

---

**Research Article****Genus *Tamdaoana* Medvedev in Malaysia (Coleoptera: Chrysomelidae, Alticinae)**Haruo Takizawa<sup>1,2,3</sup>*1 Nodai Research Institute, Tokyo University of Agriculture, Japan**2 Kami 2-7-16, Hasuda, Saitama, Japan 349-0122**3 Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah, Jalan UMS, 88400, Kota Kinabalu, Sabah, Malaysia*

Corresponding author: cpirka12@gmail.com

**Abstract**

An alticine genus *Tamdaoana* Medvedev is newly recorded from Malay Peninsula and Borneo, with 2 new species, *T. kotakinabaluensis* and *T. monticola* n. spp. A key is provided for 3 known species, but the taxonomic status of the population in Malay Peninsula remains unclear. Further, the genus is suggested to have close similarity to the genus *Lanka* Maulik.

**Keywords:** *Tamdaoana*, Alticinae, Chrysomelidae, New species, Malaysia**Introduction**

Medvedev (2009) established an alticine genus *Tamdaoana* based on a single species, *T. subseriata* Medvedev from Vietnam. He placed it tentatively near *Longitarsus* Latreille, being differentiated from the latter by elytra sub regularly punctate, hind tibiae stout and channeled dorsally, and last visible abdominal sternite in male bilobed. But its biology and systematic position still remain unclear. In this paper I describe two new species of the genus from Borneo and Peninsular Malaysia.

**Materials and Methods**

Specimens were collected from various main locations in Sabah, namely, Kinabalu Park, Crocker Range Park, and Tawai Forest Reserve (Telupid). In addition, some of the specimens were also collected adjacent to these main locations. The holotypes will be deposited in the BORNEENSIS collection at the Institute for Tropical Biology and Conservation (ITBC), Universiti Malaysia Sabah in Kota Kinabalu, Sabah, Malaysia.

## Results and Discussion

### Key to known species of the genus *Tamdaoana* Medvedev

1. Elytra wholly regularly punctate striate; body blackish ----- 2
  - Elytra irregularly punctate on 1st to 4th striae, owing to dense punctuation on interstices; body dark brown with head and pronotum yellowish brown; aedeagus simple, distinctly curved downward at apex (Figure 1C) ----- *T. subseriata* Medvedev
2. Pronotum almost subparallel-sided; head with frontal tubercles narrowly triangular; last visible abdominal sternite densely punctate; aedeagus simple, strongly curved upwards at apex (Figure 1A) ----- *T. kotakinabaluensis* n. sp.
  - Pronotum distinctly narrowed anteriorly; head without frontal tubercles; last visible abdominal sternite sparsely punctate; aedeagus oar-shaped at apex, strongly curved upwards in lateral view (Figure 1B) ----- *T. monticola* n. sp.

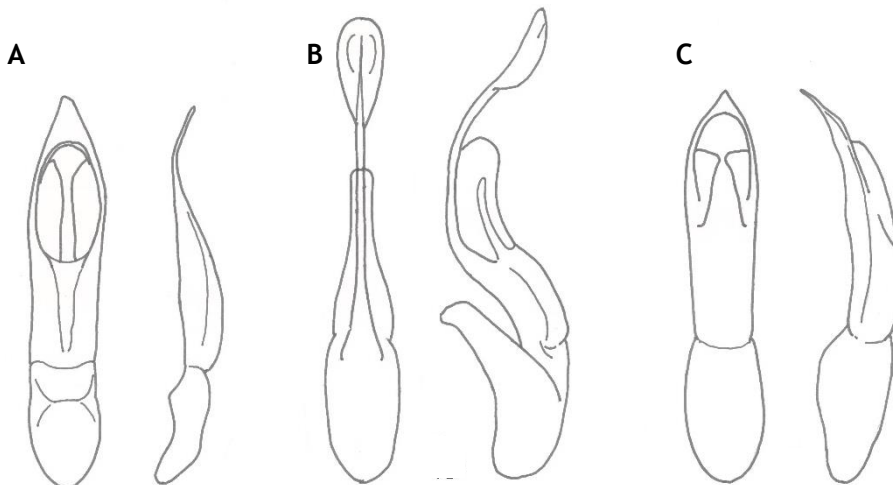


Figure 1. Illustrations of Aedeagus of *Tamdaoana* species (left, dorsal view; right, lateral view). A *T. kotakinabaluensis* n. sp. B *T. monticola* n. sp. C *T. subseriata* Medvedev (paratype).

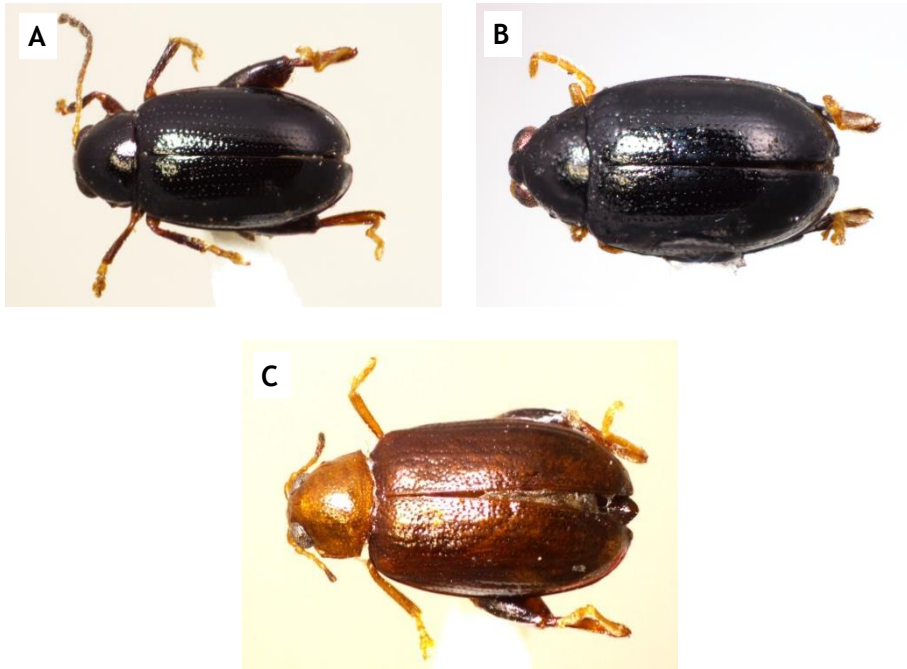
## Taxonomy

### *Tamdaoana kotakinabaluensis* n. sp. (Figure 2A)

**Holotype.** Male, UMS hill, Kota Kinabalu, Sabah, Malaysia, 28.XII.2007, H. Takizawa leg. (ITBC, Kota Kinabalu)

**Paratypes.** 2♂, UMS hill, Kota Kinabalu, Sabah, Malaysia, 9.III.2010, H. Takizawa leg.; 1♂, ditto, 14.III.2009, H. Takizawa leg.; 3♂, 4♀, ditto, 14.XI.2007, H. Takizawa leg.; 6♂, 6♀, TV station, Telipok, Kota Kinabalu, Sabah, 8.XI.2007, H. Takizawa leg.; 2♀, Poring Park, Ranau, Sabah, 25-26.II.2008, H. Takizawa leg.; 3♂, 3♀, 22.III.2008, H. Takizawa leg.; 1♂, 2♀, ditto, 29-30.IX.2007, H. Takizawa leg.; 2♀, ditto, 29-30.XI.2007, H. Takizawa leg.; 4♀, ditto, 19-20.XII.2007, H. Takizawa leg.; 2♂, 3♀, Kg. Tibabar, Ranau, Sabah, 25.VII.2011, H. Takizawa leg.; 1♀, Mahua waterfall, Crocker R. Park, Tabanan, Sabah, 21.III.2012, H. Takizawa leg.; 1♂, Ulu Senagang subst., Crocker R. Park, Keningau, Sabah, 10-12.III.2012, H. Takizawa leg.; 1♂, 1♀, Crocker R. Park, HQ., Keningau, Sabah, 9.III.2012, H. Takizawa leg.; 1♂, 3♀, Taman Bunsit, Keningau, Sabah, 16.VI.2007, H. Takizawa leg.; 2♂, Tawai Forest Reserve, Telupid, Sandakan, Sabah, 25-26.I.2011, H. Takizawa leg.

**Other specimens examined.** 3♀, UMS hill, Kota Kinabalu, Sabah, Malaysia, 7.I.2008, H. Takizawa leg.; 1♂, 1♀, ditto, 17.I.2009, H. Takizawa leg.; 1♀, ditto, 25.I.2008, H. Takizawa leg.; 1 ♀, ditto, 31.I.2008, H. Takizawa leg.; 2♀, ditto, 26.III.2008, H. Takizawa leg.; 1♀, ditto, 9.IV.2008, H. Takizawa leg.; 1♀, ditto, 20.V.2008, H. Takizawa leg.; 2♀, ditto, 4.VI.2008, H. Takizawa leg.; 1♀, ditto, 2.VII.2010, H. Takizawa leg.; 1♀, ditto, 4.VII.2008, H. Takizawa leg.; 1♂, 4♀, ditto, 8.VII.2007, H. Takizawa leg.; 1♂, 1♀, 31.VII.2010, H. Takizawa leg.; 3♀, ditto, 7.VIII.2010, H. Takizawa leg.; 1♀, ditto, 17.VIII.2010, H. Takizawa leg.; 1♂, 2♀, ditto, 22.VIII.2007, H. Takizawa leg.; 1♂, 2♀, ditto, 23.VIII.2008, H. Takizawa leg.; 1♀, ditto, 4.IX.2008, H. Takizawa leg.; 3♀, ditto, 19.IX.2007, H. Takizawa leg.; 1♀, ditto, 24.IX.2007, H. Takizawa leg.; 1♀, ditto, 2.X.2008, H. Takizawa leg.; 1♂, 5♀, ditto, 11.X.2007, H. Takizawa leg.; 2♀, ditto, 15.X.2008, H. Takizawa leg.; 1♂, 1♀, ditto, 21.X.2008, H. Takizawa leg.; 2♂, 2♀, ditto, 6.XI.2007, H. Takizawa leg.; 1♂, 2♀, ditto, 8.XI.2009, H. Takizawa leg.; 2♂, 2♀, ditto, 28.XI.2008, H. Takizawa leg.; 1♂, 1♀, ditto, 5.XII.2007, H. Takizawa leg.; 2♂, 2♀, ditto, 14.XII.2007, H. Takizawa leg.; 3♂, 3♀, ditto,



**Figure 2.** Type specimens of the three *Tamdaoana* species. A *T. kotakinabaluensis* n. sp. (holotype). B *T. monticola* n. sp. (holotype). C *T. subseriata* Medvedev (paratype: female).

26.XII.2007, H. Takizawa leg.; 1♀, ditto, 28.XII.2008, H. Takizawa leg.

#### **Description.**

**Male.** Body oblong ovate, 2.5-2.8 mm in length; shining black with head anteriorly and legs dark reddish brown with hind femora and tibiae darkened on dorsal side; tarsi yellowish brown; antennae yellowish brown on basal 5 segments, infusate beyond 5th.

Head narrower than pronotum at apex; vertex weakly convex at median portion, impunctate and finely wrinkled, rather roundly delimited anteriorly by sharp supra-tubercular furrows; frontal tubercles narrowly triangular and obliquely situated, touching to each other at inner angle; frons subparallel-sided between antennal sockets thence obliquely widened and depressed anteriorly, with a sharp median carina posteriorly; eyes large and convex, with inter-ocular space as wide as transverse diameter of eye in frontal view; antennae rather robust, 0.7 as long as body, dilated apically on last 4 segments, thickly pubescent beyond 4th; 10th segment shorter than twice its width; 1st and 2nd robust, combined together as long as 11th; 11th 1.3 times as long as 7th, 2.5 times as long as 2nd; relative length of antennal segments as: 11th >> 7th = 8th = 9th > 5th = 6th = 10th > 1st > 4th > 2nd = 3rd.

Pronotum transverse and subquadrate, 1.4 times as wide as long, marginate on lateral and posterior margins, widest at middle, then slightly narrowed to both ends; anterior angle broadly and obliquely truncate and angularly dilated at posterior end; posterior angle weakly tuberculate; each angle with a long seta; basal margin gently produced and weakly bi-sinuate; disc gently convex from side to side, densely covered with small punctures; interstices finely granulate. Scutellum broadly triangular, rounded at apex, as long as wide. Elytra each 3 times as long as wide, gently widened from base to middle, thence roundly narrowed to apex; humerus well developed, bounded internally by 6th punctate stria; disc with 11 regular rows of punctures; interstices flat, finely wrinkled and reticulate; epipleura broad and subparallel-sided, on apical 1/4 gradually narrowed; disc smooth and shining.

Prothoracic sternum rugosely punctured, almost as wide as long between coxae; anterior coxal cavities open; mesothoracic sternum weakly rugose, with inter-coxal space slightly wider than prothoracic one; 1st visible abdominal sternite rugose with dense hairs; last one transversely trilobed at apex, gently convex anteriorly to median lobe, with sparse long hairs. Hind femora strongly incrassate; hind tibiae stout, gently widened to apex, 1.3 times as long as 1st tarsal segment, without small callosity for 1st tarsal segment; all 3rd tarsal segments strongly widened; claws appendiculate. Aedeagus (Figure 1A) subparallel-sided, gently narrowed to dull apex on apical 2/9; apical portion somewhat distorted and strongly curved upwards in lateral view.

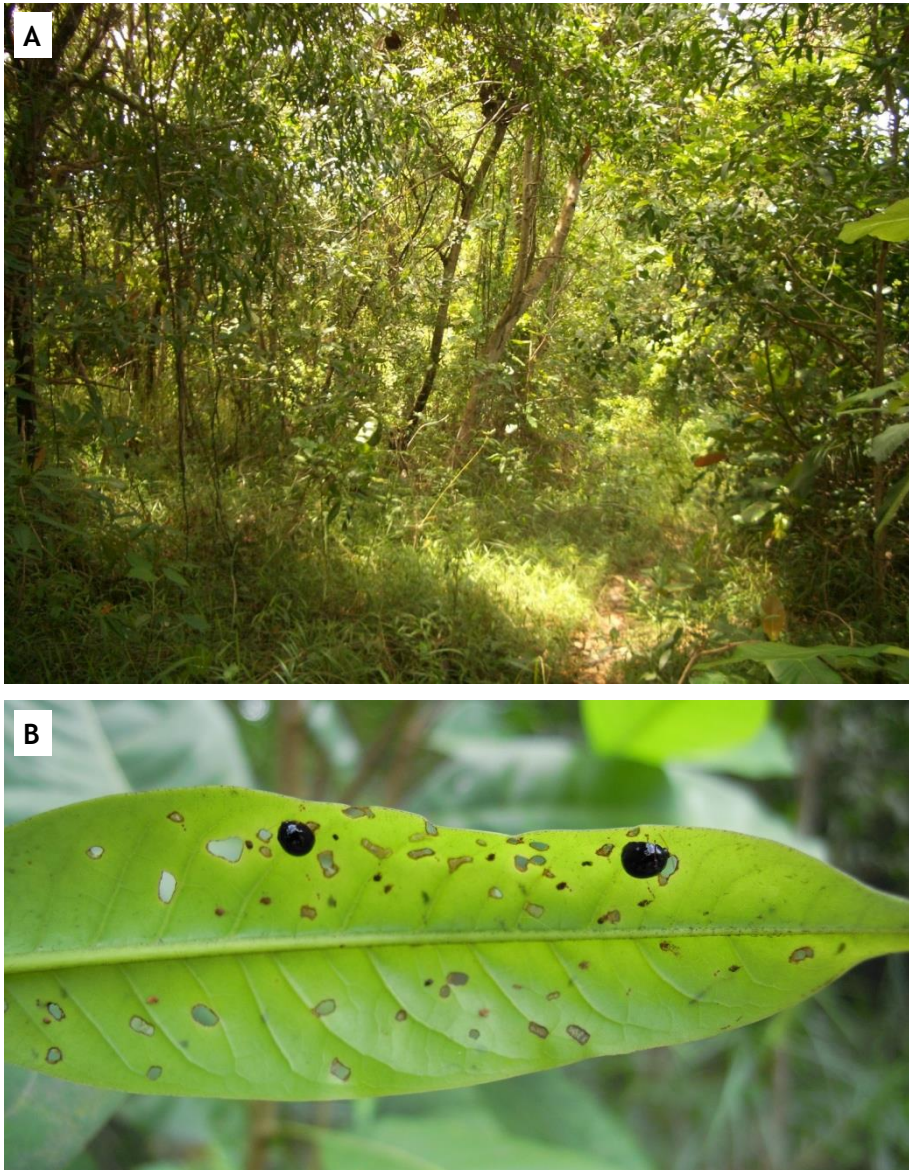
**Female.** Body 2.5-3.5 mm in length; last abdominal sternite simply produced at apex, densely pubescent and punctate.

**Distribution.** Borneo (Sabah).

**Host plants.** Undetermined low tree (Figures 3A & 3B).

**Remarks.** This new species is characterized by blackish body with distinct frontal tubercles on head, and by aedeagus strongly curved upwards on apical portion. It is distinguished from *subseriata* Medvedev by blackish body and elytra which are wholly regularly punctate striate, and from *monticola* n. sp. by head with distinct frontal tubercles and aedeagus simply shaped.

This species feeds on leaves of an unidentified bush tree in the lowlands to low mountains of 30 to 700m above sea level. It is found in sunny open secondary forests and along its margins. Though the host tree is not yet identified, it also houses *Argopistes* sp. and *Dactylispa* sp. at UMS hill, Kota Kinabalu. Adults are found all year round, but larvae were never observed on leaves at UMS hill.



**Figure 3.** *Tamdaoana kotakinabaluensis* habitat. **A** Habitat of *T. kotakinabaluensis* at UMS hill, Kota Kinabalu, Sabah, Malaysia. **B** Host leaf (not identified) of *T. kotakinabaluensis* that was also food of *Argopistes* sp.

So far, its habitat seems segregated from that of *monticola* n. sp. which occupies the 1,300-1,900m above sea level range. Two female specimens from Malay Peninsula (2 exs., Lojing, Gua Musang, Kelantan, 8.VI.2008, H. Takizawa leg.) are closely similar to this new species, but

they are wholly blackish with first abdominal sternite sparsely punctate and pubescent. Until male specimens become available, I refrain from deciding the status of the Malay Peninsula population. Its specific name was derived from the type locality, Kota Kinabalu in Sabah.

***Tamdaoana monticola*** n. sp. (Figure 2B)

**Holotype.** Male, Kg. Himbaan, Bundu Tuhan, Ranau, Sabah, Malaysia, 10. III.2010, H. Takizawa leg. (ITBC, Kota Kinabalu)

**Paratypes.** 1♂, 2♀, data same as the holotype; 3♀, Gn. Alab, Crocker R. Park, Tambunan, Sabah, Malaysia, 11.VII.2007, H. Takizawa leg.; 1♀, Kinabalu Park, HQ, Ranau, Sabah, 14.III.2012, H. Takizawa leg.; 1♀, Kg. Sayap, Kota Belud, Sabah, 2.IX.2013, H. Takizawa leg.

**Description.**

**Male.** Body oblong ovate, 2.5 mm in length; black with antennae and lower mouthparts yellowish brown; legs yellowish brown with hind femur largely blackish brown; tibiae infusate.

Head narrower than pronotum; vertex rather broadly elevated at median portion, shining with few punctures, acutely delimited anteriorly by sharp supra-tubercular furrows; frontal tubercles very narrow and oblique, almost indiscernible; frons with narrow and acute median ridge; eyes large and convex, with inter-ocular space as wide as transverse diameter of eye in frontal view; labial palpi with penultimate segment strongly swollen; antennae rather robust, 0.7 as long as body; 1st and 2nd segments robust; 10th twice as long as wide; 11th almost twice as long as 2nd; relative length of antennal segments as: 11th > 5th = 7th = 8th = 9th > 10th > 1st > 4th = 6th > 3rd > 2nd.

Pronotum transverse 1.4 times as wide as long, widest at basal angles, thence weakly but distinctly narrowed to anterior angles; anterior angles much weakly oblique, at posterior end evenly angulate; disc gently convex, densely covered with fine punctures and shagreened. Scutellum broadly rounded at apex. Elytra each 2.3 times as long as wide, gently widened from base to middle, thence roundly narrowed to apex; disc with 11 regular rows of punctures, with interstices flat and finely punctate; epipleura rather wide, subparallel-sided, gently narrowed on apical 1/3.

Prosternum wide and rugosely punctate; mesosternum smooth and flat; 1st abdominal sternite covered with fine punctures; last abdominal sternite broadly depressed anteriorly to median lobe, and weakly tri-lobed, with small median lobe. Hind femora strongly incrassate; hind tibia robust, flat on dorsal side, 1.5 times as long as 1st tarsal segment; apical spur short and acute. Aedeagus oar-shaped at apex, strongly curved upwards in lateral

view (Figure 2B).

**Female.** Body 2.8-3.0 mm in length; 1st abdominal sternite smooth and shining; last abdominal sternite simply rounded at apex and finely granulate.

**Distribution.** Borneo (Sabah).

**Host plants.** Unknown.

**Remarks.** This new species is closely similar to *kotakinabaluensis* n. sp., but has pronotum distinctly narrowed anteriorly and head without distinct frontal tubercles. Further, the male aedeagus is complex with 3 lobes in lateral view. This was collected by sweeping along trails at montane areas over 1,000m above sea level: Kampung Sayap at 1,000m; Kampung Himbaan at 1,300-1,400m; Kinabalu Park headquarters area at 1,500-1,900m; and Gunung Alab at 1,600-1,900m. The specific name is related to its montane habitat.

***Tamdaoana subseriata* Medvedev (Figure 2C)**

*Tamdaoana subseriata* Medvedev, 2009: 195.

**Holotype.** Tam Dao, Vietnam (L. Medvedev collection)

**Specimens examined.** 1♂, Tam Dao, 900m, Vietnam, 4.VI.1981, L. Medvedev et al. (paratypes); 2♀, Tam Dao, Prov. Vinh-phu, Vietnam, L. Medvedev et Dang Dap (paratypes)

**Description.**

**Male.** Body oblong ovate, 3 mm in length; dark brownish with head, prothorax, antennae on 4 basal segments and legs except for hind femora, pale yellowish.

Head with frontal tubercles obscure triangular, not delimited behind; eyes large with inter-ocular space wider than transverse diameter of eye in frontal view.

Pronotum subquadrate, weakly narrowed anteriorly; disc densely covered with small punctures with interstices granulate; elytra regularly punctate-striate, except for 1st to 4th punctate rows which are indistinct owing to dense puncturation on interstices; interstices weakly costate on lateral areas.

Prosternum longer than wide between coxae; last visible abdominal sternite with small median lobe; aedeagus subparallel-sided, triangularly narrowed to apex, where it is distinctly curved downward (Figure 1C).

**Female.** 1st abdominal sternite simple, without paired short ridges.

**Distribution.** Vietnam.

**Host plants.** Unknown.



## Conclusion

In establishing the genus *Tamdaoana*, Medvedev compared it with *Longitarsus* Latreille and dubiously associated it to the latter. But its systematic position remains unclear. With additional new species, this genus seems somewhat heterogenous with regards to some important characters like the shape of its frontal tubercles and median elevation of vertex. But the following characters are found among these 3 species in different combinations: body rather convex dorsally with largely punctate-striate elytra, more or less elevated vertex, frontal tubercles narrowly linear or absent, hind tibiae stout and flat on the upper side and widened to apex. Presence of these characters is suggestive of close similarity to the genus *Lanka* Maulik.

## References

Medvedev LN. 2009. *Alticinae of Indochina*. KMK Scientific Press, Moscow. Pp. 223