Revision of the genus *Pseudethas* Fairmaire, with descriptions of four new species from Nepal and Thailand (Coleoptera: Tenebrionidae: Stenosini)

René Fououè

Abstract

The species of the genus *Pseudethas* Fairmaire, 1896 (Coleoptera: Tenebrionidae: Stenosini) are revised, and four new species are described. Diagnostic characters are illustrated. A key to all species is provided. – New species: *Pseudethas (Pseudethas) longigenus* **n.sp.** (Nepal), *P. (P.) schawalleri* **n.sp.** (Nepal), *P. (P.) thailandicus* **n.sp.** (Thailand), *P. (Stenillus) weigeli* **n.sp.** (Nepal).

K e y w o r d s: Coleoptera, Tenebrionidae, Stenosini, Pseudethas, new species, Nepal, Thailand, aedeagus.

Zusammenfassung

Die Arten der Gattung *Pseudethas* Fairmaire, 1896 (Coleoptera: Tenebrionidae: Stenosini) werden revidiert mit Beschreibungen von vier neuen Arten. Die diagnostischen Merkmale werden abgebildet. Ein Bestimmungsschlüssel für alle Arten wird aufgestellt. – Neue Arten: *Pseudethas (Pseudethas) longigenus* **n.sp.** (Nepal), *Pseudethas (P.) schawalleri* **n.sp.** (Nepal), *Pseudethas (P.) thailandicus* **n.sp.** (Thailand), *P. (Stenillus) weigeli* **n.sp.** (Nepal).

Contents

1	Introduction	357
2	Methods	358
	The previously known species of <i>Pseudethas</i>	
	New species of Pseudethas	
	Key to the species of <i>Pseudethas</i>	
6	References	369

1 Introduction

The genus *Pseudethas* Fairmaire, 1896 (including the newly described four species of the present paper) consists of 15 species in two subgenera. Its type species is *Pseud*ethas quadraticeps Fairmaire, 1896, described from Simla (India, Uttaranchal). P. rogersi (Wasmann, 1899) was described in the new genus Schizillus from Mussoorie (India-Uttar Pradesh), but since this genus name was a homonym of Schizillus Horn, 1874, WASMANN (1902) erected the replacement name Dischizillus. BLAIR (1927) described the monotypic new genus Stenillus from Tibet (S. monticola), and he also indicated that Dischizillus was synonymous with *Pseudethas*. KASZAB (1960) described *P*. afghanicus from Afghanistan and attached a first key to three species of the genus. The genus Stenillus was downgraded by Kaszab (1973) to a subgenus of the genus Pseudethas. later, Kaszab (in Kaszab et al. 1978) described a new subspecies, P. rogersi ladakhensis, from Ladakh. The number of species was growing to ten, when KASZAB (1981) upgraded the subspecies *ladakhensis* to species level and described five additional new species (P. antennalis, P. nepalicus, P. costatus, P. pakistanus and P. *incostatus*) from Nepal, Pakistan and India. This study also contained a key to species and photographs of the newly described species. Finally, Schawaller (2001) described *P. jaegeri* from Tibet with drawings of the dorsal view, part of the legs and the aedeagus. A checklist of the known species of *Pseudethas* is added in this paper.

Medvedev (1994) indicated in his key to genera and subgenera of the tribe Stenosini that the pronotum of the subgenus *Stenillus* is "without medial depression or flatted area". However, this is not always true because the pronotum of *P. (Stenillus) monticola* (Blair, 1927) shows a distinct flattened area medially in its posterior third.

Type material of all species except *P. quadraticeps* Fairmaire, 1896 was available to me. BLAIR's label "Type" and WASMANN's label "Cotype" are here interpreted as holotype and paratype, respectively. Specimens of the genus *Pseudethas* are rare in collections, probably due to the small body size and the small remote distribution areas.

Species of the genus *Pseudethas* are distributed at altitudes between 1300–5150 m from the Hindu Kush in Afghanistan, over Karakoram, northern India, east Himalaya up to Mount Everest, but a newly described species is now surprisingly also known from the Thai province Phetcha

Buri (situated at the base of the Malayan peninsula) at an altitude of only 40 m (Fig. 1). This is the first record of *Pseudethas* from Southeast Asia and also a new tenebrionid genus for the Thai fauna. Only the genera *Stenosis*, *Dichillus* and *Gebieniella* were hitherto known from Thailand. The locality Ban Sa Yai Non, where I collected together with my colleague Stanislav Bečvář, is situated in coastal lowland and shows steppe character (Fig. 60).

Wasmann (1899) mentioned that *P. rogersi* had been collected in nests of the ant *Pheidole indica* Mayr 1879. *P. afghanicus* Kaszab, 1960 was collected under stones in ants' nests of the genus *Tapinosoma* (Kaszab 1960). *P. ladakhensis* was found under stones in irrigation channels (Kaszab et al. 1978), and Schawaller (2001) stated, that *P. jaegeri* was also collected under stones. *P. thailandicus* n. sp. was found by me under stones as well, but also under a piece of wood and under a fallen abandoned ant-nest of the genus *Crematogaster*.

The genus *Pseudethas* is characterized by parallel elytra and a flattened surface. The elytral base is considerably wider than the pronotal base. The tempora are often convex, sometimes just parallel. The pronotum usually has a median longitudinal impression, which may be only very slightly developed at times. Males possess a small tooth each on the inner side of the middle and posterior tibiae. Body length is between 2.7 and 4.8 mm.

Herbertfranzia Kaszab, 1973, a closely related genus with a single endemic species in Nepal, can be distinguished by its oval elytra, arched body, elytral base hardly wider than pronotal base, and pronotum without impression.

Kaszab (1981) stated that *P. costatus* eventually has to be transferred into a new subgenus or even genus. He mentioned that this species is more similar to *Indochillus* than to *Pseudethas*: "Diese Art weicht von allen bekannten Arten der Gattung *Pseudethas* wesentlich ab. Charakteristisch sind die vier Flügendeckenrippen sowie der in der Mitte nicht eingedrückte Halsschild.". This is not quite correct, however, because there is a very faint impression on the posterior third of the pronotum. I classify this species in the genus *Pseudethas* (*Pseudethas*) because it has all generic characters of *Pseudethas*.

The genus *Indochillus* Koch, 1941, described from India, is similar to *Pseudethas* but is distinguished by the following characters: base of pronotum of same width as elytral base, elytra gradually extending from base, temporae very long, gradually converging and with abrupt cervical constriction, keels on inner side of eyes prominent. The genus *Indochillus* is in need of revision, and especially the position of the newly described species *I. convexigena* Ren & Shi (see Ren & Shi 2006) needs to be established.

Abbreviations of museums and collections

CBS Collection Stanislav Bečvář, České Budějovice,

Czech Republic

CFR Collection René Fouque, Liberec, Czech Republic HNHM Hungarian Natural History Museum, Budapest,

Hungary (Dr. Ottó Merkl)

MHNG Muséum d'Histoire Naturelle, Genève, Switzerland

(Dr. Giulio Cuccodoro)

NHM The Natural History Museum, London, U. K. (MAX

BARCLAY)

NHMB Naturhistorisches Museum, Basel, Switzerland (Dr. MICHEL BRANCUCCI, ISABELLE ZÜRCHER)

NHMB-F Naturhistorisches Museum, Basel, Switzerland, collection Frey (Dr. Eva Sprecher)

NKME Naturkundemuseum, Erfurt, Germany (Matthias

HARTMANN)

SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany (Dr. WOLFGANG SCHAWALLER)

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2 Methods

The length of the head is measured from the front margin of the clypeus to the cervical constriction. The length of the elytra is measured from anterior corner to apex.

In the lists of materials, some localities are not cited in the original spelling of the labels, but are given in a standardized form. The former Indian state Uttar Pradesh (U. P.) was divided into Uttar Pradesh and the new state Uttaranchal in November 2000; this new situation is considered in the present paper.

3 The previously known species of Pseudethas

Pseudethas (Pseudethas) afghanicus Kaszab, 1960 (Figs. 11, 42–44)

Pseudethas afghanicus Kaszab, 1960 - Kaszab 1960: 3.

Studied type material: E Afghanistan, Hindu Kush (Hindukusch), Salang Valley, Walang, 2550 m, 14.XI.1952, leg. J. Klapperich, $2 \, \circlearrowleft \, 3 \, \subsetneq \varphi$ paratypes HNHM, $2 \, \circlearrowleft \, 3 \, \subsetneq \varphi$ paratypes NHMB-F, $1 \, \varphi$ paratype NHM.

New material: None.

Distribution: Afghanistan (Hindu Kush).

Remarks: A species with notably parallel tempora which are as long as the eye. Kaszab (1970) mentions additional localities in Afghanistan: Bag-Chah Babar (Kabul), Tchidjan (close to Cheikhabad), Kouh-Ghar Khvadjah (close to Mazanah, Ghorband Valley).

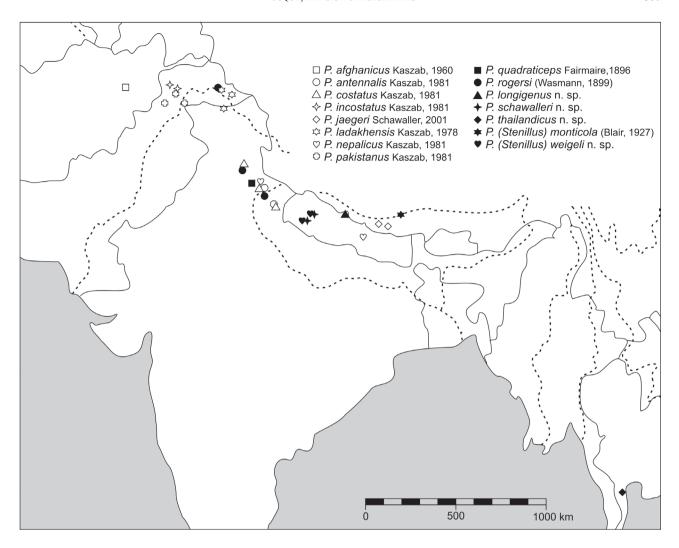


Fig. 1. Distribution of *Pseudethas* spp.

Pseudethas (Pseudethas) antennalis Kaszab, 1981 (Figs. 7, 30–32)

Pseudethas antennalis Kaszab, 1981 - Kaszab 1981: 298.

New material: Same data as holotype, 2 $\mathbb{Q}\mathbb{Q}$ NHM. — Same data as paratype, 3 $\mathbb{Q}\mathbb{Q}$ NHM. — India, Uttaranchal (labelled U. P.), Nainital, 1900 m, 27.VI.1989, leg. R. SCHUH, 1 \mathbb{Q} CBS. — India, Uttaranchal, Nainital env., 1900—2100 m, 19.—21. VI.2003, leg. Z. Kejval & M. Trýzna, 1 \mathbb{Q} CFR. — N India, Uttaranchal state, 30 km N of Rishikesh, NW of Chamba, Arakot vill. env, 1500 m, 29.—31.VII.2003, leg. Z. Kejval & M. Trýzna, 1 \mathbb{Q} CFR.

Distribution: India (Uttaranchal).

Remarks: A robust species, distinguished from other *Pseudethas* by the longitudinal pronotal impression

over its whole length, the extraordinary thick antennae and the notably parallel elytra. In the NHM collection this species was erroneously determined as *P. rogersi*, which is superficially similar, but can be distinguished by the apically widened antennae and rounded elytra. The aedeagus of the only available male (body length 3.8 mm) of *P. antennalis* is figured in this paper (Fig. 32).

Pseudethas (Pseudethas) costatus Kaszab, 1981 (Figs. 12, 45–47)

Pseudethas costatus Kaszab, 1981 - Kaszab 1981: 303.

Studied type material: India, Uttaranchal, Nainital, 8400 ft. (2560 m), 14.II.1934, leg. J. A. Graham, 1 ♂ paratype NHM. – India, Uttaranchal (labelled U. P.), Chakrata, VI.1923, leg. C. F. C. Beeson, 1 ♀ paratype NHM. – India, Uttaranchal (labelled U. P.), Mundali, Chakrata, 11.IV.1933, leg. J. C. M. Gardner, 1 ♀ paratype NHM. – India, Uttaranchal (la-

belled U. P.), Mundali 8408 (2560 m), Chakrata, 29.V.1937, leg. J. C. M. Gardner (ex *Quercus dilatata*), 1 ♂ paratype HNHM. – India, Uttaranchal (labelled U. P.), Deoban, 9700 ft. (2960 m), Chakrata, 21.VI.1933, leg. B. M. Bhatia (under stone), 1 ♀ paratype HNHM.

New material: India, Himachal Pradesh, Kulu, 7000 ft. (2130 m), NHMB-F – erroneously identified by Reitter as *P. rogersi*.

Distribution: India (Uttaranchal, Himachal Pradesh).

R e m a r k s: *P. costatus* is a large species, remarkable because of its strongly roof-shaped keels of the 3rd, 5th, 7th and 9th elytral intervals and prominent humeral corners. Kaszab (1981) also mentioned that this species had no impression in the middle of the pronotum, but a weak impression is found in its posterior third. *P. schawalleri* n. sp. is similar to this species, distinguished by its slightly convex non-keeled elytral intervals (which are flat in *P. costatus*), and different shape of pronotum and head.

Pseudethas (Pseudethas) incostatus Kaszab, 1981 (Figs. 15, 54–56)

Pseudethas incostatus Kaszab, 1981 - Kaszab 1981: 302.

Studied type material: Pakistan, Kalam, Swat, 6830 ft. (2080 m), \mathcal{L} holotype HNHM.

N e w m a t e r i a l : Pakistan, Swat, Vallée d'Ushu, 2300 m, 15.V.1983, leg. Besuchet & Löbl, 46 ex. MHNG, 3 ex. SMNS, 2 ex. CBS. — Pakistan, Swat, Kalam, 2100 m, 12.V.1983, leg. Besuchet & Löbl, 1 ex. MHNG. — Pakistan, Swat, s/Utrot, 2500—2600 m, 13.V.1983, leg. Besuchet & Löbl, 2 ex. MHNG. — Pakistan, Chitral, Lawarai Pass, 2600 m, 23.V.1983, leg. Besuchet & Löbl, 8 ex. MHNG, 1 ex. SMNS, 1 ex. CBS. — Pakistan, Chitral, Bumburet, 2200—2350 m, 24.V.1983, leg. Besuchet & Löbl, 11 ex. MHNG, 1 ex. SMNS, 2 ex. CBS. — Pakistan, Chitral, s/Madaglasht, 2900—3050 m, 27.V.1983, leg. Besuchet & Löbl, 1 ex. MHNG. — Pakistan, Chitral, Kalas, 1900 m, 28.V.1983, leg. Besuchet & Löbl, 2 ex. MHNG. — Pakistan, Chitral, Lotkoh, 2350 m, 29.V.1983, leg. Besuchet & Löbl, 1 ex. MHNG.

Distribution: Pakistan (North West Frontier Province).

Remarks: The holotype is a female; therefore the aedeagus pictured in this paper is taken from a non-type specimen. This species is most numerous in collections; besides the holotype 82 specimens were collected during an expedition of C. Besuchet and I. Löbl (Genève). *P. pakistanus* is very similar, mainly distinguished from *P. incostatus* by the shape of its head and pronotum.

Pseudethas (Pseudethas) jaegeri Schawaller, 2001 (Figs. 14, 51–53)

Pseudethas jaegeri Schawaller, 2001 – Schawaller 2001: 143.

Studied type material: Tibet, 44km SW Tingri, La-Lung La (Tong La), N28°30'59.9, E86°10'2.1, 5150 m, 5.VIII.1998, leg. O. Jäger, 1 3 paratype SMNS.

New material: SW Tibet, Himalaya Mts., 60 km south

of Saga, 4600–5000 m, 23.–24.VI.2004, leg. V. Major, 2 $\circlearrowleft \circlearrowleft$, 1 \circlearrowleft CFR.

Distribution: Tibet.

R e m a r k s: Typical for this species are the flattened elytral intervals and the glossy deep black body (including legs and antennae).

Pseudethas (Pseudethas) ladakhensis Kaszab, 1978 (Figs. 9, 36–38)

Pseudethas rogersi ladakhensis Kaszab, 1978 – Kaszab in Kaszab et al. 1978: 223.

Pseudethas ladakhensis - Kaszab 1981: 296.

Studied type material: India, Ladakh, Kargil, 2950 m, 30.V.-7.VI.1976, leg. Martens & Schawaller, 1 & paratype HNHM.

New material: Pakistan, Alchori, Valle Shigar, 26.IV.1929, 1 ex. NHMB-F. – Pakistan, Baltistan Prov., Hushe Valley, 5 km south from Hushe, 2800 m, 28.VIII.1997, leg. M. ŠLACHTA (under stone), 1 \circlearrowleft CBS. – Pakistan, Karakoram Mts., Baltistan Prov., Hushe Valley, 3 km N of Kande, 3070 m, 17.IX.2001, leg. M. ŠLACHTA, 4 \circlearrowleft CBS.

Distribution: India (Jammu and Kashmir), Pakistan (Northern Areas).

Remarks: *P. ladakhensis*, superficially similar to *P. rogersi*, differs mostly in the shape of the head (tempora gradually narrowing towards cervix and genae not extended, widest at level of eyes).

Pseudethas (Pseudethas) nepalicus Kaszab, 1981 (Figs. 5, 24–26)

Pseudethas nepalicus Kaszab, 1981 - Kaszab 1981: 299.

Studied type material: Nepal, Kathmandu Valley, Balaju, 1300–1370 m, 23.V.1977, leg. WITTMER & BRANCUCCI, & holotype NHMB.

New material: Same data as holotype, 4 ex. NHMB. – India, Himachal Pradesh, Chopal-Khangna Nallah, 2000–2300 m, 7.V.1977, leg. Wittmer & Brancucci, 2 \circlearrowleft 1 \circlearrowleft HNHM. – India, Himachal Pradesh, Chopal, 2400–2750 m, 7.V.1977, leg. Wittmer & Brancucci, 1 \circlearrowleft HNHM. – India, Himachal Pradesh, Simla, Tharoch, 6500 ft. (1980 m), 22.V.1924, leg. B. M. Bhatia (under stone), 1 \circlearrowleft HNHM.

Distribution: Nepal (Kathmandu Valley), India (Himachal Pradesh).

Remarks: There are four specimens in NHMB with the same label data as the holotype, but they were obviously not included in the type series by Kaszab. Another specimens in NHMB and HNHM were erroneously identified as *P. quadraticeps* and *P. rogersi*, distinguished from *P. nepalicus* by number and size of the elytral punctures and the keel of the 7th elytral interval.

Pseudethas (Pseudethas) pakistanus Kaszab, 1981 (Figs. 16, 57–59)

Pseudethas pakistanus Kaszab, 1981 – Kaszab 1981: 301.

Studied type material: Pakistan, Naran, Khagan, 2370–2750 m, 22.VI.1977, leg. Wittmer & Brancucci, 3 holotype NHMB, 33, 49 paratypes NHMB, 33, HNHM. – Pakistan, Shogran, Khagan, 2300–2750 m, 17.VI.1977, leg. Wittmer & Brancucci, 19 paratype HNHM.

WITTMER & BRANCUCCI, 1 ♀ paratype HNHM.

New material: Pakistan, Swat, Marghuzar, 1300 m, 8.V.1983, leg. Besuchet & Löbl, 4 ♂ MHNG. — Pakistan, Hazara, s/Naran, 2600 m, 1.VI.1983, leg. Besuchet & Löbl, 1 ♀ MHNG. — Pakistan, Hazara, Kaghan, 2150 m, 2.VI.1983, leg. Besuchet & Löbl, 1 ♂ SMNS. — Pakistan, Hazara, Shogran, 2400 m, 3.VI.1983, leg. Besuchet & Löbl, 2 ♀♀ MHNG. — Pakistan, Hazara, Malkandi, 1500 m, 3.VI.1983, leg. Besuchet & Löbl, 1 ♀ MHNG.

Distribution: Pakistan (North West Frontier Province).

Remarks: I know only the type material of Kaszab and specimens from the expedition of Besuchet and Löbl. *P. pakistanus* is the smallest species of the genus, similar to *P. incostatus*.

Pseudethas (Pseudethas) quadraticeps Fairmaire, 1896 (Figs. 4, 22–23)

Pseudethas quadraticeps Fairmaire, 1896 – Fairmaire 1896: 57.

Studied type material: None.

New material: India, Himachal Pradesh, Punjab, Simla, Kotkhai, Kalala F., 8000 ft. (2440 m), 14.–15.V.1924, leg. C. F. C. Beeson, 1♀NHM. – India, Himalaya, Himachal Pradesh, Simla, 2 ex. NHMB-F, 2 ex. HNHM.

Distribution: India (Himachal Pradesh).

R e m a r k s: Remarkable because of the distinct keels of the 3rd, 5th, 7th and 9th elytral intervals. Only historical material of this species was available for study.

Pseudethas (Pseudethas) rogersi (Wasmann, 1899) (Figs. 8, 33–35)

Schizillus Rogersi Wasmann, 1899 – Wasmann 1899: 166. Dischizillus Rogersi – Wasmann 1902: 244.

Studied type material: India, Uttaranchal, Mussoorie, leg. C. Rogers, 1 \circlearrowleft paratype (labelled cotype) HNHM.

New material: India, Uttaranchal, Mussoorie, 6500 ft. (1980 m), July 1924, leg. J. C. M. Gardner, 1♀ NHM. – India, Uttaranchal, Dehra Dun, 2 ex. NHMB-F. – India, Dhelu, Mandi, Punjab, 4500 ft. (1370 m), leg. H. G. Champion, 1♂ NHM. – Pakistan, Karakoram, Dusso, 28.IV.1929, 1♂ NHMB-F.

Distribution: India (Uttaranchal), Pakistan (Northern Areas).

Remarks: *P. rogersi* has often been confused with other species of *Pseudethas*, so hitherto it seemed to be more common as it is in reality. I saw only historical material from northern India, and one specimen from Dusso in Pakistan, which is situated between Nanga Parbat and K2.

Pseudethas (Stenillus) monticola (Blair, 1927) (Figs. 2, 17–18)

Stenillus monticola Blair, 1927 – Blair 1927: 245. Pseudethas (Stenillus) monticola – Kaszab 1973: 28.

Studied type material: Tibet, Chusar, 13500 ft. (4100 m), 3.V.1924, leg. Maj. R. W. G. HINGSTON, Everest Exp. Brit. Mus. 1924, ♀ holotype (labelled type) NHM.

New material: None. Distribution: Tibet.

Remarks: Known only from the holotype, which was collected during the third British Mount Everest expedition in 1924.

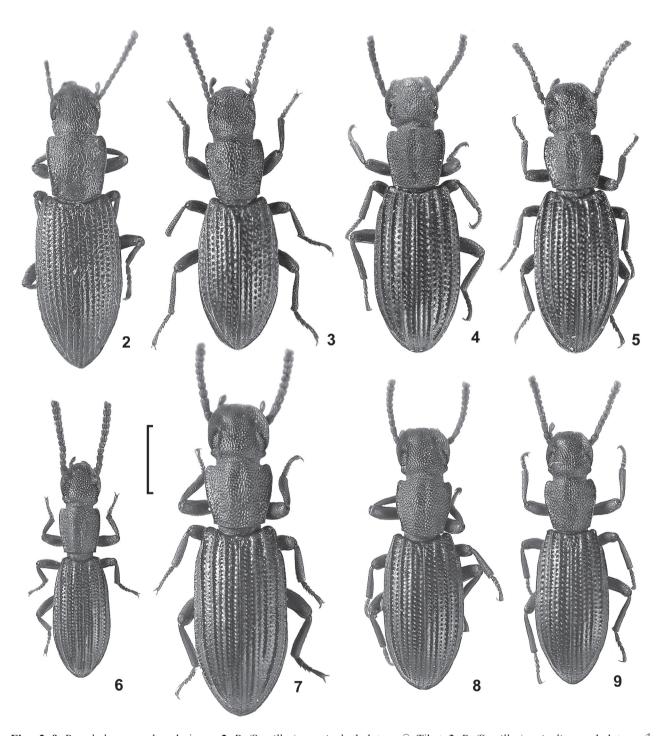
4 New species of *Pseudethas*

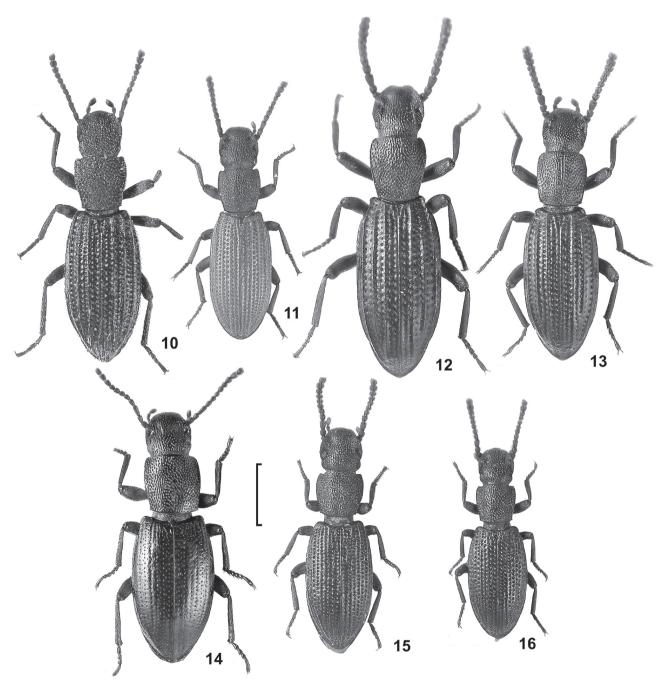
Pseudethas (Pseudethas) longigenus **n. sp.** (Figs. 10, 39–41)

Holotype (♂): Nepal, Mustang District, Kagbeni, Kali Gandaki Valley, 2900 m, 9.VI.1993, leg. D. Ahrens, SMNS. Paratype: Same data as holotype, 1 ♂ SMNS.

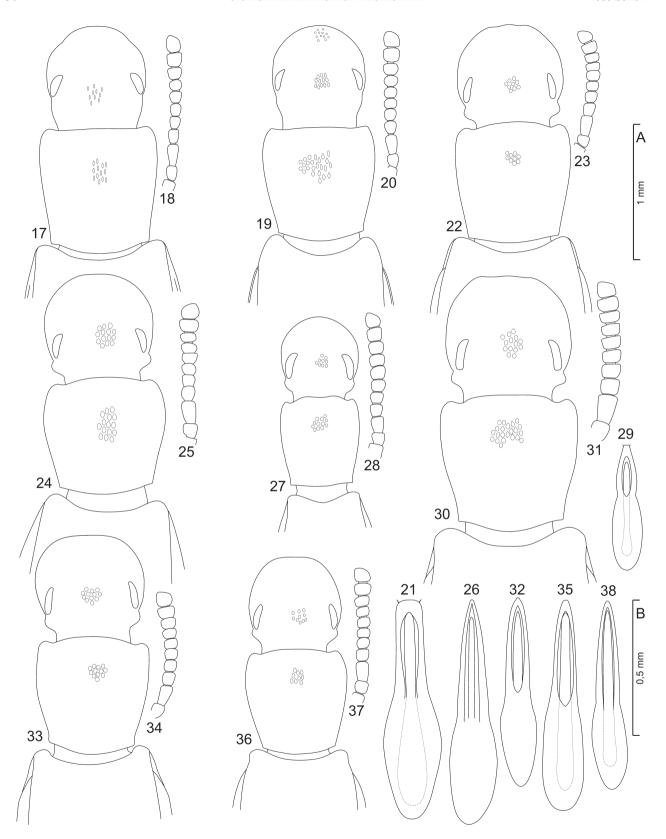
 $E\,t\,y\,m\,o\,l\,o\,g\,y$: Named after the characteristic shape of the genae.

Description: Body length 4.0 mm, body width 1.18 mm. – Body dark-brown, legs and antennae somewhat brighter. 9th-11th antennal segments as dark as body. Body haired with yellow setae. Setae thicker, erect and curved on 5th, 7th, and 9th keel of elytra, as well as on margins of head and pronotum. - Head (Fig. 39): Ratio length/width 51:50, widest before eyes. Eyes completely divided by cheeks, dorsal side of eye with about 14 facets in three rows, ventral side with about 9 facets. Tempora almost parallel or only very slightly extending behind the eye over a distance of about one eye length, then gradually narrowing towards the cervical constriction. Genae extending from the posterior margins of the eyes in a gentle arch, and then leading almost straight to the widest part of the head. Clypeus almost straight, slightly convex. Frons with two impressions. Punctulation on vertex rough, punctures on forehead half as large as on vertex; surface between punctures very roughly wrinkled. Antennae (Fig. 40) long-haired; combined 2nd–11th segments twice as long as width of cervix; ratio of lengths of 2nd-11th segments: 7:10.8:7.3:6.3:6:5.6:5.8:6:7:8.1, ratio of widths: 4.4:5.1:5:4.7:4.7:5:5.5:6:7.2:6.5; last segment concave apically. - Pronotum (Fig. 39) wider than head (58:50), widest at anterior quarter; ratio length/width 61:58, ratio widths at posterior edges/at widest point/at anterior edges 43:58:49. Anterior corners rectangular, slightly protruding. Posterior corners obtuse. Lateral margin of pronotum nodulated all over its length; nodulation more distinct at first third; one row of thick, curved yellow setae on margin. Punctures on pronotum larger than on head, nearly confluent; surface between punctures very roughly wrinkled. – Elytra: 2.8 times as long, 1.4 times as

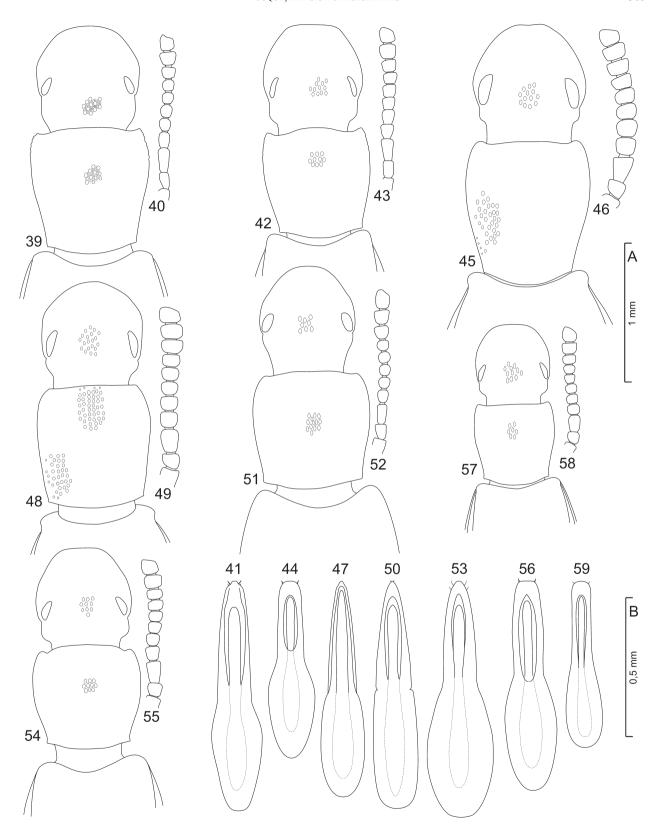




Figs. 10–16. *Pseudethas* spp., dorsal view. – **10.** *P.* (*P.*) *longigenus* n. sp., holotype ♂, Nepal. **11.** *P.* (*P.*) *afghanicus*, paratype ♂, Afghanistan. **12.** *P.* (*P.*) *costatus*, paratype ♂, India (Uttaranchal). **13.** *P.* (*P.*) *schawalleri* n. sp., holotype ♂, Nepal. **14.** *P.* (*P.*) *jaegeri*, ♂, Tibet. **15.** *P.* (*P.*) *incostatus*, holotype ♀, Pakistan. **16.** *P.* (*P.*) *pakistanus*, paratype ♂, Pakistan. – Scale: 1 mm.



Figs. 17–38. Pseudethas spp., head, pronotum and elytral base, antenna, aedeagus. – 17–18. P. (Stenillus) monticola. 19–21. P. (Stenillus) weigeli n. sp. 22–23. P. (P.) quadraticeps. 24–26. P. (P.) nepalicus. 27–29. P. (P.) thailandicus n. sp. 30–32. P. (P.) antennalis. 33–35. P. (P.) rogersi. 36–38. P. (P.) ladakhensis. – Scales: A – head with pronotum and antenna, B – aedeagus.



 $\begin{array}{l} \textbf{Figs. 39-59.} \ \textit{Pseudethas} \ \text{spp.}, \ \text{head, pronotum and elytral base, antenna, aedeagus.} - \textbf{39-41.} \ \textit{P. (P.) longigenus} \ \text{n. sp. 42-44.} \ \textit{P. (P.)} \ \textit{afghanicus.} \ \textbf{45-47.} \ \textit{P. (P.) costatus.} \ \textbf{48-50.} \ \textit{P. (P.) schawalleri} \ \text{n. sp. 51-53.} \ \textit{P. (P.) jaegeri.} \ \textbf{54-56.} \ \textit{P. (P.) incostatus.} \ \textbf{57-59.} \ \textit{P. (P.) pakistanus.} - \textbf{Scales: A - head with pronotum and antenna, B - aedeagus.} \end{array}$

wide as pronotum, widest in the middle; ratio elytral length/width 170:84; ratio basal width of elytra/basal width of pronotum 52:43. Humeral corners rounded (Fig. 39). Keels on 3rd, 5th, 7th and 9th intervals, the other intervals slightly convex. Keels of 3rd, 7th and 9th intervals joined on elvtral declivity, keel of 5th interval fading at the tip and not combined with other keels. Elytral intervals very gently punctured and wrinkled, with setae twice as long as the diameter of the punctures. Keels on 5th, 7th and 9th intervals with thick, erect curved setae. Each elytron with 10 rows of punctures; first row with approximately 27 punctures. Epipleura all over its length with one row of punctures slightly decreasing posteriorly; basal punctures as large as on pronotum. - Abdomen: First sternite with rough punctures larger than on epipleural base. Punctures on other sternites gradually decreasing; surface between punctures slightly wrinkled. Setae on ventral side gentle, vellow, twice as long as the diameter of the punctures. – Legs completely yellow-haired. Anterior femora on inner side with very small nodulation, tibiae thin and elongated, male middle and posterior tibiae with a small apical tooth. - Wingless. Aedeagus (Fig. 41): Length approximately 0.84 mm, with two pairs of apical setae.

Diagnosis: *P. longigenus* n. sp. can easily be recognized by its very long genae (longer than eye), the very rough corrugation on head and pronotum, and by the distinct erect and curved hairs on the elytral keels.

Pseudethas (Pseudethas) schawalleri **n. sp.** (Figs. 13, 48–50)

Holotype (♂): Nepal, Karnali, Jumla to Sisne Himal, 5000 m, 6.–20.VI.1995, leg. J. Kolibáč, SMNS.

Paratypes: Nepal, Dailekh Distr., N Dailekh, 1600 m, 1.–2.VI.1998, leg. W. SCHAWALLER, 3 ♂ SMNS.

Etymology: Named after Dr. Wolfgang Schawaller (Stuttgart), collector of part of the type series, who helped me with my first publication.

Description: Body length 3.90-4.05 mm, body width 1.18-1.25 mm. - Body and antennae brown-black, legs and palps rusty-brown or even reddish. - Head (Fig. 48): Ratio length/width 46:50, widest before eyes. Eyes divided by cheeks, on inner side with eye keel which is most distinct at middle of eye, dorsal side with about 19 facets in three rows, ventral side with about 10 facets. Tempora widest at posterior margin of eyes, almost straight behind eyes over a distance of about one-quarter eye length, then gradually narrowing towards the cervical constriction. Lateral margins of genae almost parallel. Clypeus slightly convex on anterior margin. Frons with two distinct impressions. Punctulation on vertex rough, finer towards clypeus. Punctures somewhat elongate, with fine, white, anteriorly directed setae as long as punctures. Antennae (Fig. 49) yellow-haired; combined 2nd–11th segments twice as long as width of cervix; ratio of lengths of 2nd-11th segments: 6:9.8:7.5:6.5:6:6:5.5:6:6.5:6.5, ratio of widths: 7:7.3:7.3:7:6.7:6.7:7:8.2:8.7:8; last segment cut latero-apically. - Pronotum (Fig. 48) longer than wide (60:55), widest at anterior third, wider than head (55:50); ratio widths at posterior edges/at widest point/at anterior edges 43:50:47. Pronotum in the centre slightly flattened longitudinally, flattening more distinct only in posterior third. Anterior corners gently rounded. Posterior corners obtuse. Punctures on pronotum rough, almost rounded, large and nearly confluent in the middle of the pronotum, smaller laterally; posterior third of lateral margins almost without punctures. Setae of punctures white, anteriorly directed, shorter than diameter of punctures. – Elytra: 2.8 times as long, 1.5 times as wide as pronotum, widest in the middle; ratio elytral length/width 170:83. Humeral corners slightly prominent (Fig. 48). Elytral intervals very slightly wrinkled; 3rd, 5th, 7th and 9th intervals keeled (7th and 9th intervals roof-shaped); the other intervals slightly convex or flat. Keel of 5th interval fading on elytral declivity, the other keels fading at their points of fusion. Each elytron with 10 rows of punctures slightly larger than on pronotum; punctures decreasing on elytral declivity, fading posteriorly; first row with about 29 punctures. Epipleura with one row of punctures decreasing posteriorly, very fine near last three sternites. – Abdomen: Punctulation on sternites decreasing towards anal sternite. Punctures on first sternite as large as on elytra, larger than on epipleura; surface between punctures very gently wrinkled. Setae of punctures very fine, as long as diameter of punctures. - Legs: Middle and posterior tibiae of male with distinct apical tooth on inner side. - Wingless. -Aedeagus (Fig. 50): Length approximately 0.75 mm, with a pair of very small apical setae.

Diagnosis: *P. schawalleri* n. sp. is very similar to *P. costatus*, but it shows a different shape of pronotum and genae and has slightly convex non-keeled elytral intervals.

Pseudethas (Pseudethas) thailandicus **n. sp.** (Figs. 6, 27–29)

Holotype (3): Thailand, Phetcha Buri Province, 2km N of Ban Sa Yai Non, 12°56′58″N 99°47′44″E, alt. 40 m, 16.–18.I.2006, leg. S. Bečvář & R. Fouque, CFR.

P a r a t y p e s : Same data as holotype, $2 \, \stackrel{>}{\circlearrowleft} \stackrel{>}{\circlearrowleft} , 1 \, \stackrel{>}{\hookrightarrow} \, \text{CFR}, 1 \, \stackrel{>}{\circlearrowleft} , 1 \, \stackrel{>}{\hookrightarrow} \, \text{HNHM}, 1 \, \stackrel{>}{\circlearrowleft} \, \text{SMNS}, 1 \, \stackrel{>}{\circlearrowleft} \, \text{CBS}.$

Etymology: Named after Thailand where the type series was collected.

Description: Body length 2.95–3.40 mm, body width 0.78–0.90 mm. – Body and antennae brown, sometimes rust brown, legs brighter, palps russet. – Head (Fig. 27): Ratio length/width 42:43, widest at front margin of eyes. Eyes divided by cheeks, inner side with distinct ocular keel, dorsal side of eye with about 17 facets in three rows, ventral side with about 7 facets. Tempora con-

vex and widest in their anterior third, then narrowing to the cervical constriction. Genae slightly extending from posterior margin of eyes to its widest point at front margin of eyes. Clypeus ogival. From with two distinct impressions. Vertex somewhat arched. Punctures of head rounded, with short light-yellow anteriorly directed setae, rough on vertex, fading towards clypeus; surface between punctures smaller than diameter of the punctures. Antennae (Fig. 28) distally with short light-yellow hairs; combined 2nd-11th segments twice as long as posterior width of pronotum; ratio of lengths of 2nd-11th segments: 6:8.1:6.5:6: 6:6:6.5:6.8:7.3:6.8, ratio of widths: 6.5:6:6:6:6:5: 6.5:6.8:7:7.6:7; last segment cut latero-apically. – Pronotum (Fig. 27) as wide as head, much longer than wide (50:43), widest at anterior quarter; ratio widths at posterior edges/at widest point/at anterior edges 35:43:37. Anterior corners slightly prominent, rounded. Posterior corners rectangular. Lateral margin of pronotum concave before posterior edges. Pronotum with a longitudinal medial impression which is less distinct near anterior and posterior margins of pronotum. Pronotal base slightly convex. Punctures on pronotum larger than on head, almost rounded, dense but not confluent, somewhat smaller and denser on anterior margin; setae as long as on head but less regular. Lateral margin of pronotum approximately as wide as diameter of punctures, without punctulation. – Elytra: 2.6 times as long, 1.4 times as wide as pronotum; ratio elytral length/width 129:60; ratio basal width of elytra/basal width of pronotum 40:35. Humeral corners slightly prominent (Fig. 27). Lateral margins straight from first quarter to their maximal width at the end of second third, 3rd, 5th, 7th and 9th elytral intervals keeled, 7th and 9th roof-shaped, 3rd less convex on disk, the other intervals very slightly convex or flattened. Keels of 3rd and 7th intervals joined on elytral declivity, keel of 9th interval fading at the tip and not combined with other keels. Each elytron with 10 rows of punctures, near base as large as on pronotum, gradually decreasing posteriorly; punctures rounded at elytral base, slightly elongated on disk and elytral declivity; first row with approximately 36 punctures. Elytral intervals very gently wrinkled. Elytral keels with a row of bright, very fine recumbent setae. Epipleura with one row of somewhat elongated punctures which are smaller on epipleural base than on elytral base, gradually decreasing posteriorly, fading towards anal sternite. – Abdomen: First sternite rarely with punctures of same size as on elytral base. Punctulation of sternites gradually decreasing from first sternite to anal sternite, denser posteriorly. Light-yellow setae on ventral side of abdomen gentle, increasing in length from anal sternite towards metasternum. - Legs: Femora without teeths, claviform distally; male middle and posterior tibiae with small tooth. – Wingless. – Aedeagus (Fig. 29): Length approximately 0.46 mm; a very gentle seta on each side apically.

Diagnosis: *P. thailandicus* n.sp. has a complete longitudinal pronotal impression like *P. antennalis*, *P. ladakhensis*, *P. nepalicus*, *P. quadraticeps*, and *P. rogersi*. It is, however, narrower and smaller than those five species.

R e m a r k s: This species was collected under stones, under a piece of wood and under a fallen abandoned antnest of the genus *Crematogaster*. Additional Tenebrionidae of the same tribe Stenonsini, namely *Stenosis herberti* Kulzer, 1960, *Gebieniella stenosides* (Pascoe, 1862) and *Dichillus kuschstaberi* Kaszab, 1981 have been collected at the same locality (see Fig. 60).

Pseudethas (Stenillus) weigeli **n. sp.** (Figs. 3, 19–21)

Holotype (&): Nepal, Prov. Bheri, Distr. Surkhet, 20km N Surkhet, 2000 m, 1.VI.1995, leg. A. Weigel, SMNS.

Paratype: W Nepal, Distr. Jumla, Rimi to Chaurikot, $2800-3000\,\text{m}$, 5.VI.1997, leg. A. Weigel, $1\ \cite{Omega}$ NKME.

Etymology: Named after Andreas Weigel (Wernburg, Germany), specialist for Cerambycidae and collector of the type series.

Description: Body length 3.8-4.3 mm, body width 1.15–1.35 mm. – Body dark-brown; legs, antennae and palps slightly brighter. – Head (Fig. 19): Ratio length/ width 43:48, widest at front margin of eyes. Eyes completely divided by cheeks, dorsal side of eye with about 17 facets in three rows, ventral side with about 11 facets. Tempora very slightly narrowing over a distance of about half eye length, then gradually narrowing towards cervical constriction. Genae almost parallel over a distance of slightly less than two eye lengths. Clypeus almost straight. Two impressions on frons. Punctulation on vertex rough, somewhat elongated, punctures on clypeus smaller and rounded; surface between punctures slightly wrinkled. Setae fine, approximately of same length as diameter of punctures. Antennae (Fig. 20) lightly haired, setae as long as half length of middle segments; combined 2nd-11th segments 1.5 times as long as width of head; ratio of lengths of 2nd-11th segments: 6:8.4:6:5.6:4.6:5:5.3:5.5:6.6:7.6, ratio of widths: 5:5.3:5.3:5.5:5.5:6:6.3:7:7.5:7. – Pronotum (Fig. 19) considerably wider than head (60:48), widest at anterior quarter; ratio length/width 60:60; ratio widths at posterior edges/at widest point/at anterior edges 45:60:51. Anterior corners slightly overlapping, rounded. Posterior corners obtuse. Lateral margin of pronotum slightly concave near posterior corners. Pronotal disk slightly flattened. Punctures on disk elongated, larger than on head; rounded and denser around disk; surface between punctures slightly wrinkled. Pronotum haired with fine yellow setae which are slightly longer than diameter of punctures. – Elytra: 2.7 times as long, 1.4 times as wide as pronotum, widest in the middle; ratio elytral length/width 160:83; ratio basal width of elytra/basal width of prono-



Fig. 60. Type locality of *Pseudethas thailandicus* n. sp. (Thailand, Phetcha Buri Province, 2km N of Ban Sa Yai Non, 12°56'58"N 99°47'44"E, alt. 40 m, I.2006), where also *Stenosis herberti*, *Gebieniella stenosides* and *Dichillus kuschstaberi* have been collected.

tum 49:45. Base of elytra distinctly concave. Humeral corners rounded (Fig. 19). All elytral intervals slightly convex, 7th and 9th intervals somewhat more convex, 8th interval less convex. Each elytral interval with one row of very fine punctures with fine bright setae twice as long as diameter of larger punctures. Each elytron with 10 rows of oval punctures, as long as on vertex of head; first row with about 27 punctures. Epipleura with one row of elongated punctures as large as on dorsal part of elytra, punctures fading towards anal sternite. - Abdomen: Punctures of sternites decreasing from first sternite, where there are rough, rounded and somewhat larger than on epipleura, towards anal sternite, where there are smallest and densest. Sternites lightly haired, setae slightly longer than diameter of punctures. – Legs: Male middle and posterior tibiae on inner side with distinct tooth. - Wingless. - Aedeagus (Fig. 21): Length approximately 0.8 mm, with a pair of fine apical setae.

Diagnosis: *P. weigeli* n.sp. belongs to the subgenus *Stenillus* because of the shape of the tempora and the moderately convex elytral intervals. It differs from the only other species of this subgenus, *P. (S.) monticola*, mainly by the shape of the pronotum.

5 Key to the species of Pseudethas

- 1 Tempora widest at posterior margin of eye, gradually narrowing towards cervix. Pronotum at most with a slight flattening in its posterior third. 1st-6th elytral intervals only slightly convex, 7th-9th intervals convex. subgenus *Stenillus* 2
- Tempora usually convex or at least parallel, constricted towards cervix, often overlapping lateral margins of eyes.

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2	Pronotum medially with a longitudinal impression, sometimes only very slightly developed in its posterior third. 3 rd , 5 th , 7 th and 9 th elytral intervals (sometimes only lateral intervals) often strongly convex subgenus <i>Pseudethas</i> 3 Pronotum almost quadrate, slightly convex, flattened on
	lateral margins. Pronotal punctulation gentle, elongated. Elytral intervals with several irregular rows of very gentle punctures. Aedeagus unknown. Body length 4.1 mm. (Figs. 2, 17–18)
_	Pronotum heart-shaped, strongly convex, only slightly flattened on lateral margins. Punctulation on pronotum larger and rounder. Elytral intervals with only one row of very fine punctures. Aedeagus see Fig. 21. Body length 3.8–4.3 mm. (Figs. 3, 19–21) weigeli n. sp.
3	Pronotum with a complete longitudinal medial impression.
_	Pronotal impression very faint or restricted to the posterior
4	third of the pronotum
-	3 rd elytral interval convex only at base, then flattened. First
5	elytral row with about 36–43 punctures
	Elytra widest behind middle. 4th and 6th elytral intervals flat.
	2 nd elytral interval very gently wrinkled, with a row of very fine punctures without setae. Elytral punctures fine, dis-
	tance between punctures of a row almost as long as a puncture. Aedeagus unknown. Body length 3.7–4.0 mm.
	(Figs. 4, 22–23)
-	Keel of 7 th elytral interval curved in dorsal view. Elytra widest at middle. 4 th and 6 th elytral intervals gently convex. 2 nd
	interval not wrinkled, with a row of very fine punctures with
	long fine setae. Elytral punctures very rough, deeply impressed, distance between punctures of a row about half as
	long as a puncture. Aedeagus see Fig. 26. Body length
6	3.4–3.9 mm. (Figs. 5, 24–26) nepalicus Body small and narrow. Body length 2.95–3.40 mm, body
	width 0.78–0.90 mm. Ratio pronotum length/width approximately 1.15:1. – First elytral row with about 36 punctures.
	Aedeagus see Fig. 29. (Figs. 6, 27–29) thailandicus n. sp.
_	Body length 3.3–4.8 mm, body width 1.05–1.40 mm. Ratio pronotum length/width close to 1:1
7	Elytral margins parallel over most of their length. 3 rd –8 th and 11 th antennal segments almost of same width. – First elytral
	row with about 43 punctures. Aedeagus see Fig. 32. Body
_	length 3.8–4.8 mm. (Figs. 7, 30–32)
	tance. 3^{rd} — 8^{th} antennal segments slightly extending towards apex, 11^{th} antennal segment wider than 8^{th} one
8	Tempora suddenly constricted towards cervix. Genae ex-
	tended, widest before eyes. Humeral corners overlapping elytral base. Pronotal base at level of 6 th elytral interval. First
	elytral row with about 43 punctures. Aedeagus see Fig. 35.
_	Body length 3.3–3.9 mm. (Figs. 8, 33–35) rogersi Tempora gradually narrowing towards cervix. Genae not
	extended, widest at level of eyes. Humeral corners not over-
	lapping elytral base. Pronotal base at level of 6 th row of punctures. First elytral row with about 36 punctures. Aedea-
	gus see Fig. 38. Body length 3.6–4.1 mm. (Figs. 9, 36–38)
9	3 rd , 5 th , 7 th and 9 th elytral intervals keel-like, different from
	the other intervals; the 3 rd interval can be flattened and is more or less keel-like only at base

All elytral intervals convex or flat in the same way. Only

Tempora almost parallel. Distance between elytral punc-

- 11 Keels of 5th, 7th and 9th elytral intervals with erect curved setae. Head and pronotum very roughly wrinkled between punctures. Pronotum widest at first quarter. Elytral humeral corners prominent. Tibiae elongate, posterior tibia as long as maximum width of pronotum. Aedeagus see Fig. 41. Body length 4.0 mm. (Figs. 10, 39–41). longigenus n.sp.
- Keels of 5th, 7th and 9th intervals with recumbent hairs. Head and pronotum gently wrinkled between punctures. Pronotum widest at first third. Elytral humeral corners rounded. Tibiae short, posterior tibia as long as width of pronotum at posterior corners. Aedeagus see Fig. 44. Body length 3.4–3.7 mm. (Figs. 11, 42–44). afghanicus

- Body brown to russet, haired. Elytra with rows of rougher punctures. Medial elytral intervals slightly convex, lateral ones more convex.
 14
- 14 Genae rounded. Tempora convex, as long as the eye. Head and pronotum wrinkled between punctures. Pronotum strongly convex. Aedeagus see Fig. 56. Body length 3.0–4.0 mm. (Figs. 15, 54–56). incostatus

6 References

- BLAIR, K. G. (1927): Heteromera of the third Mt. Everest expedition, 1924. Annals and Magazine of Natural History 19 (9): 241–255.
- Fairmaire, L. (1896): Hétéromères de l'Indie recueillis par M. Andrewes. Annales de le Société entomologique de Belgique 40: 6–62.
- Kaszab, Z. (1960): Die Tenebrioniden Afghanistans auf Grund der Ergebnisse der Sammelreise des Herrn J. Klapperich in den Jahren 1952/53 (Col.). – Entomologische Arbeiten aus dem Museum G. Frey 11: 1–179.
- Kaszab, Z. (1970): Beiträge zur Kenntnis der Fauna Afghanistans. Acta Musei Moraviae **54**: 5–182.
- Kaszab, Z. (1973): Tenebrioniden (Coleoptera) aus Nepal. Acta zoologica Academiae scientarum hungaricae **19** (1–2): 23–74.
- KASZAB, Z. (1981): Neue orientalische Stenosini (Coleoptera: Tenebrionidae). – Acta zoologica Academiae scientarum hungaricae 27 (3–4): 273–313.
- Kaszab, Z., Schawaller, W. & Skopin, N. G. (1978): Systematik und Ökologie einiger Tenebrionidae aus Kashmir und Ladakh (Insecta: Coleoptera). Senckenbergiana biologica **59** (3–4): 215–234.
- Meducedev, G. S. (1994): New data on systematics of darkling beetles of the tribe Stenosini (Coleoptera, Tenebrionidae). Entomologicheskoe Obozrenie 73 (4): 844–867 [in Russian; English translation in Entomological Review 75 (2): 101–124].
- REN, G. & SHI, A. (2006): Two newly recorded genera of Stenosini (Coleoptera, Tenebrionidae) from China, with descriptions of two new species. Acta zootaxonomica sinica 31 (1): 180–184.
- Schawaller, W. (2001): *Pseudethas jaegeri* sp. n. from Tibet (Insecta: Coleoptera: Tenebrionidae: Stenosini). Reichenbachia **34**: 143–146.
- WASMANN, E. (1899): Neue Termitophilen und Myrmecophilen aus Indien. – Deutsche entomologische Zeitschrift 1899: 145–169.
- Wasmann, E. (1902): Ueber die Gattung Schizillus Wasm. Deutsche entomologische Zeitschrift 1902: 244.

Author's address:

René Fouque, Krajní 1580/12, 46311 Liberec 30, Vratislavice nad Nisou, Czech Republic; e-mail: rene.fouque@seznam.cz

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