

Two new *Leiodes* species (Coleoptera: Leiodidae) from Nepal in the collection of the Naturkundemuseum Erfurt

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Summary

Leiodes annapurnai sp. n. and *L. hartmanni* sp. n. from Nepal are described and compared to similar species. *L. lucens* (FAIRMAIRE, 1855) is recorded from Nepal for the first time. Notes about morphology of *L. variabilis* DAFFNER, 1986 are added.

Zusammenfassung

Leiodes annapurnai sp. n. und *L. hartmanni* sp. n. werden aus Nepal beschrieben und mit ähnlichen Arten verglichen. *L. lucens* (FAIRMAIRE, 1855) konnte erstmals in Nepal nachgewiesen werden. Desweiteren werden Hinweise zur Morphologie von *L. variabilis* DAFFNER, 1986 gegeben.

Key words: *Leiodes*, new species, Nepal

1. Introduction

Only one recent work concerning Nepalese species of the genus *Leiodes* Latreille, 1796 was published (DAFFNER 1986). Altogether, 7 species was reported from the country. The classification of mesosternal types in present work is used according to DAFFNER (1986).

Present work adds two species new to science, one species new to Nepal and some notices about morphology of one of Nepalese species due to study of the material recently collected in Nepal and coming from the collection of the Natural History Museum in Erfurt, collection of the Hungarian Natural History Museum in Budapest and from the collection of A. Weigel (Pößneck, Germany). The material consists of 20 specimen in 5 species of the genus *Leiodes* and 1 specimen belonging to the genus *Pseudocolenis* Reitter, 1884. Fifteen specimens of *Leiodes* belong to *L. annapurnai* sp. n. and *L. hartmanni* sp. n. which are described below, two specimens were identified as *L. variabilis* DAFFNER, 1986, the species yet known from Nepal and one specimen was determined as *L. lucens* (FAIRMAIRE, 1855), new for Nepal. Two rest specimens belonging to a *Leiodes* species and also the specimen of *Pseudocolenis* were not exactly determined due to their sex. These specimens are females and they seem to be belonging to a species new to science but in consideration of their sex they are not fit to be described at present. The description requests an examination of a male.

The material mentioned in this work is deposited in collection of the Natural History Museum in Erfurt (MNHE), collection of the Hungarian Natural History Museum in Budapest (HNHMB), and in the author's collection (SC).

2. Results

Leiodes annapurnai sp. n.

Type material. Holotype: male, Nepal, Annapurna Mts., S Lamjun Himal, E Taunja Danda Quellgeb., Chhar Khola, 4100 m, 14.8.1995, Fabrizi, Jäger and Schmidt lgt.; paratypes: 1 male, 1 female, Nepal, Annapurna Mts., S Lamjun Himal, E slope Taunja Danda, 3900 m, 11.8.1995, Fabrizi, Jäger and Schmidt lgt.; 2 males, 1 female, Nepal, Annapurna Mts., S Lamjun Himal, up. Sundar Danda, 4000-4200 m, 16.8.[1995], Fabrizi, Jäger and Schmidt lgt.; 2 males, 2 females, Nepal, Annapurna Mts., S Lamjun Himal, W slope Taunja Danda, 3700 m, 9.8.1995, Fabrizi, Jäger and Schmidt lgt.; 2 male, 1 female, Nepal, Annapurna Mts., Lamjun Himal, S slope Namun La, N Miyardi Kola, 4200 m, 18.8.1995, Fabrizi, Jäger and Schmidt lgt.; 1 female, Nepal, Himalaya, Manaslu Mts., Neme Pokhari Lekh bel. Neme Pokhari, 4200 m, 7.9.1995, Schmidt lgt.

The holotype, 4 male and 5 female paratypes deposited in MNHE, 3 males and 1 female paratypes are deposited in SC.

Description:

Oblong oval. Variable in color, from uniformly red-brown dorsum with brown antennal club in one of the paratypes to black specimen with mouth, clypeus, tarsi, 1st to 6th antennal segments and basal margin of pronotum dark red, tibiae and femora red-brown and antennal club black. In others specimens head red, pronotum and scutellum brown-red, or head and pronotum black with paler lateral margins, scutellum and elytra dark brown. Antennal club always darker than rest of antennae. Underside red to red-brown.

Length of body 2.4-3.5 mm, in holotype 2.8 mm, head in holotype 0.5 mm, pronotum 0.8 mm, elytra 1.5 mm, antenna 1.0 mm. Maximal width of head in holotype 0.7 mm, pronotum 1.3 mm at basis, elytra 1.4 mm at basal fifth of their length.

Head: Tempora with oblique microreticulation, rest of head smooth except of punctuation. Punctuate by distinct punctures spaced by 3-4 times their diameter. Two punctures larger than others placed parallelly with anterior margin of pronotum between eyes near their posterior level. Close to internal margin of each eye with similar large seta bearing puncture. Ratio of length of antennal segments 2 to 11 (the 2nd equal to 1.0) = $1.0 - 1.3 - 0.7 - 0.7 - 0.6 - 1.0 - 0.4 - 0.9 - 1.3 - 1.3$. Ratio of width of club segments 7 to 11 (7th equal to 1.0): $1.0 - 0.8 - 1.1 - 1.1 - 1.1$. Ratio of width : length of the antennal club segments $1.1 - 2.0 - 1.4 - 1.0 - 1.0$. Antennae as in Fig. 2.

Pronotum: Widest at base, lateral margins run toward anterior angles in flat round, in some paratypes basal half of lateral margins straightly convergent. Basis straight, very flatly concave before hind angles. Posterior angles slightly sharp, in some specimens nearly rectangular, broadly rounded, dorsally viewed. In lateral view posterior angles blunt, broadly rounded, lateral margins of pronotum with very blunt rounded angle in their midlength, straightly run to anterior and also to posterior angles. Outline of pronotum slightly concave before hind angles laterally seen. More sparsely punctuate than on head, punctures separated by about 4-5 times their own diameter. Just before base, with irregular row of larger sparsely distributed punctures. Interstices smooth or with traces of microreticulation.

Scutellum: Without microreticulation, punctures as on pronotum, separated by about 2-4 times their diameter.

Elytra: Widest in range from basal fifth to basal third of their length. Lateral sides of elytra rounded, lateral margins simultaneously not visible in dorsal view. Surface with slightly

developed traces of microreticulation in some specimens. With regular rows of punctures. Ninth row lacking or indicated by several punctures parallelly arranged near to lateral margin, joined lateral channel at about basal quarter of elytral length. Elytral rows composed of strong punctures separated by 1.0 times their diameters. Intervals very feebly and sparsely punctate with small punctures spaced by about 6-10 times their diameters. Odd intervals with some punctures larger than others in intervals but smaller than those in rows.

Membranous wings developed or lacking in some specimens.

Mesosternum: Carina of type B, ending vertically as in Fig. 4.

Metasternum: Oval central plane covered by coarse long recumbent setae. Sides of metasternum with very shallow irregularly distributed punctures bearing short setae. Surface at sides microreticulated.

Ventrites: Without striking characters.

Legs: In male 2nd to 4th segment of protarsi and mesotarsi slightly dilated. In female tarsi simple. Protibiae at apex nearly twice as broad as at their basis, as wide as 11th antennal segment. Metafemora with sharp distinct tooth at about distal third of length and with blunt angle at hind distal margin, metatibiae slightly simply curved in male, as in Fig. 3. In female femora without striking characters, metatibiae very slightly regularly curved.

Genitalia: Aedeagus as in Fig. 1.

Bionomy. Not known.

Derivatio nominis. The name is derivated from the mountains of the original occurrence.

Differential diagnosis: *L. annapurnai* sp. n. is similar to *L. smetanai* DAFFNER, 1986 and to *L. nikodymi* ŠVEC, 1991 by the type of mesosternum, shape of body, missing or strongly reduced 9th elytral row and by the shape of aedeagus. The new species differs from both mentioned species by the shape of endophallus and by the presence of two large punctures on front while the species compared have four ones. From *L. smetanai* it differs also by the punctures of usual size placed in lateral channel while the same ones are striking large in the species compared. From *L. nikodymi* the new species differs also by the presence of two setae at the end of each paramera. Paramerae are multisetose in *L. nikodymi*.

Variability. The most remarkable variable character occurring in the species seems to be the presence or absence of membranous wings. This is very unusual in species of the genus. Only BARANOWSKI (1993) mentioned the wing-dimorphism in Northamerican *L. punctostriata* KIRBY, 1837, *L. rufobasalis* BARANOWSKI, 1983 and *L. strigata* (LE CONTE, 1850).

Leiodes hartmanni sp. n.

Type material. Holotype: male, Nepal, prov. Karnali, distr. Jumla, 14 km E Jumla, Jharjwala, Bachtal, 2600 m, 23.V.1995, leg. M. Hartmann. Deposited in NHME.

Description:

Oval. Yellow-red with darker basal margin of pronotum, tip of mandibles black. Legs and antennal segments 1st to 6th red, antennal club brown. Ventral side of body red-yellow, margins of coxal cavities, coxae, longitudinal mesosternal carina and hind margin of anterior transversal part of carina darker.

Length of body 2.8 mm, head 0.5 mm, pronotum 0.6 mm, elytra 1.7 mm, antenna 0.9 mm. Maximal width of head 0.7 mm, pronotum 1.3 mm at basis, elytra 1.5 mm at basal third of their length.

Head: Tempora with distinct oblique microreticulation, rest of head with traces of micro-

reticulation. Irregularly punctuate by distinct punctures spaced by 3-10 times their diameter. Some small places on disc without punctuation present. Two punctures larger than others placed transversally between eyes anteriorly before their posterior level. Ratio of length of antennal segments 2 to 11 (the 2nd equal to 1.0) = 1.0 – 1.4 – 0.8 – 0.8 – 0.8 – 1.2 – 0.6 – 1.2 – 1.2 – 1.8. Ratio of width of club segments 7 to 11 (7th equal to 1.0): 1.0 – 0.8 – 1.4 – 1.5 – 1.3. Ratio of width: length of the antennal club segments 1.1 – 1.7 – 1.5 – 1.6 → 0.9.

Pronotum: Widest at base, lateral margins straightly run toward their midlength, then lateral margins towards anterior angles roundly narrowed. Basis straight. Posterior angles rectangular, rounded dorsally viewed. In lateral view posterior angles blunt, broadly rounded, lateral margins of pronotum straight to basal third of their length than roundly run to anterior angles. Surface with traces of microreticulation, with sparser and finer punctures than on head, punctures separated by about 5-10 times their own diameter. Just before base with irregular row of sparsely distributed larger punctures.

Scutellum: Without microreticulation, with several punctures similar to those on head.

Elytra: Widest at basal third of their length. Lateral sides of elytra rounded, lateral margins simultaneously not visible in dorsal view. Surface without microreticulation. With regular rows of punctures. Ninth row oblique, short, joining lateral channel in basal fourth of elytral length. Elytral rows composed of punctures of medium size separated by 2-3 times their diameters. Intervals very feebly and sparsely punctuate with small punctures spaced by about 6-8 times their diameters. Odd intervals with some punctures larger than those in rows.

Membranous wings fully developed.

Mesosternum: Carina of type A.

Metasternum: Oval central plane smooth. Sides of metasternum with very shallow irregularly distributed punctures. Surface laterally microreticulated.

Ventrites: Without striking characters.

Legs: In male 2nd to 4th segment of anterior tarsi and mesotarsi slightly dilated. Anterior tibiae at apex twice as broad as at basis, narrower than 11th antennal segment. Posterior femora simple. Hind tibiae slightly simply curved.

Genitalia: Aedeagus as in Fig. 5.

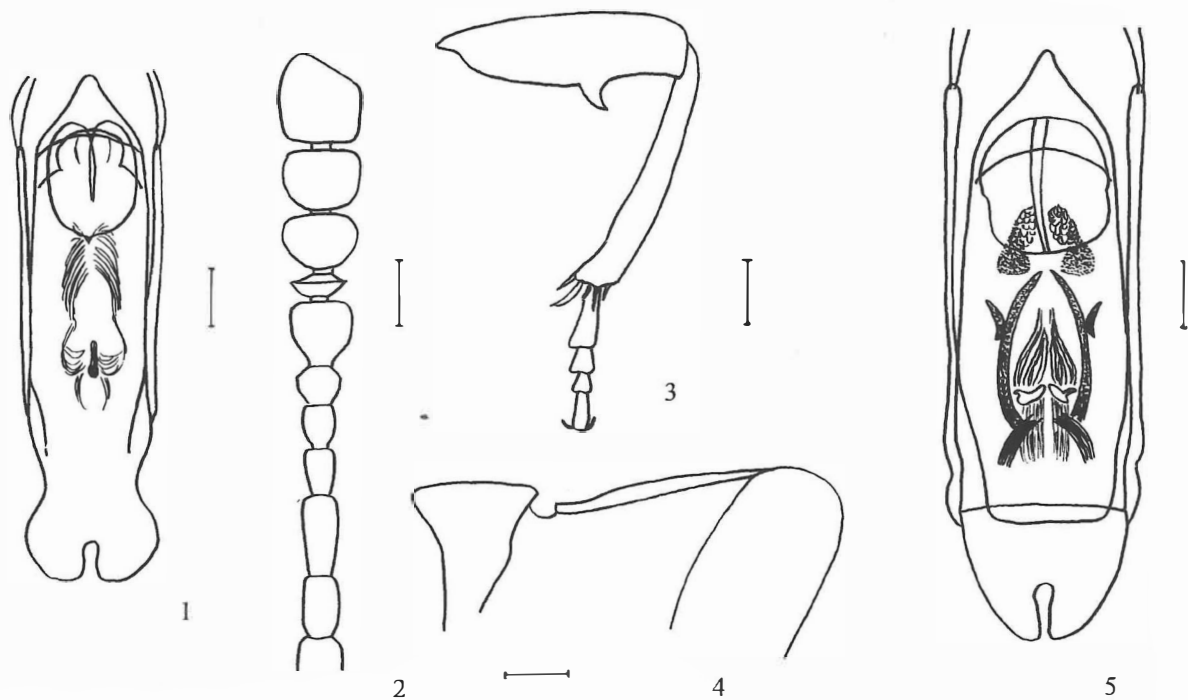
Bionomy. Not known.

Derivatio nominis. It is derived from the name of the collector.

Differential diagnosis: *L. hartmanni* sp. n. has no striking characters, it could be compared to *L. chinensis* ANGELINI & ŠVEC, 1994 and *L. becvari* ANGELINI & ŠVEC, 1994 by the same shape of the body, very similar shape of tegmen and the type of endophallic structures, by the type of elytral punctuation including the presence of short oblique 9th elytral row. The new species differs from the compared species by the type of mesosternal carina A which is of the type B in both species mentioned and also by finer and sparser punctuation on pronotum.

Both newly described species could be included in DAFFNER's key (1986) as follows:

2	Elytra without oblique humeral row of punctures	2'
-	Elytra with oblique humeral row	7'
2'	Head with 4 large punctures between eyes	3
-	Head with 2 large punctures between eyes. Antennal club darker than rest of antenna.	
	Last antennal segment as wide as previous one. Mesosternal carina of type B.	
	2.4 – 3.5 mm. Nepal.	<i>Leiodes annapurnai</i> sp. n.



Figs 1-4: *Leiodes annapurnai* sp. n.; 1 – aedeagus dorsally, 2 – antenna, 3 – hind leg of male dorsally, 4 – mesosternal carina laterally;
 Fig 5: *Leiodes hartmanni* sp. n., aedeagus dorsally. Scale in Figs 1-3, 5 = 0.1 mm, in Fig. 4 = 0.2 mm.

From 3 to 6 according to DAFFNER (1986).

- 7' Mesosternum of type A, head with 2 large punctures between eyes. Antennal club darker than rest of antenna. Ultimate antennal segment narrower than penultimate. 2.8 mm.
Nepal. *Leiodes hartmanni* sp. n.
- Head with 4 large punctures between eyes or type of mesosternum B. 7

Leiodes variabilis DAFFNER, 1986

Daffner, 1986: 75.

Material examined: male, Nepal, Ganesh Himal, 1 km S Sondang, 3180 m, 28°10'N, 85°13'E, 21.IX.1994, M. Herblay, T. Csövényi lgt, deposited in HNHMB; female, Nepal, Himalaya, Manaslu Mts., Budha W slope, Uut Kharka, 3500 m, 10.IX.1995, leg. J. Schmidt, deposited in NHME.

The species was known only in the type serie from Nepal, Province Bagmati and from India, Kumaon, till now.

Specimens examined agree well to the original description except of some details. Hind pronotal angles are blunt, shortly rounded in material examined, while the original description mentions rectangularly shaped ones. The original description does not mean the distinctive shape of hind legs of female. Hind femora in investigated female bear wide hook-shaped thorns at ventral and dorsal margin before knee and hind tibiae are long, slightly twice sinuated.

Leiodes lucens (FAIRMAIRE, 1855)

= *Anisotoma lucens* FAIRMAIRE, 1855: 76.

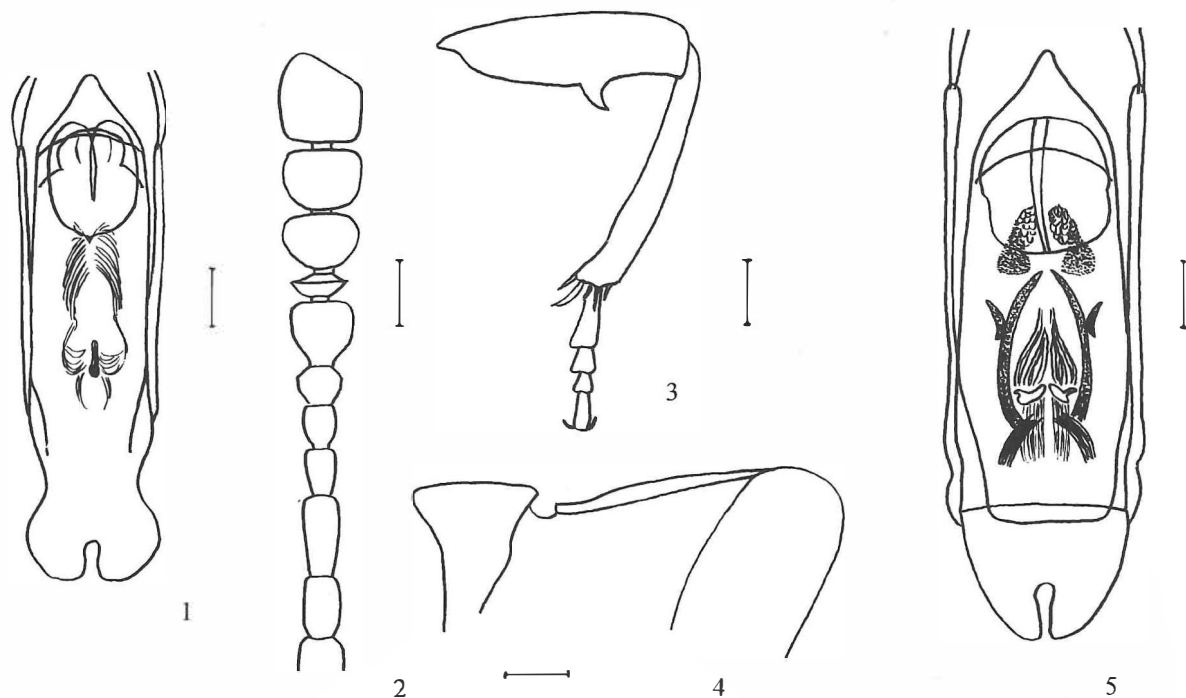
= *Leiodes lucens* DAFFNER, 1983: 71.

Material examined: male, Nepal, Prov. Karnali, 29°12,10'N, 82°18,56'E, Hochtal Gothichaur, 3000 m NN, 13.VI.1997, leg. E. Grill, BF, deposited in MNHE.

There are some differences in the specimen examined in the comparison to the specimens from Europe. It is smaller with dark head and pronotum, broadly rounded hind pronotal angles, a little different shape of endophallic structures and it has only 2 large punctures between the eyes while *L. lucens* is known with 4 large frontal punctures. These characters look to be enough for the species status. But there are specimens in the authors collection from China which are externally very similar to the specimens from Central Europe with some small differences in the shape of pronotum and an other one also from China resembling the examined specimen from Nepal which shows differences in the shape of endophallic structures. So these Nepalense and Chinese specimens of *Leiodes lucens* seem to be a proof of the variability of the species.

Acknowledgement

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