

New species of the genus Laena Dejean (Coleoptera: Tenebrionidae) from southeastern Asia (3) 1

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New species of the genus *Laena* Dejean (Coleoptera: Tenebrionidae) from southeastern Asia (3)¹

WOLFGANG SCHAWALLER

Abstract

New species of the genus Laena Dejean, 1821 (Tenebrionidae: Lagriinae) are described from central India (L. centroindica n. sp.), from northeastern India in Arunachal Pradesh and Assam (L. bomdilaica n. sp., L. etalinica n. sp., L. gyatsoi n. sp., L. monpa n. sp.), from Myanmar (L. mandalayica n. sp., L. schillhammeri n. sp.), and from the Malay Peninsula (L. larutica n. sp.). L. bicolor Schuster, 1926 is rediscovered in Myanmar since the original description, and Laena kurbatovi Schawaller, 2006, described from Myanmar, is newly recorded from the adjacent Assam.

Keywords: Coleoptera, Tenebrionidae, Lagriinae, Laena, new species

Zusammenfassung

Neue Arten der Gattung Laena Dejean, 1821 (Tenebrionidae: Lagriinae) werden aus Zentralindien (L. centroindica n. sp.), aus dem nordöstlichen Indien in Arunachal Pradesh und Assam (L. bomdilaica n. sp., L. etalinica **n. sp.**, L. gyatsoi **n. sp.**, L. monpa **n. sp.**), aus Myanmar (L. mandalayica **n. sp.**, L. schillhammeri **n. sp.**), und von der Malayischen Halbinsel (L. larutica n. sp.) beschrieben. L. bicolor Schuster, 1926 ist erstmalig seit der Originalbeschreibung wiedergefunden worden, und Laena kurbatovi Schawaller, 2006, beschrieben aus Myanmar, wird erstmalig aus dem angrenzenden Assam gemeldet.

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1 Introduction

The wingless species of genus Laena Dejean, 1821 (Tenebrionidae: Lagriinae) are typical elements of the soil fauna of mountainous forests from southeastern Europe throughout continental Asia with usually restricted distributional patterns. The bulk of the species inhabit the Himalayan and Chinese mountain ranges. The adjacent parts of south and southeastern Asia (India, Thailand, Myanmar, Malay Peninsula, Laos and Vietnam, so far unknown from Cambodia) also harbour several species in isolated (and thus endangered) montane and lowland forests, none of them being conspecific with the Himalayan and Chinese species.

The species of southeastern Asia were summarised by Schawaller (2006, 2009, 2012, 2014). These papers contain also full references of the previous publications, check lists and identification keys to species of certain countries, figures, and discussions about species characters and problems in defining natural species groups within this speciose genus. In the meantime, several additional species were newly collected in central and northeastern India, Myanmar, and in the Malay Peninsula, mostly by

sifting or with Winkler-extractors. These are described in the present contribution. Acronyms of depositories

ZFMK Zoologisches Museum A. Koenig, Bonn, Ger-MHNG Muséum d'Histoire Naturelle, Geneva, Switzerland NHMB Naturhistorisches Museum, Basel, Switzerland NHMW Naturhistorisches Museum, Wien, Austria NMP National Museum of Natural History, Prague, Czech Republic **SMNS** Staatliches Museum für Naturkunde, Stuttgart, Germany

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Contributions to Tenebrionidae, no. 150. – For. no. 149 see: Integrative Systematics 1, 2018.



Figs. 1–5. Dorsal view of *Laena* species from southeastern Asia. – 1. *L. bomdilaica* n. sp., holotype NMP. 2. *L. fikaceki*, paratype SMNS. 3. *L. monpa* n. sp., holotype NMP. 4. *L. mandalayica* n. sp., holotype NHMW. 5. *L. schillhammeri* n. sp., holotype NHMW. – Scale: 2 mm.

DIRK AHRENS (Bonn), MICHEL BRANCUCCI (†) (Basel), GIULIO CUCCODORO (Geneva), JIRI HÁJEK (Prague), and HARALD SCHILLHAMMER (Vienna). The photographs were taken by JOHANNES REIBNITZ (Stuttgart) with a Leica DFC320 digital camera on a Leica MZ16 APO microscope and subsequently processed by him with Auto-Montage (Syncroscopy) software. The referees ROLAND GRIMM (Neuenbürg) ad OTTÓ MERKL (Budapest) improved the manuscript by their remarks and corrections.

2 Species from central and north-eastern India

An identification key for all 28 species known so far from the eastern Himalayas (Darjeeling, Sikkim, Bhutan, Assam, Arunachal Pradesh) was compiled by Schawaller (2012). From central India, isolated from the numerous species in northern India and Nepal, the genus was unknown until now.

Laena bomdilaica **n. sp.** (Figs. 1, 16)

Holotype (♂): India, Arunachal Pradesh, 1.5 km NE Bomdila, Bomdila Pass, 2600 m, 2.–5.V.2008, leg. М. Fikáček, Н. Родskalská & P. Šipek, NMP.

Description: Body length 3.8 mm. Eyes not prominent. Pronotum with large, coarse confluent punctures, distance less than 1x puncture diameter, most punctures with short adpressed setae; surface convex and feebly shining, often dull by soil incrustation, disc uneven by confluent punctures; lateral margins completely unbordered; posterior corners rounded; propleura with similar but sparser punctation, and with shorter setation as on pronotum. Elytra ovate with rows of punctures, without striae, punctures of rows of similar size as punctures on pronotum, punctures with short adpressed setae; all intervals with fine punctures and similar adpressed setae, interval 9 in posterior part with 1 distinct setiferous pore; intervals 3, 5, and 7 distinctly convex, nearly keel-like with irregular tubercles, intervals 3 and 5 confluent in posterior part and joining to an prominent keel; intervals 1, 2, 4, and 6 nearly flat; surface feebly shining. Apex of elytra not prolonged. All femora without teeth or granules. Male tibiae without pecularities. Aedeagus see Fig. 16.

Diagnosis: Laena bomdilaica n. sp. shares with L. cuccodoroi Schawaller, 2012 from Assam (Fig. 7) and L. fikaceki Schawaller, 2012 from Arunachal Pradesh (Fig. 2) the small body size, the unarmed femora, the unbordered lateral margins of the pronotum, and the general dorsal structure of the elytra with partly keel-like intervals and/or tubercles. However, in L. bomdilaica n. sp. the pronotum is widest nearly in the middle (widest in anterior third in L. cuccodoroi and L. fikaceki), the elytra are much broader, and the structure of the elytral intervals is different with partly keel-like intervals (only a few tubercles in L. cuccodoroi, and convex intervals with tubercles in L. fikaceki).

In *L. fikaceki* the aedeagus is quite different with a broad apicale and blunt tip, whereas the aedeagi of *L. bomdilaica* n. sp. and *L. cuccodoroi* are similar with triangular apicale and rounded tip (compare figures in Schawaller 2012). *L. interrupta* Schuster, 1935 (Fig. 12) from Darjeeling belongs also in the same group of species.

Etymology: Named after the Bomdila Pass, where the holotype was collected.

Laena centroindica **n. sp.** (Figs. 13, 17)

Holotype (♂): India, Maharashtra, 30 km E Phonda, Dhajipur Forest, 800 m, 2.XI.2000, leg. G. Cuccodoro, MHNG.

Description: Body length 2.5 mm. Eyes flat, not prominent. Pronotum with large, but not confluent punctures, distance 1–3x puncture diameters, punctures without setae; surface convex and shining, disc without impressions; lateral margins completely bordered; posterior corners rounded; propleura with similar punctation as on pronotum, and also without setation. Elytra ovate with rows of punctures, without striae, punctures of rows slightly larger than punctures on pronotum, punctures without setae; intervals without punctures and setation, interval 9 with 4 distinct setiferous pores, all intervals feebly convex, nearly flat; surface shining. Apex of elytra not prolonged. All femora without teeth or tubercles. Male tibiae without pecularities. Aedeagus see Fig. 17.

Diagnosis: Laena centroindica n. sp. can be recognised by the combination of the following characters: Body size very small (2.5 mm), pronotum with bordered lateral margins, punctures of the elytral rows without setae, all femora without teeth or tubercles, and shape of the aedeagal apicale. No similar species is known from the bulk of species in northern India and Nepal that are separate from central India. A similar tiny species occurs in Thailand (L. ellenae Schawaller, 2014), with marked but unbordered lateral margins of pronotum, with long adpressed setae of elytra, and with different aedeagus. Because of the distributional patterns it seems unlikely that both have a closer relation.

Etymology: It is the first species of Laena from central India.

Laena etalinica **n. sp.** (Figs. 10, 20)

Holotype (♂): India, Arunachal Pradesh, Etalin, 700 m, 12.–25.V.2012, leg. L. Dembický, ZFMK.

Paratypes: Same data as holotype, 8 ex. ZFMK, 3 ex. SMNS. – India, Arunachal Pradesh, Hunli, 1200–1400 m, 26.V.–1.VI. 2012, leg. L. DEMBICKÝ, 6 ex. ZFMK, 2 ex. SMNS.

Description: Body length 3.5–6.0 mm. Eyes not prominent. Pronotum with large, not confluent punctures,



Figs. 6–13. Dorsal view of *Laena* species from southeastern Asia. – 6. *L. bicolor*, non-type Myanmar SMNS. 7. *L. cuccodoroi*, paratype SMNS. 8. *L. kurbatovi*, non-type Assam SMNS. 9. *L. larutica* n. sp., holotype MHNG. 10. *L. etalinica* n. sp., holotype ZFMK. 11. *L. gyatsoi* n. sp., holotype NMP. 12. *L. interrupta*, non-type Darjeeling SMNS. 13. *L. centroindica* n. sp., holotype MHNG. – Scale: 2 mm.

distance 1–3x puncture diameters, most punctures with long erect setae; surface convex and shining, disc without impressions; lateral margins unbordered; posterior corners rounded; propleura with similar punctation as on pronotum, with a few adpressed microsetae. Elytra ovate with rows of punctures, without striae, punctures of rows of similar size as punctures on pronotum, punctures with long erect setae; intervals with row of sparse small punctures, punctures with long erect setae, interval 9 with 4 distinct setiferous pores, all intervals feebly convex; surface shining. Apex of elytra not prolonged. All femora without teeth or angulations. Posterior tibiae of male somewhat swollen at inner side. Aedeagus see Fig. 20.

Diagnosis: In Schawaller's (2012) key to the species of the eastern Himalayas *Laena etalinica* n. sp. would run to *L. laevipennis* Schuster, 1926 from Sikkim and Darjeeling. Both share the general body size and shape, the unarmed femora, the elytra with punctural rows without striae, and mainly the high convex pronotum with completely unbordered lateral margins. However, in *L. laevipennis* the pronotum is finely and sparsely punctate, the punctures of the elytral rows bear short adpressed setae, and the elytral intervals are completely flat. Unfortunately, the aedeagus of *L. laevipennis* is unknown. Etymology: Named after the village Etalin, in whose vicinity the holotype was collected.

Laena gyatsoi **n. sp.** (Figs. 11, 19)

Holotype (♂): India, Arunachal Pradesh, 0.7 km W Tawang, 1–1.7 km N monastery, 2950 m, 27.–30.IV.2008, leg. M. Fikáček, H. Podskalská & P. Šipek, NMP.

Description: Body length 5.0 mm. Eyes not prominent. Pronotum with large, not confluent punctures, distance 1–2x puncture diameters, most punctures with short adpressed setae; surface convex and shagreened, disc medially with pair of very weak impressions; lateral margins somewhat marked but unbordered; posterior corners rounded; propleura with larger and sparser punctures as on pronotum, without setation. Elytra ovate with rows of punctures, without striae, punctures of rows of similar size as punctures on pronotum, punctures with few adpressed microsetae; intervals with row of sparse small punctures, punctures with adpressed microsetae, interval 9 with 3 distinct setiferous pores, all intervals flat; surface shagreened. Apex of elytra not prolonged. All femora with pair of angulations, on anterior femora more prominent than on middle and posterior femora. Male tibiae without pecularities. Aedeagus see Fig. 19.

Diagnosis: *Laena gyatsoi* n. sp. is similar to *L. holz-schuhi* Schawaller, 2012 from Bhutan, and *L. vishnua* Masumoto, 1990 from Darjeeling. They share the general body size and dorsal punctation, short or lacking dor-

sal setation, and the femora with more or less developed angulations. However, in *L. gyatsoi* n.sp. the lateral margins of the pronotum are at mostly marked but unbordered, and the pronotal punctures are large and dense (distinctly bordered and punctures sparser and finer in *L. holzschuhi* and *L. vishnua*). The aedeagi are also quite different with a narrow finger-like apicale in *L. holzschuhi*, or broader finger-like apicale in *L. vishnua* (compare with figures in SCHAWALLER 2012).

Etymology: Named in honour of Lama Lodre Gyatso, who founded in 1680–1681 the Tawang Monastery, in whose vicinity the holotype was collected.

Laenak urbatovi Schawaller, 2006 (Figs. 8, 22)

Specimens examined: India, Assam, Kaziranga, 75 m, 7.–9.V.1976, leg. C. Baroni-Urbani & W. Wittmer, 1 $\stackrel{?}{\circ}$ 1 $\stackrel{?}{\circ}$ NHMB, 1 $\stackrel{?}{\circ}$ SMNS.

Remarks: Body length 3.8–5.2 mm. These specimens from Assam show no external characters different from the single female holotype (thus aedeagus unknown so far), described from the Chin State in Myanmar which lies somewhat south of the Indian Assam. *L. kurbatovi* shares with *L. kenyirica* Schawaller, 2006 and *L. larutica* n. sp. (both from Malaysia) the presence of tooth-like setiferous pores around elytral shoulders.

Laena monpa **n. sp.** (Figs. 3, 21)

Holotype (♂): India, Arunachal Pradesh, 1.5 km NE Bomdila, Bomdila Pass, 2600 m, 2.–5.V.2008, leg. M. Fikáček, H. Podskalská & P. Šipek, NMP.

Paratype: Same data as holotype, $1 \supseteq SMNS$.

Description: Body length 3.5-3.7 mm. Eyes not prominent. Pronotum with fine, scattered punctures, distance 1-4x puncture diameters, most punctures with long erect setae; surface convex and shining, feebly shagreened, disc without impressions; lateral margins not completely bordered, border diminishing near anterior corners; posterior corners rounded; propleura with larger and sparser punctures as on pronotum, without setation. Elytra ovate with rows of punctures, without striae, punctures of rows of similar size as punctures on pronotum, punctures on disc without setae, laterally and distally with a few punctures with longer erect setae; intervals with a row of sparse fine punctures, without setae, interval 9 with 3 indistinct setiferous pores, all intervals flat; surface shining. Apex of elytra not prolonged. All femora without teeth or granules. Tibiae of both sexes without pecularities. Aedeagus see Fig. 21.

Diagnosis: In Schawaller's (2012) key to the species of the eastern Himalayas *Laena monpa* n. sp. would run to the group of species *L. espagnoli* Kaszab, 1965,

L. aenea Schuster, 1926 and L. affinis Schuster, 1935, all from Sikkim and Darjeeling. These species share the unarmed femora, the bordered lateral margins of the pronotum, and the short dorsal setation. However, L. monpa n. sp. can be recognised by the round and high convex pronotum with shining surface, by not prominent eyes, and by the shape of the aedeagus. In L. aenea and L. affinis, the dorsal surface is distinctly shagreened, the eyes are prominent, and the aedeagi are different; in L. espagnoli the surface is shining and the eyes are not prominent as in L. monpa n. sp., however the pronotum is less convex and the aedeagus is completely different.

Etymology: Named after the Monpa, the major ethnic tribe of native people in Arunachal Pradesh.

3 Species from Myanmar (Burma)

An identification key and distribution map for all five species known so far from Myanmar (Burma) was published by Schawaller (2009).

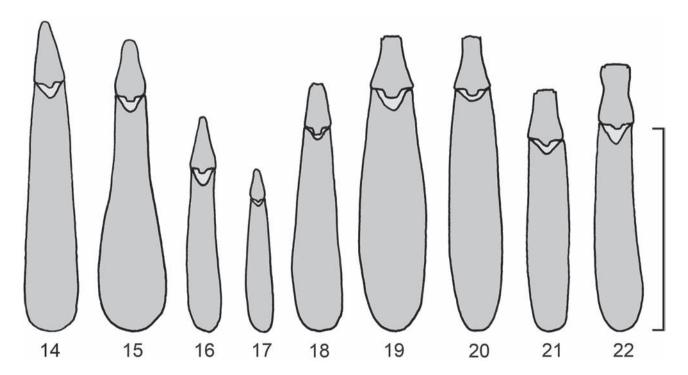
Laena bicolor Schuster, 1926 (Fig. 6)

Specimens examined: Myanmar, Mandalay Region, Mogok, S Panlin, Mt. Taung Mae, west slope, 1870 m, 17.—24.V.2016, leg. H. Schillhammer, A. Brunke, J. Jenkins-Shaw & A. R. Jensen, $1 \subsetneq \text{NHMW}$, $1 \subsetneq \text{SMNS}$.

Remarks: This species was known so far only by the single holotype of unknown sex. The type locality "Birma: Rubi Mines" was not exactly localised, but lies probably in the Mandalay Region (Schawaller 2006). Unfortunately, both new specimens are females, thus the aedeagus can not be figured here.

Laena mandalayica **n. sp.** (Figs. 4, 14)

Holotype (3): Myanmar, Mandalay Region, Mogok, S Panlin, Mt. Taung Mae, west slope, 1870 m, 17.—24.V.2016, leg. H. Schillhammer, A. Brunke, J. Jenkins-Shaw & A. R. Jensen, NHMW.



Figs. 14–22. Aedeagus of *Laena* species from southeastern Asia. – 14. *L. mandalayica* n. sp., holotype NHMW. 15. *L. schillhammeri* n. sp., holotype NHMW. 16. *L. bomdilaica* n. sp., holotype NMP. 17. *L. centroindica* n. sp., holotype MHNG. 18. *L. larutica* n. sp., holotype MHNG. 19. *L. gyatsoi* n. sp., holotype NMP. 20. *L. etalinica* n. sp., holotype ZFMK. 21. *L. monpa* n. sp., holotype NMP. 22. *L. kurbatovi*, non-type Assam SMNS. – Scale: 1 mm.

Paratypes: Same data as holotype, 3 ex. NHMW, 1 ex. SMNS.

Description: Body length 7.0-8.0 mm. Eyes not prominent. Pronotum with large, somewhat irregular, not confluent punctures, distance 1-2x puncture diameters, some punctures with short adpressed microsetae; surface convex and feebly shagreened, disc medially with a pair of weak impressions; lateral margins completely bordered; posterior corners rounded; propleura with larger and sparser punctures as on pronotum, without setation. Elytra ovate with rows of punctures, without striae, punctures of rows of similar size as punctures on pronotum, punctures without setae; intervals without punctures and setation, interval 9 with 3 distinct setiferous pores, all intervals regularly convex; surface feebly shagreened. Apex of elytra not prolonged. All femora without teeth or granules. Tibiae of both sexes without pecularities. Aedeagus see Fig. 14.

Diagnosis: Laena mandalayica n. sp. is characterised by the following characters: Large body size, shining surface without distinct setation, convex pronotum with bordered lateral margins, convex elytral intervals, and unarmed femora. This character combination is not present in any other species of the area including adjacent Arunachal Pradesh and Yunnan. L. kachinorum Schawaller, 2009 from northern Myanmar is also large (9.2–9.6 mm), but the pronotum is less convex and the surface is shagreened, the elytral intervals are flat and distinctly shagreened, the male tibiae medially bear a row of distinct spines, and the aedeagus is different having a short and broad apicale with blunt tip.

Etymology: Named after Mandalay, where the type series was collected.

Laena schillhammeri **n. sp.** (Figs. 5, 15)

Holotype (3): Myanmar, Mandalay Region, Mogok, S Panlin, Mt. Taung Mae, west slope, 1870 m, 17.—24.V.2016, leg. H. Schillhammer, A. Brunke, J. Jenkins-Shaw & A. R. Jensen, NHMW

Paratypes: Same data as holotype, 10 ex. NHMW, 2 ex. SMNS. – Myanmar, Mandalay Region, Mogok, S Panlin, Mt. Taung Mae, west slope, 1710–1750 m, 10.–18.VI.2014, leg. A. Brunke & H. Schillhammer, 17 ex. NHMW, 3 ex. SMNS.

Description: Body length 4.8–7.0 mm. Eyes slightly prominent. Pronotum with large, but not confluent punctures, distance 1–4x puncture diameters, most punctures with longer erect setae; surface convex and feebly shagreened, disc without impressions; lateral margins completely bordered; posterior corners rounded; propleura with similar but sparser punctures as on pronotum, but without setation. Elytra ovate with rows of punctures in feeble striae, punctures of rows of similar size as punctures on pronotum, most punctures with longer and erect

setae; intervals with a few fine punctures, each bearing an erect seta of equal length, interval 9 with 3 indistinct setiferous pores, all intervals feebly convex, nearly flat; surface feebly shagreened. Apex of elytra not prolonged. All femora without teeth or tubercles. Tibiae of both sexes without pecularities. Aedeagus see Fig. 15.

Diagnosis: Laena schillhammeri n. sp. is similar to Laena kurbatovi Schawaller, 2006, also from the Chin State in central Myanmar (see above). Both share the general body shape, the long dorsal setation, the bordered lateral margins of the pronotum, and the unarmed femora. However, in L. kurbatovi, the pronotum is widest in the middle (widest in anterior part in schillhammeri n. sp.), the elytral intervals are distinctly convex (nearly flat in schillhammeri n.sp.), and the elytral shoulders are dentate by a higher number of setiferous pores (rounded with few pores in schillhammeri n.sp.). Probably, L. kurbatovi is also smaller (3.7 mm in the single \mathcal{Q} holotype) than L. schillhammeri n. sp. (4.8–7.0 mm in the type series). The aedeagi are also different with a broad spade-like apicale in L. schillhammeri n.sp., and with a short and broad apicale in L. kurbatovi (Fig. 22, non-type of from Assam, the holotype from Myanmar is a \mathfrak{D}).

 $Etymology: Named in honor of Dr. \ Harald \ Schillhammer \\ (Wien), one of the collectors of the type series.$

4 Species from the Malay Peninsula (West Malaysia)

The last identification key for all 18 species known so far from the Malay Peninsula was compiled by Schawaller (2014).

Laenal arutica **n. sp.** (Figs. 9, 18)

Holotype (3): West Malaysia, Perak, Maxwell Hill, 950 m, 22.XI.1999, leg. G. Cuccodoro & I. Löbl, MHNG.

Paratype: West Malaysia, Perak, Maxwell Hill, 1150 m, 25.XI.1999, leg. G. CUCCODORO & I. LÖBL, 1 ex. SMNS.

Description: Body length 3.8–5.0 mm. Eyes normal, not prominent. Pronotum with large, partly confluent punctures, distance 0.5–2x puncture diameters, most punctures with longer erect setae; surface convex and feebly shagreened, disc without impressions; lateral margins irregularly bordered; posterior corners angulate; propleura with sparser punctation as on pronotum, and with shorter setation. Elytra ovate with rows of punctures in feeble striae, punctures of rows of similar size as punctures on pronotum, most punctures with longer and erect setae; intervals with a few fine punctures, each bearing an erect seta of equal length, interval 7 with distinct nearly tooth-like setiferous pores, basal one also nearly tooth-like,

all intervals distinctly convex, surface feebly shagreened. Apex of elytra not prolonged. All femora without teeth or tubercles. Tibiae of both sexes without pecularities. Aedeagus see Fig. 18.

Diagnosis: In the key of the Malayan species by Schawaller (2014), Laena larutica n. sp. would run to L. kenyirica Schawaller, 2006 from lowland forest in the northeastern part of the peninsula. Both share the general body size and shape, the long and erect dorsal setation, the pronotum widest in anterior third, the presence of tooth-like setiferous pores around elytral shoulders, the convex elytral intervals, and unarmed femora. However, in L. kenyirica the pronotum is flatter, its punctation is sparser, and the lateral margin is regularly bordered. The aedeagus is also quite different with short and broad, nearly quadrate apicale with blunt tip. L. tanahratica Schawaller, 2014 from the Cameron Highlands belongs to the same group, but in this species, besides other characters, the pronotum is widest in the middle, and the

aedeagus is also different with narrow, finger-like apicale. Etymology: Named after Bukit Larut, the modern name of the Maxwell Hill, where the type series was collected.

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