish, sometimes sides of prothorax and elytral borders broadly but vaguely reddish; under side and legs reddish brown, but hind half of head beneath, propleura, frontal part of prosternum, elytral epipleura, hind margin of 3rd to 5th abdominal sternites, and sometimes femora and apical joints of tarsi more or less darker.

Head weakly convex, with some indistinct fine punctures in or near frontal furrows; microsculpture faint, nearly isodiametric, but rather distinct on neck; frontal furrows not so deep, subparallel as a whole, extending onto clypeus in front, slightly diverging backwards in middle, then somewhat converging posteriorly, scarcely reaching hind supraorbital setae, which are situated a little behind the posterior margin of eyes and rather remote from eyes; eyes moderately large and convex; space between lateral fissure and frontal furrow gently convex, the raised part narrowed and weakly and shortly carinate posteriorly; frontal suture distinct; clypeus a little convex, apical margin of labrum nearly straight or slightly sinuate; antennae attaining basal fourth of elytra, with 3rd joint as long as 4th; penultimate joint of maxillary palpi a fourth longer than 3rd joint of antennae; tooth of mentum stout, obtusely rounded at apex.

Pronotum gently convex, widest at about apical third, a fourth wider than head,

fourth again as wide as long; surface almost impunctate, but with some distinct punctures near basal foveae; microsculpture almost invisible on median area of disc, somewhat more distinct on both sides consisting of transverse lines forming strongly transverse meshes; front margin sublinear or very slightly emarginate, margined on both sides, the angles slightly produced and rather narrowly rounded; basal margin nearly as wide as front margin, nearly straight, the angles almost rectangular and weakly but rather widely reflexed, with a weak fine carina inside; sides narrowly margined, with margination little dilated behind, relatively gently rounded before middle, then sublinearly convergent backwards, weakly and briefly sinuate just before basal angles; median line fairly deep, reaching or nearly reaching both front and basal margins, somewhat deepened before base; anterior transverse impression relatively distinct, jointed to bordering of front margin on each side, somewhat uneven; posterior transverse impression rather deep but not so well-defined; basal foveae deep, large and lateral, with the bottom uneven. Scutellum subtriangular, flat, with rather distinct microsculpture.

Elytra oval, gently convex, widest at about middle, fully a half again as wide as prothorax, a little less than half as long again as wide; surface smooth, with microsculpture rather faint, consisting of transverse lines forming strongly transverse meshes; sides regularly arcuate, shoulders indistinct, broadly rounded, lateral border rounding shoulder and ending at base of 5th stria; apical sinuation very slight, apex rounded; inner striae distinct, with distinct punctures, but the striae (except the 1st) and punctures becoming finer and faint posteriorly; 1st stria and usually 2nd entire, arising from basal pore, 4th somewhat weaker than 1st or 3rd, 5th slightly impressed, 6th feeble, almost replaced by a row of smaller punctures, 7th indicated by a row of fine punctures, 8th normal, rather deep; scutellary striole normal, not so long; apical striole deep, jointed with apex of 5th stria; intervals slightly convex, 3rd interval with two pores at a third and two-thirds respectively, both adjoining 3rd stria; three posthumeral umbilicate pores almost equally spaced, 4th a little more distant from 3rd. Wings wanting.

Under side impunctate, except prosternum bearing coarse but vague punctures arranged in a transverse row behind anterior margin; metasternal process distinctly bordered. First joint of male hind tarsi oblong, markedly dilated, with inner apical angle strongly acutely dentate; 2nd short but dilated, transverse, with inner apical angle conspicuously projected.

Body length: 4.8–5.2 mm; width: 1.8–2.1 mm.

Locality: Mt. Hayachine, Iwate Prefecture, Honshu, Japan.

Holotype (male), allotype (female) & 2 paratypes: Mt. Hayachine, 25. vii. 1968, H. Ito leg.; 10 paratypes: Mt. Hayachine, 27. vii. 1965, M. Nakaya et al. leg. (A few paratypes in coll. Nakaya & Oku)

This new species may be somewhat allied to *B. gotoense* Habu from Goto Islands,

W. Kyushu, but the elytra are distinctly rounded at sides and the wings are entirely reduced.

Genus *Pterostichus* Bonelli

This genus comprises a large number of species and forms, and is divided into a series of subgenera or species-groups. Even from Japan more than one hundred species of the genus have been described or recorded, and some of them cannot be placed in any known subgenera at present. Two new subgeneric names are proposed here-below.

Daisenialoe Nakane et *Straneo* subgen. n.

Type species: *Pterostichus fujimurai* Habu, 1958.

As already pointed out by Tanaka (1958), *P. fujimurai*=*P. muranishii* Tanaka is peculiar in having apically pubescent 3rd antennal joint and medially sulcate tarsal joints of legs. Habu (1958) also mentioned the peculiar features of *P. fujimurai* as follows: So far as I am aware, this species seems to be isolated among many *Pterostichus*-species of Japan, and I cannot indicate an allied species to compare with. The large head with small, rather flat eyes, the third antennal segment with hairs on its apical half, the cordate prothorax with unbordered apical margin, the narrower and longer elytra, the clearly arcuate fore tibiae, the tarsal segments with a sulcus in the centre besides lateral sulci, the penultimate ventral abdominal segment with a narrow lamina adjoining the posterior margin, the apical ventral abdominal segment in the male with almost symmetrical projection and weak sinuations, and the hook-shaped right paramere, are the main characteristics of this species.

Epiniialoe Nakane subgen. n.

Type species: *Pterostichus spiculifer* Bates, 1883

Pterostichus spiculifer-group, Tanaka, 1961, *Mushi*, 35(5): 39.

The characteristics of *spiculifer*-group are described by Tanaka in detail. The group can be separated from subgenus *Nialoe* Tanaka by the shape of male genitalia and the presence of two sclerites in the inner sac of penis.

Pterostichus (Nialoe) yokohamae Nakane et *Straneo* sp. n.

Black and shining, very feebly iridescent, the elytra a little less shiny in female; labrum, base of mandibles, under side and legs more or less reddish.

Head smooth, with microsculpture very fine, weak and isodiametric; clypeus and labrum both slightly emarginate at apical margin; frontal furrows not so deep, subparallel, narrowly extending in front onto clypeus, dilated outwardly at frontal suture and reaching posteriorly the level of front supraorbital setae; hind supraorbital setae situated just behind posterior margin of eyes; spaces outside frontal furrows weakly

convex; lateral furrows not curved behind, terminating at about hind supraorbital setae; eyes relatively small and moderately convex, encircled behind by weakly tumid temporae, which are less convex and shorter than eyes; genae beneath eyes smooth; apical joint of labial palpi widest at about apical fourth, four times as long as wide and as long as penultimate; terminal joint of maxillary palpi subcylindrical, four times as long as wide and as long as penultimate; antennae slender, subfiliform, surpassing the base of prothorax by apical three or four joints, 2nd joint usually with four setae at apex.

Prothorax cordate, widest at about apical third, a sixth or fifth wider than long, a third wider than head; disc smooth, with microsculpture very fine and faint, consisting of transverse meshes, bearing only feeble wrinkles and fine punctures in and outside basal foveae; front margin gently rounded-emarginate, nearly unbordered, front angles produced and rounded at tip; lateral margins gently arcuate, narrowly bordered, sinuate behind and parallel before base, marginal channel together with bordering effaced at parallel part; basal margin unbordered, emarginate in middle, not quite as wide as front margin, basal angles rectangular; median line nearly but not attaining both margins; anterior transverse impression obsolete; basal foveae on each side longitudinal, linear and subparallel; a front marginal seta present at apical fourth or fifth on each side.

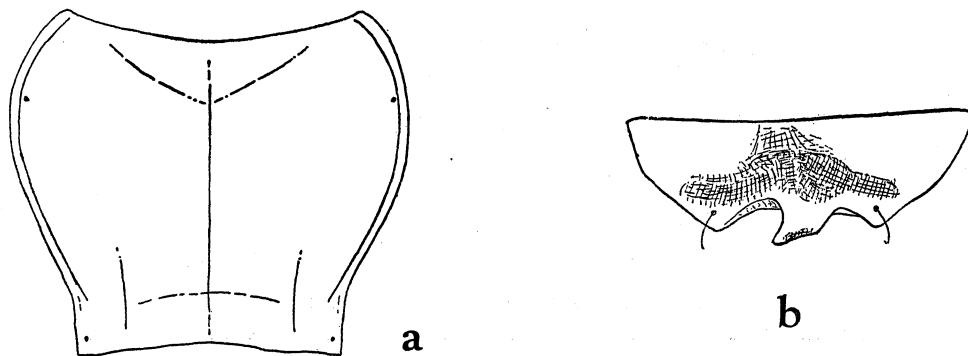


Fig. 2 *Pterostichus yokohamae* Nakane et Straneo
a Pronotum b Anal sternite of male

Elytra oblong, a little more than half as long again as wide, widest at or a little behind middle, more than twice as long as and not much wider than prothorax; shoulders oblique, basal border slightly oblique in outer half; scutellary striole short, connected with basal border at base; striae deep, nearly smooth, almost entire; intervals smooth, slightly convex, with microsculpture consisting of strongly transverse meshes, which are a little less transverse and more distinct in female than in male; 3rd interval with 4-6 dorsal pores, usually pores in anterior half adjoining 3rd stria and those in posterior half adjoining 2nd stria.

Under side smooth except anterior half of mesepisterna bearing scattered rudimental punctures, base of 1st abdominal sternite with fine wrinkles and fine

obsolete punctures, and sides of 2nd sternite bearing a small patch of fine punctures; prosternal process with a shallow median furrow, unbordered at apex; metepisterna rhomboidal, metepimera fairly large; anal sternite of male with a deep and wide excavation along apical margin, which is deeply emarginate and provided with a very asymmetric projection at middle. Basal three joints of meso- and metatarsi sulcate on outer side.

Male genitalia: penis with a large tumour on right side and its apex markedly curved to right in dorsal view.

Body length: 20–21 mm; width 6.8–7.3 mm.

Locality: Yokohama, Kanagawa Prefecture, Honshu, Japan.

Holotype (male), allotype (female): Tsunashima, River Tsurumi, Yokohama, 9. x. 1967, T. Okumura leg.; 3 paratypes: Tsunashima, 6 & 9. x. 1967, T. Okumura leg. (2 paratypes in coll. Straneo).

The present species is closely allied to three species (*tokejii*, *okutamae* & *mitoyamanus*) described by Tanaka from Okutama area or Kanto mountains, but may be separated from them by having larger body, strongly cordate prothorax and deeper emargination of male anal sternite with more conspicuous asymmetric projection.

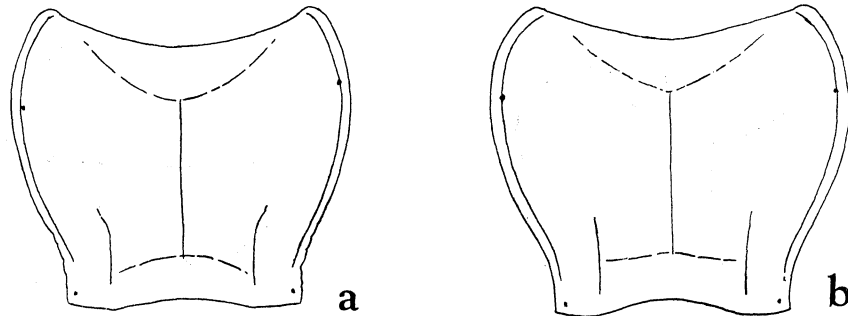


Fig. 3 *Pterostichus* species. Pronotum.

a *P. suruganus* Nakane et Straneo (Fuji City) b *P. pachinus* Bates (Sapporo)

***Pterostichus* (s. str.) *suruganus* Nakane et Straneo sp. n.**

Black, shining, not iridescent, the elytra a little opaque in female; labrum, palpi, mouth parts, antennae and legs reddish brown, but labrum and femora often infuscate; under side partly somewhat reddish.

Head weakly convex, large, surface smooth, with microsculpture weak, consisting of nearly isodiametric meshes; labrum and clypeus nearly flat, with their front margin nearly straight; eyes moderate in size, convex; tempora tumid, but shorter and a little less convex than eyes; hind supraorbital setae moderately distant from eyes; frontal furrows rather shallow, frontal suture finely impressed; lateral furrows linear, reaching a little behind hind supraorbital setae; antennae slender, reaching third or fourth of elytra, pubescent from 4th joint, which is nearly as long as 3rd, 2nd joint with a seta at apex; last joint of palpi subcylindric, widest behind truncate apex, as long as

penultimate; tooth of mentum rounded, incised at middle of apex.

Pronotum weakly convex, cordate, widest at about apical fourth; surface impunctate, only with faint transverse wrinkles sparingly set; microsculpture faint, consisting of weakly transverse meshes; a fourth wider than head, a seventh again as wide as long, a little less than half again as wide as base; front margin emarginate, unbordered, front angles somewhat protrudent, but rounded; basal margin a little narrower than apical margin, slightly but broadly emarginate in middle; basal angles nearly rectangular, but obtusely rounded at tip; lateral margins weakly rounded, distinctly sinuate and becoming parallel before base, where they bear a few fine notches; front marginal seta in apical fourth on each side; marginal channel narrow, scarcely widened at apex; median line fine but well-marked, not reaching both margins; anterior and posterior transverse impressions slight; basal foveae relatively shallow, long, subparallel, a little diverging in front.

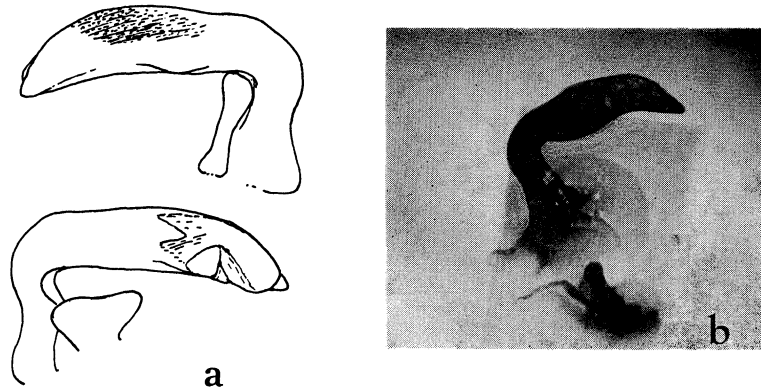


Fig. 4 *Pterostichus* species. Male genitalia.

a *P. suruganus* Nakane et Straneo (Fuji City)

b *P. pachinus* Bates (Junsai Lake) from BMNH collection

Elytra elongate oblong, gently convex, almost smooth, with microsculpture moderately sharply impressed, consisting of transverse meshes; a seventh again as wide as and twice and a third as long as porthorax, a little more than three-fourths as long again as wide; basal border only slightly oblique in outer half; shoulders rounded, without tooth; sides gently and gradually diverging towards middle, converging behind towards apex; inner plica scarcely visible; striae sharply impressed, nearly smooth.; scutellary striole very short, shallow, between 1st and 2nd striae; intervals slightly convex, 3rd interval with three pores, sometimes with five, the 1st pore adjoining 3rd stria, others adjoining 2nd stria; umbilicate series of pores in 9th interval consisting of about 15 pores.

Under side smooth; prosternal process unbordered with a short median furrow; metepisternum with front margin straight, about as long as wide.; last abdominal sternite of male with a shallow rounded impression, which is divided into two by a weak median carina. Basal three joints of meso- and metatarsi sulcate outwardly.

Male genitalia: penis twisted to right apically, rounded produced in middle of right side; apical lamella very short and narrow; left paramere broad, right one as long as the left, rounded at apex, slightly constricted near middle.

Body length: 19.5–20 mm; width: 5.5–5.8 mm.

Locality: Fuji City, Shizuoka Prefecture, Honshu, Japan.

Holotype (male), allotype (female) & 3 paratypes: Marubi Park, Fuji City, 14–16. viii. 1973. (2 paratypes in coll. Straneo)

This new species is very closely related to *P. pachinus* Bates from Junsai, S. Hokkaido, but may be distinguishable from the latter in having more elongate prothorax and elytra, less rounded sides of pronotum, and rounded and not transverse impression of male anal sternite.