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**Some species of *Lacconectus* Motschulsky, 1855
collected in the Eastern Himalayas, with the description
of two new species (Coleoptera, Dytiscidae)**

by Michel Brancucci

Abstract. The genus *Lacconectus* Motschulsky, 1855 in the Eastern Himalayas is reviewed on the basis of a large collection made by Petr Pacholátko and Luboš Dembický in Assam, Meghalaya and Arunachal Pradesh, and by Manfred Jäch of the Natural History Museum Vienna in Bhutan. Two species are described as new, *L. klausnitzeri* sp.nov. and *L. arunachal* sp.nov., raising the total number of *Lacconectus* species worldwide to 70. The genus *Lacconectus* is recorded for the first time from Bhutan, on the basis of *L. nicolasi* Brancucci, 1986.

Key words. Coleoptera – Dytiscidae – *Lacconectus* – Eastern Himalayas – new species – distribution

Introduction

A revision of the Indian species of *Lacconectus* Motschulsky, 1855 (BRANCUCCI 2003) showed that the eastern part of the Himalayas has in general been poorly collected. The material studied here and the two new species described are a substantial contribution to the fauna of that region, and this brings the number of species known from the eastern states of India to nine (see Conclusions, Tab. 1).

Material and methods

The material studied here was entirely collected by P. Pacholátko (Brno) and L. Dembický (Brno) and by Dr. Manfred Jäch (Vienna). It is deposited in the collection of the Natural History Museum, Basel (NMB) and of the Natural History Museum, Vienna (NMW). In this paper, the terminology proposed by MILLER & NILSSON (2003) for the aedeagus is used.

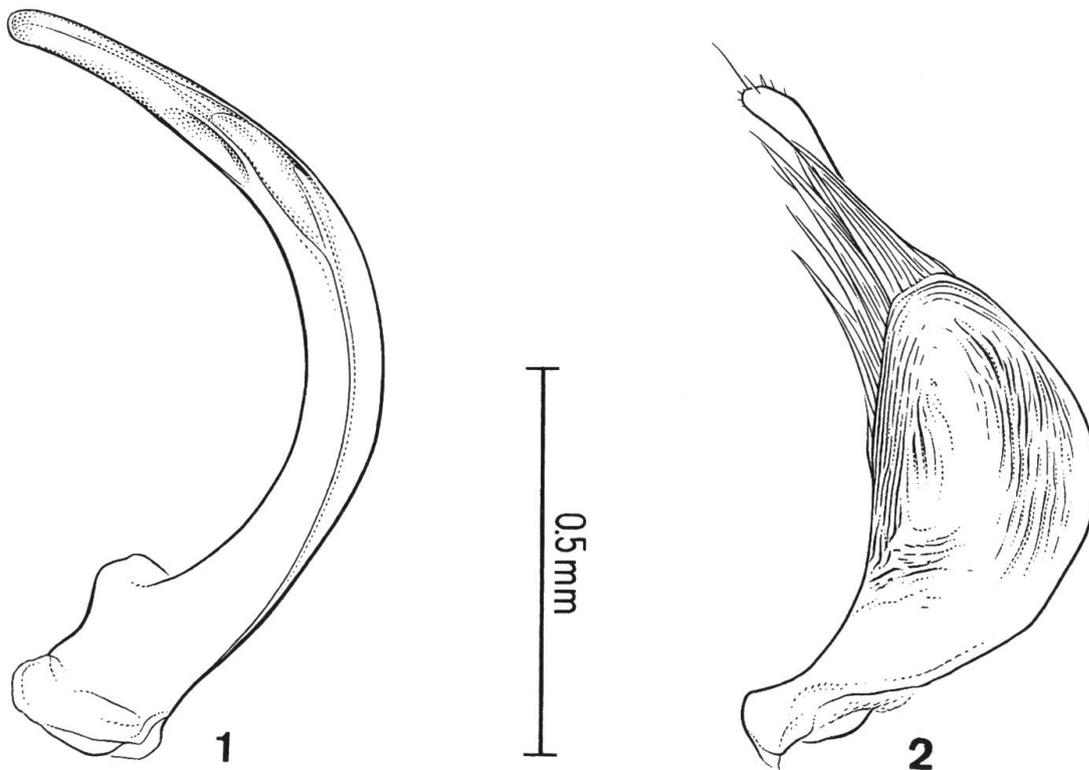
Taxonomy

***Lacconectus klausnitzeri* sp.nov.** (Figs 1–2)

Type material. Holotype ♂ and 5 paratypes (2 ♂ and 3 ♀) (NMB): NE India, Arunachal Pradesh. 8 km S Jamiri, Sessa vicinity, 27°07'–09'N, 92°34'E, 26.V.–4.VI.2005, 350 m, P. Pacholátko. 6 paratypes (1 ♂ and 5 ♀, NMB): NE India, Assam, Bhalukpong, 27°02'N, 92°35'E, 150 m, 26V.–3.VI.2006, P. Pacholátko.

Description. Body broadly oval, ferruginous-brown, shining; vertex, frons, sides of pronotum as well as base and apex of elytra testaceous.

Head brown, somewhat darker alongside eyes, semi-matt. Microsculpture consisting of small, distinctly impressed polygonal meshes and of dense but irregularly-distributed and deeply impressed punctures. Clypeal grooves, a row of deep punctures



Figs 1–2. *Lacconectus klausnitzeri* sp.nov.: 1, aedeagus in lateral view; 2, left paramere.

alongside eyes and a transverse depression beside eyes deeply impressed. Antennae testaceous; joints elongate, the fifth 1.7 times as long as broad.

Pronotum testaceous, the sides broadly testaceous, semi-matt. Microsculpture consisting of small polygonal and well-impressed meshes and of irregularly-distributed small and deeply-impressed punctures. Longitudinal median suture short and mostly very superficial. Anterior and lateral rows consisting of large punctures coalescing at sides. Punctures at each latero-basal quarter coarse. Lateral margins finely bordered, broadly interrupted before reaching anterior border.

Elytra shining, ferruginous-brown, with a subbasal testaceous band as well as a postmedian and a subapical testaceous spot. Margin alongside epipleura brownish-black. Epipleura brownish-black, broadly testaceous at base. Reticulation consisting of polygonal petal-like meshes at base, with a distinctly impressed puncture at their intersections. Reticulation very soon giving way to a fine striolation which becomes more and more superficial and finally disappears completely behind middle. Sutural row of punctures reduced to a few large punctures on apical 1/3. Discal row of punctures not reaching base with irregularly distributed medium-sized punctures. Sublateral row with

punctures almost in a straight line on anterior half. The second interspaces with some well-spaced large punctures.

Underside testaceous-brown. Prosternal process short, only 1.3 times as long as broad, strongly bordered at sides and broadly rounded at apex. Metacoxal lines represented only by deep and short striae at their mid-length. Sternites 3, 4 and 5 each with very sparse and irregularly-distributed medium-sized punctures, particularly at their mid-length. Anal sternite with obsolescent, almost indiscernible microstriation posteriorly, almost smooth, with an oblique row of broad setae on both sides of middle. Posterior margin finely bordered and broadly rounded.

Measurements: Holotype: TL: 4.7 mm, TL-h: 4.25 mm, TW: 2.7 mm. Paratypes: TL: 4.6–5.1 mm (4.83 mm, n = 6), TL-h: 4.1–4.5 mm (4.34 mm, n = 6), TW: 2.5–2.8 mm (2.71 mm, n = 6).

♂. Aedeagus, in lateral view, broadly curved, distinctly narrowed at mid-length, then stretched and parallel-sided on apical part and rounded at apex. (Fig. 1). Parameres broad (Fig. 2).

♀. Similar to ♂. Valvae long-elongated, cylindrical, rounded at apex. Seta subapical.

Distribution. India: Arunachal Pradesh.

Derivatio nominis. Named after my friend Prof. Bernhard Klausnitzer for his constructive discussions of the many different aspects of life.

Differential diagnosis. This species is closely related to *L. sikkimensis* Brancucci, 1989 but can easily be distinguished by the microreticulation on the elytra which disappears completely behind the middle in *L. klausnitzeri* sp.nov. whilst it is distinctly visible up to the apex in *L. sikkimensis*. The aedeagus is also very similar, but more slender and distinctly narrowed at apex in the new species. The size of *L. klausnitzeri* sp.nov. is on average somewhat smaller (4.6–5.1 mm). The colour of *L. klausnitzeri* sp.nov. is duller, ferruginous-brown. whereas it is testaceous-brown in *L. sikkimensis*.

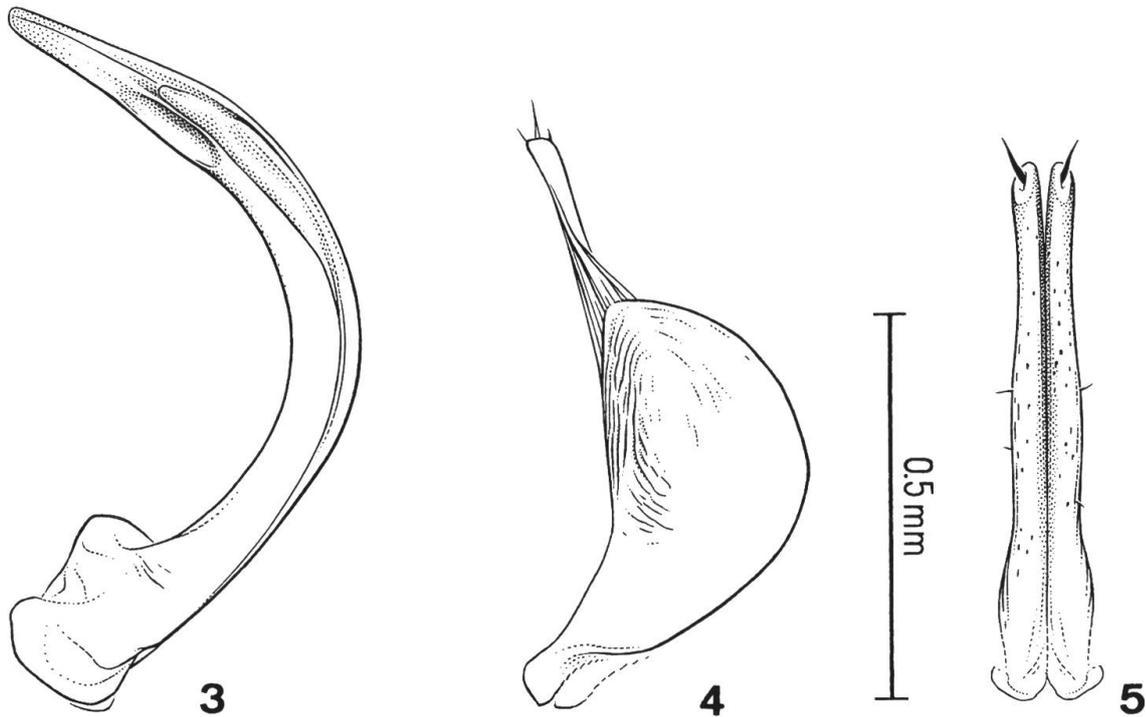
Lacconectus arunachal sp.nov. (Figs 3–4)

Type material. Holotype ♂ and 6 paratypes (3 ♂ and 3 ♀) (NMB): NE India, Arunachal Pradesh. 8 km S Jamiri, Sessa vicinity, 27°07'–09'N, 92°34'E, 26.V.–4.VI.2005, 350 m, P. Pacholátko.

Description. Body oval, more elongate, shining, testaceous-brown; sides of pronotum and base and apex of elytra testaceous.

Head brown, somewhat darker alongside eyes, semi-matt. Microsculpture consisting of small, distinctly impressed polygonal meshes and of irregularly-distributed and sparse, deeply impressed punctures. Clypeal grooves, a row of deep punctures alongside eyes and three coalescent punctures beside eyes deeply impressed. Antennae testaceous; joints very short, the fifth 1.4 times as long as broad.

Pronotum testaceous-brown, the sides broadly testaceous, the disc indefinitely testaceous-brown, shining. Microsculpture consisting of small polygonal meshes and of irregularly-distributed, small and deeply-impressed punctures. Longitudinal median suture long but superficial. Anterior and lateral rows consisting of large punctures,



Figs 3–5. *Lacconectus arunachal* sp.nov.: 3, aedeagus in lateral view; 4, left paramere; 5, valvae.

numerous and coalescing at side. Punctures at each latero-basal quarter coarse. Lateral margins finely bordered, broadly interrupted before reaching anterior border.

Elytra shining, testaceous-brown, with a subbasal band as well as a postmedian and a subapical testaceous spot. Margin alongside epipleura dark brown posteriorly. Epipleura testaceous-brown on entire length. Reticulation consisting of polygonal meshes and of sparse small punctures, the latter more numerous behind middle. Meshes becoming more and more elongate from mid-length backwards; they are distinctly transverse on apical third and are replaced by a fine striolation on apical fifth. Sutural row of punctures reduced to a few large punctures on apical 1/3. Discal row of punctures not reaching base with irregularly-distributed, medium-sized punctures; punctures in spaced groups. Sublateral row with punctures almost in a straight line on anterior half. The second interspaces with several well-spaced and well-impressed large punctures.

Underside testaceous-brown. Prosternal process short, 1.4 times as long as broad, strongly bordered at sides and broadly rounded at apex. Metacoxal lines represented only by deep and short striae at their mid-length. Sternites 3, 4 and 5 each with sparse and irregularly-distributed, medium-sized punctures at their mid-length. Anal sternite with obsolescent, almost indiscernible microstriolation anteriorly, with polygonal

meshes posteriorly, with an oblique row of broad setae on both sides of middle. Posterior margin finely bordered and broadly rounded.

Measurements: Holotype: TL: 3.65 mm, TL-h: 3.25 mm, TW = 2.0 mm. Paratypes: TL: 3.5–4.0 mm (3.82 mm, n = 10), TL-h: 3.2–3.7 mm (3.46 mm, n = 10), TW: 2.0–2.2 mm (2.13 mm, n = 10).

♂. Aedeagus, in lateral view, broadly curved, regularly tapered on apical 1/4 and narrowly rounded at apex (Fig. 1). Parameres broad (Fig. 2).

♀. Similar to ♂. Valvae elongated, narrowly rounded at apex. Seta subapical.

Distribution. India: Arunachal Pradesh.

Derivatio nominis. Species originating from Arunachal state. The name is a noun in apposition.

Differential diagnosis. This species is closely related to *L. biswasi* Brancucci, 1986 but can easily be distinguished by the aedeagus, the apical 1/4 of which is regularly tapered and narrowly rounded. In *L. biswasi* it is distinctly less tapered, bent ventrally and broadly rounded at apex. Furthermore, the elytral reticulation enables a rapid separation to be made. In *L. arunachal* sp.nov. the meshes become elongated just after the mid-length and are replaced by a striolation on apical 1/4, whereas in *L. biswasi* the meshes remain polygonal up to posterior 1/3 and then become elongate but are never replaced by a striolation. *L. arunachal* sp.nov. is also close to *L. nicolasi* Brancucci, 1986. The aedeagus and the antennal joints allow an easy identification to be made: the latter are at most 1.2 times as long as broad in *L. arunachal* sp.nov. but at least 1.7 times in *L. nicolasi*.

***Lacconectus gusenleitneri* Brancucci, 1986**

Lacconectus gusenleitneri Brancucci, 1986: *Entomologica Basiliensia* 11: 102.

Material studied. NE India, Meghalaya, SW of Cherrapunjee, 25°13'–14'N, 91°40'E, 900 m, 1–24.V.2005, P. Pacholátko (numerous specimens, NMB); idem, L. Dembický (numerous specimens, NMB). NE India, Meghalaya, Khasi Hills, Mawsynram, 25°18'N 91°29' E, 800 ± 100 m, 5–9.VI.2006, P. Pacholátko (56 exx, NMB).

Distribution. India: Meghalaya.

Remarks. This species was described from a single specimen from Garo Hills (Meghalaya) (BRANCUCCI 1986). Since then it has been recorded from different localities in Meghalaya (BRANCUCCI 2003).

***Lacconectus biswasi* Brancucci, 1986**

Lacconectus biswasi Brancucci, 1986: *Entomologica Basiliensia* 11: 121.

Material studied. NE India, Meghalaya, SW of Cherrapunjee, 25°13'–14'N, 91°40'E, 900 m, 1–24.V.2005, P. Pacholátko (numerous specimens, NMB); idem, L. Dembický (numerous specimens, NMB). NE India, Meghalaya, Khasi Hills, Mawsynram, 25°18'N 91°29' E, 800±100 m, 5–9.VI.2006, P. Pacholátko (96 exx, NMB).

Distribution. India: Manipur and Meghalaya.

Remarks. This species was described from a single specimen from one locality in Manipur (formerly Assam), a fully-fledged state since 1972 (BRANCUCCI 1986). Since then it has been also recorded from Meghalaya (BRANCUCCI 2003).

***Lacconectus nicolasi* Brancucci, 1986**

Lacconectus nicolasi Brancucci, 1986: *Entomologica Basiliensia* **11**: 119.

Material studied. NE India, Arunachal Pradesh, 8 km S Jamiri, Sessa vicinity, 27°07'–09'N, 92°34'E, 26.V.–4.VI.2005, 350 m, P. Pacholátko (numerous specimens, NMB); idem, L. Dembický (numerous specimens, NMB).

Bhutan, Sarpang Prov., Geylephug – Shemgang rd., 10 km NNE Geylephug, 26°56'43"N, 90°31'29"E, 400 m, 26.XI.2005, M. Jäch (29 exx) (18 exx, NMW; 5 exx, NMB). Bhutan, Sarpang Prov., 13 km SE Damphu, Sarpung-Damphu pass, E slope, 26°56'52" N, 90°12'35"E, 1700 m, 27.XI.2005, M. Jäch (31 exx) (1 ex., NMW). Bhutan, Sarpang Prov., 14km SE Damphu, ca. 1365 m, 26°56'51"N 90°13'32"E, 26.XI.2005, M. Jäch (26 exx) (2 exx, NMW).

Distribution. Nepal and India (Sikkim, West Bengal and Arunachal Pradesh) and Bhutan.

Remarks. Known from different localities in Nepal and from Sikkim and West Bengal in India. The material listed here represents a new record for Arunachal Pradesh. New record for Bhutan.

Conclusions

In this paper, the genus *Lacconectus* is recorded for the first time from the large country of Bhutan, on the basis of a few specimens of *L. nicolasi* from Sarpang Province. This shows how poorly-known is the aquatic fauna of this entire region. It is hoped that a more extensive collection will be soon made in that country, which will help us to understand the status and the distribution of the individual species.

No species at all have previously been recorded from Arunachal Pradesh. The abundant material collected by my friends and colleagues Petr Pacholátko and Luboš Dembický in 2005 and 2006 enables to add two new species to the genus *Lacconectus*, and so to bring the number of species now known from India and Sri Lanka to 23 and the total number of species worldwide to 70. There are still no records available from the Indian states of Mizoram and Nagaland. Distribution of the Eastern Himalayas species is summarized in Tab. 1.

Acknowledgements

I should like to thank my Czech colleagues Petr Pacholátko (Brno) and Luboš Dembický (Brno) for this wonderful collection from almost unknown parts of the world and Dr. Manfred Jäch (Natural History Museum, Vienna) for the material collected in Bhutan. My thanks go also to Adrian Pont (Oxford) for correcting the English of this manuscript. The illustrations were made by Armin Coray, and I thank him for his excellent work.

STATE/ SPECIES	Sikkim	West Bengal	Bhutan	Meghalaya	Assam	Manipur	Arunachal Pradesh
<i>L. sikkimensis</i> Brancucci, 1989	+						
<i>L. nicolasi</i> Brancucci, 1986	+	+	+				+
<i>L. gusenleitneri</i> Brancucci, 1986					+		
<i>L. splendidus</i> Brancucci, 2003					+		
<i>L. biswasi</i> Brancucci, 1986					+	+	
<i>L. ovalis</i> Gschwendtner, 1936						+	
<i>L. pederzanii</i> Brancucci, 1986						+	
<i>L. klauznitzeri</i> sp.nov.							+
<i>L. arunachal</i> sp.nov.							+

Tab. 1. Distribution of the Eastern Himalayas species of the genus *Lacconectus* Motschulsky.

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