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***Bradycellus nepalensis* spec. nov.,
the first species of the subgenus *Tachycellus* from Nepal
(Coleoptera, Carabidae, Harpalini)**

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Abstract: A new species, consisting of two subspecies, of subgenus *Tachycellus* MORAWITZ of the genus *Bradycellus* ERICHSON is described from Nepal: *Bradycellus (Tachycellus) nepalensis nepalensis* ssp. nov. (type locality: Nepal: Prov. Bagmati: above Shermathang, 2900 m) and *B. (T.) nepalensis ghoropaniensis* ssp. nov. (type locality: Nepal: Ghoropani Pass, 2850 m).

Introduction

Recently we had the opportunity to examine the material of several expeditions to the Himalaya, mainly that by Dr. Aleš Smetana of Agriculture Canada, Ottawa and Dr. Ivan Löbl of Muséum d'Histoire naturelle, Genève. The material included a new species of the subgenus *Tachycellus* of the genus *Bradycellus*.

The species of the subgenus *Tachycellus* have not been yet known from the Himalaya; their discovery is important from the biogeographical point.

The species, described below belongs to the *B. anchomenoides* group (in sense JAEGER 1993); it consists of two subspecies.

Material, Methods and Acknowledgements

The material was provided by the Canadian National Collection, Agriculture Canada, Ottawa (CNC) and by the Muséum d'Histoire naturelle, Genève (MHNG).

We thank Dr. Aleš Smetana and Dr. Yves Bousquet (Ottawa), and Dr. Ivan Löbl (Genève) for lending us the material.

The specimens were examined under a stereomicroscope using magnifications from 30 to 90 times.

The line habitus drawings were prepared using a stereomicroscope with an ocular grid (20x20 squares) under the magnification 30 times.

The aedeagi were dissected and embedded in Canada balsam. Drawings of them were prepared under the magnification 160x, using a light microscope with ocular grid.

The measurements were made by an ocular micrometer in a stereomicroscope under the magnifications 25x (length of body) and 30x (individual parts of body).

The measurements and abbreviations used for them are:

BL (length of body) - distance from apical margin of labrum to apex of elytron

HW (width of head) - maximum distance across head, including compound eyes

PL (length of pronotum) - linear distance from anterior to posterior margin, measured along median line

PW (width of Pronotum) - linear transverse distance at widest point

EL (length of elytra) - linear distance from tip of shoulder to apex

EW (width of elytra) - linear transverse distance at widest point

***Bradycellus (Tachycellus) nepalensis* spec. nov. (Figs-1-12)**

D i a g n o s i s : This species may be distinguished from all other species of the subgenus *Tachycellus*, recorded from Asia, by the combination of the following characters:

- shape of pronotum, with characteristic basal foveae
- short, ovoid elytra
- strongly rudimental hind wings
- yellowish brown antennae
- shape of median lobe, with specific innerstructures

D e s c r i p t i o n :

L e n g t h : 4,4-5,2 mm (holotype of *B. nepalensis nepalensis* 4,4 mm, that of *B. nepalensis ghoropaniensis* 4,6 mm).

C o l o u r : Head, pronotum, elytra, ventral surface and parts of mandibles dark brown to black. Lateral margins, often also middle part of base and apex of pronotum, sometimes first interval of elytra, legs, antennae and palpi yellowish brown.

H e a d : Convex, not strongly thickened, relatively wide (PW/HW 1,31-1,39). Frontal impressions clearly carved, becoming deeper apically. Apical margin of labrum emarginate. Eyes moderately prominent. Left mandible not truncate at apex. Antennae 1,8-2,0x as long as pronotum, segment 2 sparsely ciliate in apical half, segment 3 in apical two thirds and 4 to 11 densely pubescent.

P r o n o t u m : Transverse, wider than long (PW/PL: 1,35-1,44). Lateral margins arcuate anteriorly; weakly arcuately or sometimes almost in straight line narrowed toward base. Apical margin shallowly emarginate, apical angles slightly or not promi-

ment, rounded at tips. Basal angles widely rounded. Lateral grooves narrow, reaching basal foveae. Position of lateral setae as figured (figs. 1, 7). Basal foveae moderately impressed, long and straight, in apical portion sometimes somewhat curved toward lateral margins, with a few punctures. Basal area often also with some punctures between basal foveae. Median line completely impressed.

Elytra: 1,44-1,53x as wide as pronotum, relatively short (EL/EW 1,30-1,43), oval to ovoid. Lateral margins slightly sinuate before apices. Scutellar striae sometimes short, often reduced or absent. Basal pore at beginning of stria 2 present. Interval 3 with an apical pore, situated near stria 2. Umbilicate series usually 6 + 8, posterior group somewhat divided into three groups 4 + 2 + 2. Striae moderately impressed, smooth, or in females of *nepalensis nepalensis* covered with fine punctures, intervals almost flat. Brachypterous.

Ventral surface: Prosternum and metasternum ciliate on middle part, abdominal sternites 2 to 6 pubescent, but 2 and 3 only sparsely ciliate on middle portions (♀) or near impression (♂) and on sternite 3 also on apical portion. Median part of sternites 2 and 3 of male with a densely ciliate impression. Metepisterna (figs. 3, 9) comparatively short, their length along inner margin not much greater than width along anterior margin. Apical margins of sternite 6 with one seta at each side in male and with two setae in female.

Legs: Male fore tarsi strongly, middle tarsi weakly, dilated, covered with biseriate adhesive setae ventrally.

Microsculpture: Invisible under magnification 90x on surface of head, pronotum and elytral intervals in male, or very obscure isodiametric meshes on head and transverse meshes on intervals of elytra present in female of *B. nepalensis ghoropaniensis*.

Aedeagus: Shape of median lobe in dorsal and lateral views as figured (figs. 4-6, 10-12). Main structures of inner sac composed of a triangular field with small scale-like spines (teeth mate) in basal half and with one (*B. nepalensis nepalensis*) or two groups (*B. nepalensis ghoropaniensis*) of medium-sized, closely arranged spines in apical half; if both groups present, then right one slightly longer than left one.

Styli: Shape of styli in lateral view as figured (figs. 2 and 8).



Photograph of habitus of *Bradycellus nepalensis nepalensis* ssp. nov. (paratype).

Indices:

| | PW/HW min-max (mean) | PW/PL min-max (mean) | EW/PW min-max (mean) | EL/EW min-max (mean) |
|------------|----------------------------|----------------------------|----------------------------|----------------------------|
| ♂♂ (n = 7) | 1,31-1,39 (1,35) | 1,37-1,43 (1,40) | 1,44-1,53 (1,47) | 1,36-1,42 (1,38) |
| ♀♀ (n = 4) | 1,32-1,38 (1,35) | 1,35-1,44 (1,39) | 1,47-1,51 (1,49) | 1,30-1,43 (1,36) |

Geographical distribution: *Bradycellus nepalensis* spec. nov. is at present known only from Central and West Nepal.

Phylogenetical relationships: Based on the arrangement of the structures of the inner sac of the aedeagus, and on the chaetotaxy of sternite 6 of male, *B. nepalensis* belongs to the *B. anchomenoides* group in sense of JAEGER 1993 and JAEGER & WRASE 1994. Furthermore, because the species is especially allied and similar to *B. anchomenoides* (BATES), it belongs to the *B. anchomenoides* subgroup and may represent an brachypterous derivate of *B. anchomenoides*.

Intraspecific classification: Population samples from Central Nepal differ from those in Western Nepal in structural features. Males of these populations can be correctly assigned to the proper geographical group. At the moment the populations are geographically separated; we characterize them below as two separate subspecies; however, since the two populations differ in the structures of the inner sac of aedeagus, they may have to be treated as separate species, after additional material from other localities will become available in the future.

***B. nepalensis nepalensis* ssp. nov.** (Figs. 1-6)

Type locality: Nepal: Prov. Bagmati: above Shermathang, 2900 m.

Type material: Holotype: ♂ (MHNG) „NEPAL (Prov. Bagmati), above Shermathang 2900 m, 26.IV.81, Löbl & Smetana“. Paratypes: 4♀♀ (CNC and Coll. N. Ito) with same data as holotype. 1♂ (MHNG) „NEPAL (Prov. Bagmati), below Thare Pati 3300 m, 9-13.IV.81, Löbl & Smetana“. 1♂ (CNC) „NEPAL Lalitpur Distr., Phulcoki 2700 m, 15.X.83, Smetana & Löbl“ and 1♂ (coll. B. Jaeger) „NEPAL Lalitpur Distr., Phulcoki 2550 m, 30.IV.84, Smetana & Löbl“ and 1♀ (Coll. N. Ito) „NEPAL Lalitpur Distr., Phulcoki 2550 m, 28.VI.84, Smetana & Löbl“.

Diagnosis: With the characters of the species.

Males of this subspecies differ from those of *B. nepalensis ghoropaniensis* by the structures of the inner sac of the aedeagus, with only one group of medium-sized, closely arranged spines in the right apical half (figs. 5, 6).

Females are probably distinguished from those of *B. nepalensis ghoropaniensis* by the distinctly punctured striae of the elytra. However, more material is needed for the confirmation of the validity of this character.

Geographical Distribution: *Bradycellus nepalensis nepalensis* is known only from the central portion of the Nepal Himalaya, and from the mountain of Phulcoki at the southern edge of the Kathmandu valley.

***B. nepalensis ghoropaniensis* ssp. nov.**

(Figs. 7-12)

Type locality: Nepal: Ghoropani Pass, 2850 m.

Type material: Holotype: ♂ (CNC), labelled „NEPAL Parbat Distr., Ghoropani Pass 2850 m, 9.X.83, Smetana & Löbl“. Paratypes: 1 ♀ (CNC) with same data as holotype. 2 ♂ (Coll. B. Jaeger, MHNG), „NEPAL Parbat Distr., Ghoropani Pass N slope 2700 m, 6.X.1983, Smetana & Löbl“ and 1 ♂ (Coll. N. Ito) „NEPAL Parbat Distr., Ghoropani Pass N slope 2800 m, 5.X.1983, Smetana & Löbl“.

Diagnosis: With the characters of the species.

Males of this subspecies differ from those of the nominotypical subspecies by the structures of the inner sac of the aedeagus, with one group of closely arranged, medium-sized, spines on each side of the apical half (figs. 11, 12), and by the elytral striae not, or less, punctate in females.

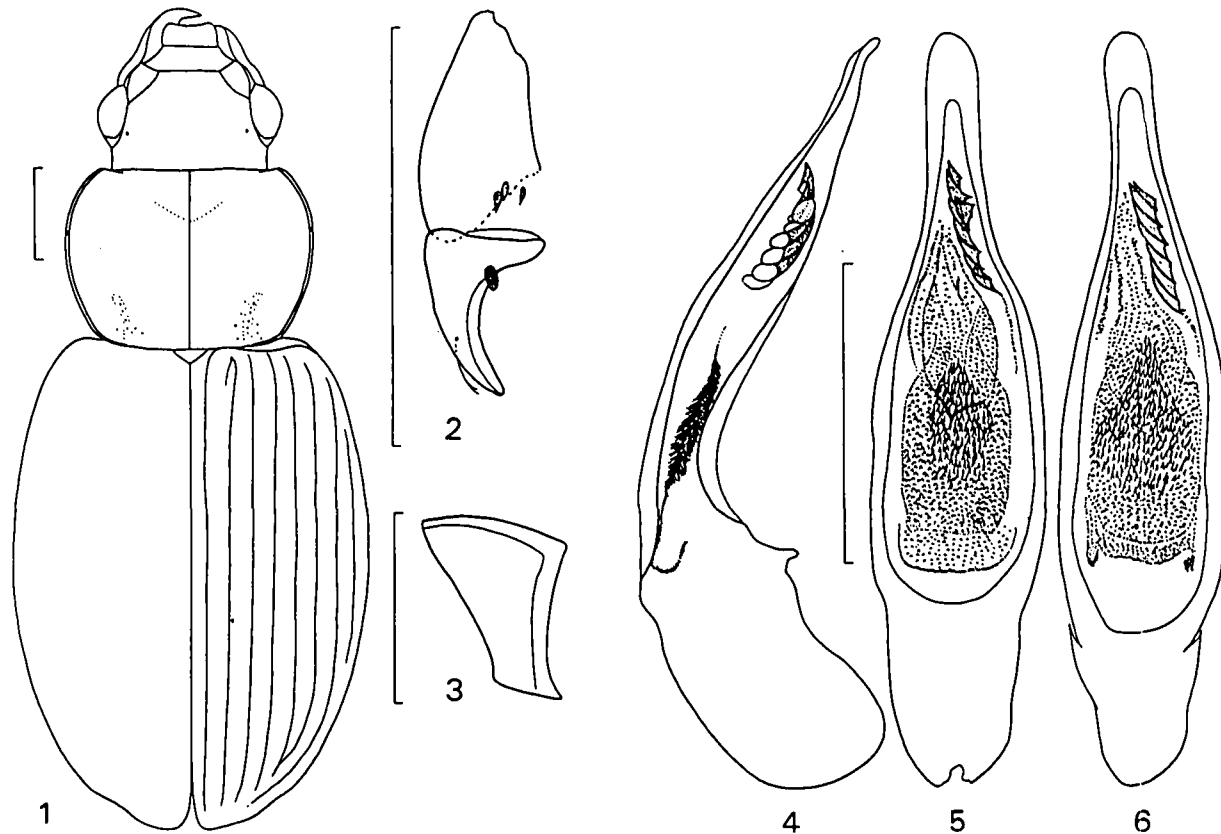
Geographical Distribution: *Bradycellus nepalensis ghoropaniensis* is known only from the Ghoropani Pass in west-central portion of the Nepal Himalaya.

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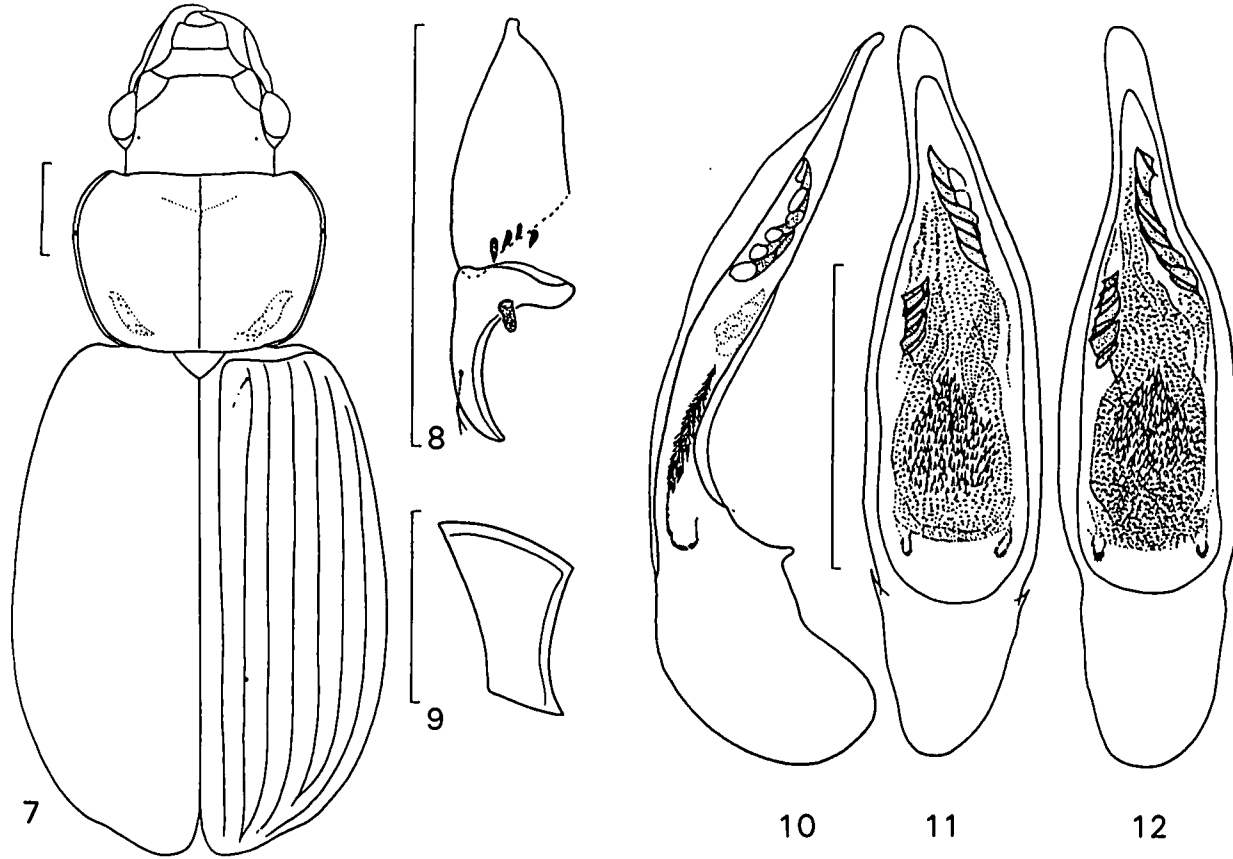
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Figs. 1-6: *Bradycellus (Tachycellus) nepalensis nepalensis* ssp. nov.: 1: general view (holotype); 2: right stylus of female (paratype from Shermathang); 3: right metepisternon (holotype); 4-6: median lobe lateral and dorsal aspect (4 and 5: holotype, 6: paratype from Phulcoki). Scales = 0,5 mm.



Figs. 7-12: *Bradycellus (Tachycellus) nepalensis ghoropaniensis* ssp. nov.: 7: general view (holotype); 8: right stylus of female (paratype); 9: right metepisternon (holotype); 10-12: median lobe lateral and dorsal aspect (10 and 11: holotype, 12: paratype). Scales = 0,5 mm.

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