Contributions to the knowledge of the eastern Palaearctic Bembidiina (Insecta, Coleoptera, Carabidae)

Edited by
Luca Toledano

Memorie del Museo Civico di Storia Naturale di Verona - 2. serie
Sezione Scienze della Vita - N. 18 - 2008
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I have been asked to write the Preface to this monographic volume of Bembidinae from the East-Palaearctic Region, published by the Natural History Museum of Verona and written by several authors, the editor and main contributor being my friend Luca Toledano. The volume is one of a series of works dedicated to the recent naturalistic research in China from the Natural History Museum of Verona. I accepted this invitation and I would like to answer a possible question which might arise: for what reason does an Italian natural history museum conduct research in such a faraway area, located in the East-Palaearctic Region, and corresponding to south-eastern China territory, where local qualified natural history museums and universities have been working for a long time?

The research began accidentally when in 1992 a group of speleologists from Verona explored some caves in Guizhou, south-eastern China. Roberto Zorzin, Curator of Geology and Palaeontology at the Museum, took part in the expedition. On that occasion, I contributed some funding in order to increase the available information on groundwater fauna from a territory almost unknown for this aspect. The biological results of that first campaign were few but, nevertheless, produced publications on new species of Diplopoda and Coleoptera Carabidae. The research could not have gone any further without cooperation with the local scientific institutions. Therefore, we initially developed joint research between the Natural History Museum of Verona and Guizhou University, and later, Guandong University. The main topic of research was the study of the karstic system, and in particular subterranean hydrography, which is exceptionally developed in the region. Italian researchers initially studied the hydrogeology with the aim of improving the exploitation subterranean water; later on, thanks to the involvement of Leonardo Latella, Zoology Curator of the Museum, research were extended to subterranean terrestrial and aquatic fauna, which was until then almost totally unknown. A side-research investigated the krenal and rithral fauna of the first reaches of the streams outflowing from the caves, for the possible use of biological data to propose biotic indices for the quality assessment of running water.

Referring specifically to the present volume, it does not deal with any material collected by the Verona scientists in China. I am not a Bembidinae taxonomist, but I know that these carabid beetles have a fundamental ecological role in riparian communities of running waters. Knowledge of this fauna, therefore, is part of the research topics of the Museum research in China, and is thus included in the publications of this institution. The volume represents an important contribution to the taxonomy of Chinese Bembidinae, and at the same time shows the value of the cooperation between the Museum and non-professional entomologists. To Dr. Luca Toledano who, with great attention and diligence, edited this volume, our sincere gratitude.

Sandro Ruffo
The Natural History Museum of Verona has conducted fifteen scientific expeditions to Central-Southern China. Several of them addressed the study of the hydrogeology and biology of subterranean environments; however, some included cooperation with colleagues working on other subjects, or in other environments.

Several researchers of the Zoology section of the Museum studied fauna from China or adjacent regions, and several expeditions were organised by the zoology curators to south-eastern China. Thus, it is now a tradition of the Natural History Museum of Verona to study these areas of the World, or at least the material collected there.

Due to its vast territory and variety of habitats and climate, China is one of the countries with the highest biodiversity of the world. The geographic position of the country, which is located at the border between the Palaearctic and Oriental zoogeographical regions, makes China an area of great interest for zoogeographical studies. In fact, palaearctic elements entered in its high plains and, not finding a clear geographical barrier such as the Himalayan range to the West, these elements sometimes moved southward following the highest mountain ranges and the humid valleys, or found a refuge in caves during the alternation of glacial and interglacial periods in the Quaternary.

The papers included in this monograph are therefore one of the products of the research co-ordinated by the Natural History Museum of Verona abroad, and contribute to the scientific knowledge of one of the most interesting areas of the world.

Leonardo Latella
Systematic notes on the Palaeartic Bembidion Latreille, 1802 (Coleoptera, Carabidae) with particular reference to the fauna of China

LUCA TOLEDANO
(Museo Civico di Storia Naturale di Verona)

ABSTRACT

This paper is a further contribution to knowledge of the complex Bembidion fauna of China, which includes species that seem to connect major lineages that, in other regions, are quite distinct from one another. An explanatory hypothesis offered here is that this complexity is due to the possible Gondwanian origin of a part of south-western China, which could be therefore a detached Gondwanan center of evolution.

The subgenus Plataphus Moliczelsky, 1864 belongs to a group of subgenera, referred to here as the "Plataphus complex", which includes some subgenera that cannot be included in either the "Bembidion complex" (subgenus strictly related to Bembidion Latreille, 1802 sensu stricto) or in the "Ocydromus complex" (subgenus strictly related to Bembidion subg. Ocydromus Clairville, 1806 sensu lato) the two main groups of subgenera of Bembidion. In order to establish the monophyly of the subgenus, some species from China and neighboring regions formerly attributed to Plataphus are here transferred to other subgenera. After this study the subgenus becomes monophyletic and a new diagnostic set of characters for Plataphus is given here as a base for future revisions of the subgenus in other regions. Some Plataphus species are described as new.

A relatively recent speciation of Plataphus in China is here hypothesized because of the slight morphological difference between some species, particularly in the male genitilia. Synonymic notes on some Palaeartic Bembidion species are given. The validity of the subgenus Terminophanes Müller-Motzfeld, 1998 is here confirmed.

Nomenclatorial acts proposed in this paper:
New taxa: Bembidion (Plataphus) rebeccanum n. sp. (China); Bembidion (Plataphus) neri n. sp. (China); Bembidion (Plataphus) rebi n. sp. (China); Bembidion (Plataphus) plutenki n. sp. (China); Bembidion (Plataphus) hebeicum n. sp. (China); Bembidion (Plataphus) lucillum nundukovii n. sp. (Russia: Usuri Region); Bembidion (Plataphus) janatai n. sp. (China); Bembidion (Plataphus) janatai yamamense n. sp. (China); Bembidion (Ocydromus s.l.) wolfgangi n. sp. (China); Bembidion (Ocydromus s.l.) pseudovale n. sp. (China); Bembidion (Ocydromus s.l.) pamiricola kunlunshanicum n. sp. (China); Bembidion (Ocydromus s.l.) kuceraei n. sp. (China); Bembidion (Ocydromus s.l.) nonaginta n. sp. (China); Bembidion (Ocydromus s.l.) joachimensiensis n. sp. (China); Bembidion (Ocydromus s.l.) kareli n. sp. (China); Bembidion (Ocydromus s.l.) keishiuuren n. sp. (China); Bembidion (Ocydromus s.l.) rapola n. sp. (China); Bembidion (Ocydromus s.l.) yuuë n. sp. (China); Bembidion (Terminophanes) zierisi n. sp. (China).


New synonyms (with junior synonym listed first): Bembidion sobrinum Boheman, 1848 syn. n. of Bembidion (Notaphocampa) foveolatum Dejean, 1831; Bembidion opulentum Nietner, 1858 syn. n. of Bembidion (Notaphocampa) foveolatum Dejean, 1831; Bembidion davidii Schuler, 1955 syn. n. of Bembidion (Princidium) coroenum Jedlicka, 1946; Bembidion subgenus Parataphus Jedlicka, 1952 syn. n. of Bembidion subgenus Blepharoptaphus Nolitizky, 1920.

Subgenus removed from synonymy: Bembidion subgenus Melomalus Casey, 1918 good subg. removed from synonymy with Bembidion subgenus Plataphus Mochalsky, 1864.

Changes of status: Bembidion (s. str.) caporicocoi Nolitizky, 1934 good sp., not subspecies of Bembidion quadriracmaculatum Linne, 1761; Bembidion altstitrium sp. semiferrugineum Kirchenhöfer, 1984 inst. n. (downgraded from Bembidion semiferrugineum Kirchenhöfer, 1984); Bembidion (Ocydromus) yunnanum sp. spectans Jedlicka, 1933 (downgraded from Bembidion (Ocydromus) spectans Jedlicka, 1933); Bembidion saxatile sp. vaillanti (Schuler, 1955), (downgraded from Bembidion vaillanti (Schuler, 1955).


Species transferred to Bembidion subgenus Melomalus Casey, 1918: B. planatum LeConte, 1848 (type species); B. atricium Gebler, 1833.


Key words: Coleoptera, Carabidae, Bembidina, Bembidion, Melomalus, Plataphus, Blepharoptaphus, Hirmnoplataphus, Jedlickion, Notaphocampa, Princidium, Ocydromus, Terminophanes, Palaeartic region, taxonomy.
Note sinonimiche sui Bembidion Latreille, 1802 palearcici (Coleoptera, Carabidae) con particolare riferimento alla fauna di Cina. Questo articolo è una nuova contributo alla conoscenza della complessa Bembidion fauna di Cina, che comprende specie che sembrano fungere da collegamento tra grandi linee evolutive che in altre regioni si presentano come evidentemente distinte tra loro. Un'ipotesi proposta qui è che questa complessità sia dovuta alla possibile origine Gondwaniana di una parte della Cina sudoccidentale, che potrebbe essere perciò un centro Gondwaniano di evoluzione speciale. Il sottogenero Platusphus Mostovzevsky, 1864 fa parte di un gruppo di sottogenere chiamato "Platusphus complex", che comprende alcuni sottogenere che non fanno parte né del "Bembidion complex" (sottogenere vicini a Bembidion Latreille, 1802 sensu strico) né dell'"Ocydromus complex", (sottogenere vicini a Bembidion subg. Ocydromus Clairville, 1806 sensu lato), i due principali gruppi di sottogenere di Bembidion. Per risalire alla monofilia del sottogene, alcune specie di Cina e regione vicine in precedenza attribuite a Platusphus sono qui trasferiti ad altri sottogenere. Dopo questo studio, il sottogene diventa monofiletico ed un nuovo insieme di caratteri per l'identificazione dei Platusphus viene qui proposto come base per future revisioni del sottogene in altre regioni. Sono qui descritte alcune nuove specie di Platusphus. A causa delle piccole differenze morfologiche tra le specie, in particolare nei genitali maschili, si ipotizza che una relativa recente speciazione di Platusphus in Cina. Sono qui proposte note sinonimie di alcune specie palearciche di Bembidion. La validità del sottogene Terminophanes Müller-Motzfeld, 1968 è confermata.

Ante nomenclatoriali proposti in questo lavoro:

Nuo seta: Bembidion (Platusphus) rebeccarum n. sp. (Cina); Bembidion (Platusphus) nerti n. sp. (Cina); Bembidion (Platusphus) rebl n. sp. (Cina); Bembidion (Platusphus) platenkoi n. sp. (Cina); Bembidion (Platusphus) hebecum n. sp. (Cina); Bembidion (Platusphus) lucillum sundukovii n. sp. (Russia: Regione dell'Ussuri); Bembidion (Platusphus) janai n. sp. (Cina); Bembidion (Platusphus) janai yammanese n. sp. (Cina); Bembidion (Ocydromus s.l.) wolgangi n. sp. (Cina); Bembidion (Ocydromus s.l.) pseudovale n. sp. (Cina); Bembidion (Ocydromus s.l.) pamirica kunitschianum n. sp. (Cina); Bembidion (Ocydromus s.l.) kacera n. sp. (Cina); Bembidion (Ocydromus s.l.) nonaginta n. sp. (Cina); Bembidion (Ocydromus s.l.) joachimchmidt n. sp. (Cina); Bembidion (Ocydromus s.l.) karel n. sp. (Cina); Bembidion (Ocydromus s.l.) heistuium n. sp. (Cina); Bembidion (Ocydromus s.l.) sapola n. sp. (Cina); Bembidion (Ocydromus s.l.) yasa n. sp. (Cina); Bembidion (Terminophanes) ziria n. sp. (Cina).

Nuove sinonimie: (da sinonimo junior elencato per primo); Bembidion sobrinum Boheman, 1848 n. sin. di Bembidion (Norphocompa) foveolatum Dejean, 1831; Bembidion opulentum Niethaler, 1838 n. sin. di Bembidion (Norphocompa) foventulatum Dejean, 1831; Bem- bidion davidi Schuler, 1955 n. sin. di Bembidion (Principium) coreanum Jedlicka, 1946; Bembidion subgenera Paratusphus Jedlčeka, 1952 n. sin. di Bembidion subgenera Blepharoplataphus Novotný 1920.

Sottogenere rimossi da sinonimia: Bembidion subgenera Melomalus Casey, 1918 (non subg. rimosso da sinonimia con Bembidion subgenera Platusphus Mostovzevsky, 1864.

Cambi di status: Bembidion (s. str.) caporosci Netolitschky, 1934b buona sp., non sottospecie di Bembidion quadrangularatum Linne, 1761; Bembidion aesturatum sp. semiferrugineum Kirchenhöfer, 1984 stat. n. (da Bembidion semiferrugineum Kirchenhöfer, 1984); Bembidion (Ocydromus) yunnanum sp. spectans Jedlicka, 1933 (da Bembidion (Ocydromus) spectans Jedlicka, 1933); Bembidion saxatile sp. vaillanti (Schuler, 1955) (da Bembidion vaillanti Schuler, 1955).


Specie trasferite a Bembidion sottogene Melomalus Casey, 1918: B. planatum LeConte, 1848 (type species); B. alticaum Gebler, 1833.


Specie attribuite al sottogene Ocydromus Clairville, 1806 sensu Kryzanovsky et al. (1995); Bembidion sertbai Jedlčeka, 1965a; Bembidion vaillanti Schuler, 1955.


Parole chiave: Coleoptera, Carabidae, Bembidina, Bembidion, Melomalus, Platusphus, Blepharoplataphus, Hirmoplataphus, Jedlčicka, Norphocampa, Principium, Ocydromus, Terminophanes, regione palearctica, taxonomia.

INTRODUCTION

This work is another attempt to reorganize classification of the worldwide genus Bembidion, Latreille, 1806, a task which was begun by Müller-Motzfeld (1985, 1988, 1998), and is a principal aim of my research (Toledano & Scialy, 1998, 2004; Toledano, 1999; 2000, 2002, 2005). Many described Bembidion species have not been formally attributed to any subgenus, many others are incertae sedis. Some subgenera until now include species that actually do not exhibit the synapomorphic characters required for membership. Their exclusion from these subgenera permits reorganization of these groups in a more consistent way. This work of reorganization requires description of some monospecific subgenera, or subgenera with few species,
because it is impossible to place the latter in subgenera that are already known. Reevaluation of subgenera formerly and incorrectly combined with others may prevent the introduction of new names, as, for example, Melolatus Casey, 1918 (see below for details).

The subtribe Bembidiina is used sensu Marggi et al. (2003). I explained previously (Toledano, 2000, 2002) the reasons to follow this supraspecific ranking. According to this treatment, most species of the subtribe (about 1700) belong to the genus Bembidion, with less than 200 additional species belonging to seven genera (Asaphidion Gozis, 1886, Phrypeus Casey, 1824, Bembidarena Erwin, 1972, Ocy Stephens, 1828, Amerizus Chaudoir, 1868, Orzolina Machado, 1987, Caecidium Ueno, 1971). Three supraspecific taxa, endemic of St. Helena island, perhaps should also be ranked as genera: Pseudophilochus Wollaston, 1877, Apteromimus Wollaston, 1877 and Endosomatium Wollaston, 1877. Ortuño & Toribio (2005) correctly raised to genus also Sinechotaxis Motschulsky, 1864. This work provides a modern systematic treatment of the Spanish fauna, and is an important step toward unification of the systematic treatment for the Bembidiina of the world. The species of Bembidiina treated in the present paper are attributed to Bembidion Latreille.

Following study of the Australian Bembidion species (Toledano, 2005) I still have many doubts about the generic independence of the intertidal species belonging to the "Cillenus Samouelle, 1819 complex" under the generic name Cillenus (Kryzhanovskij et al., 1995, Marggi et al., 2003, Lorenz, 2005, Ortuño & Toribio, 2005). The composition of this group must be investigated to determine if it is monophyletic, or if it is based on convergent similarities resulting from the strong selective influence of the intertidal environment, and thus a taxonomically invalid entity. Perhaps only genetic studies will permit deciding if the similarities of the included species are due to convergence or to common ancestry. However, even if Cillenus is monophyletic, which is not unlikely based mainly on similarity in male genitalic characters, separation at the generic level from Bembidion may be unnecessary.

The subgenus Ocydromus Clairville, 1806, dealt with here, is a large complex of species-groups that in my opinion cannot be ranked as subgenera, at least at present. Therefore, as usual, I follow Kryzhanovskij et al. (1995), and the species-groups dealt with here are intended in the same sense as in the first part of this paper (Toledano, 2000). For brevity, in the following text "Ocydromus sensu lato" means "Ocydromus sensu Kryzhanovskij et al. (1995)". To guarantee the continuity of the treatment of this taxon, as I did al-ready (Toledano, 2000), to mean the species-groups within Ocydromus sensu lato I could use here the same names as in Kryzhanovskij et al. (1995) checklist, even when their selected names are not completely correct, because they are subgeneric names (e.g. Asioephythus Visoky, 1986 group), but I prefer to designate these groups using the names of the type species referred in the past to each subgeneric name (e.g. lunatum Duftschmid, 1812 group).

**Materials and methods**

This paper is based on study of about 1200 specimens belonging to most Palaearctic subgenera.

Sources of material are the collections of the following institutions and individuals:

**CBUL** Petr Bulirsch Collection, Praha, Czech Republic

**CCOH** Jon Cooter Collection, Hereford, England

**CDMI** Stefano Dacatra Collection, San Donato Milanese (Milano), Italy

**CFPI** Sergio Facchini Collection, Piacenza, Italy

**CJPH** Miroslav Janata Collection, Praha, Czech Republic

**CKML** Rudolf Kmecbo Collection, Litovel, Czech Republic

**CKSB** Emil Kucera Collection, Sobeslav, Czech Republic

**CMCZ** Adolf Mikyska Collection, Poderady, Czech Republic

**CMWT** Werner Marggi Collection, Thun, Switzerland

**CPLS** Andrey Plutenko Collection, Smolensk, Russia

**CPUE** Andreas. Pütz Collection, Eisenhüttenstadt, Germany

**CRNS** Karel Rébl Collection, Nové Straséci, Czech Republic

**CSMI** Riccardo Scialy Collection, Milano, Italy

**CSUP** Jury Sundukov Collection, Lazo, Primorsky Region, Russia

**CTVR** Luca Toledano Collection, Verona, Italy

**CWBE** David W. Wrase Collection, Berlin, Germany

**CZPR** Vladimir Zieris Collection, Pardubice, Czech Republic

**PIME** Carlo Brivio Collection, (Pontificio Istituto Missioni Estere), Monza (Milano), Italy

For the following collections, I use the standard codes provided in Arnett, Samuelson and Nishida (1993):

**DEIC** Deutsches Entomologisches Institut, Leib-
niz-Zentrum für Agrarlandschaftsforschung, Müncheberg (Dr. Lothar Zerche)

IZA
Institute of Zoology, The Chinese Academy of Sciences, Beijing, (Prof. Yu Peiyu, Dr. Hongbin Liang)

MNHP
Musée National D’Histoire Naturelle, Paris (Dr. Thierry Deuve, Mrs. Azadeh Taghavian)

NHMB
Naturhistorisches Museum, Basel (Dr. Michel Brancucci, Dr. Eva Sprecher)

NHML
The Natural History Museum, London (Dr. Max Barclay, Dr. Conrad Gillett)

NHMW
Naturhistorisches Museum, Wien, (Dr. Manfred Jäch, Dr. Heinrich Schönmann, Dr. Harald Schillhammer)

NMP
Narodni Muzeum, Praha (Dr. Jiri Hajek, Dr. Josef Jelinek)

OXUM
Hope Entomological Collections, Oxford University Museum of Natural History (Dr. James E. Hogan)

SMNS
Staatliches Museum für Naturkunde, Stuttgart (Dr. Wolfgang Schawaller)

SOFM
National Museum of Natural History, Sofia (Dr. Borislav V. Guéorguiev)

ZMHB
Humboldt - Universität Museum für Naturkunde, Berlin (Dr. Fritz Hieke, Dr. Berndt Jaeger, Dr. Manfred Uhlig)

Some of the paratypes of CTVR will be donated to the Collection of Museo Civico di Storia Naturale di Verona, Lungadige Porta Vittoria 9, I-37129 Verona, Italy.

Measurements, made with a Leica MZ12 stereomicroscope at 25 x (body) and 100 x (phallus), are expressed in the text by these abbreviations:

- pw/pl: pronotum width / pronotum length ratio;
- pw/hw: pronotum width / head width ratio;
- el/ew: elytral length / elytral width ratio;
- ew/pw: elytral width / pronotum width ratio;

The body length was measured for card-mounted specimens, from the front margin of the clypeus to the apex of the elytra, and the antennal length from base of antennomere 1 to the apex of 11. The pronotal length in the species with lateral ends of anterior pronotal margin anteriorly protruding is measured in the middle.

Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal, attached to label-size acetate sheets and mounted on the same pins as the specimens.

Photographs were taken with a Nikon Coolpix 995 digital camera on a Leica MZ12 stereomicroscope. Drawings of the phalli were made by correcting images taken with a Nikon Coolpix 995 digital camera on the same microscope with the Adobe Photoshop® Elements 3.0 program on a Macintosh Powerbook G4 computer.

Nomenclature for the male genitalia

The nomenclature used for the male genitalia is not exactly the same I followed in my preceding papers on the Bembidiina. I prefer to use here the term "phallus" for "median lobe of aedeagus", and "endophallus" for "internal sac of aedeagus" as suggested by Prof. George Ball (personal communication). As usual, for the structures of endophallus I use simple, descriptive nomenclature waiting for a better knowledge of their function and their phylogenetic significance. Coulon (2002) proposed to unify the nomenclature for the male genitalia of the Bembidiina. His attempt is appreciable, and the paper is certainly interesting from the anatomical perspective, mainly the careful description of the structure and shape of the membranes of the endophallus. On the other hand, a study of the analogies in the sclerified structures of endophallus in different supraspecific groups and, therefore, a phylogenetic analysis on their significance, should be made considering the Bembidiina of the world (Maddison, 1993), not only of the French fauna, the same reason why I already (2000, 2002, 2005) criticized the Jeannel's (1941, 1962) systematic arrangement of the subtribe. The worldwide perspective shows species where some of the structures mentioned by the author himself are absent or, at the contrary, so strongly developed that they could suggest a different function of these organs (e.g., endophallus of Americus subg. Tiruka Androwes, 1935 and Bembidion subg. Antiperyphantes Jeannel, 1962). As I already noticed (2005) the western Palaearctic Bembidion fauna seems to derive from a series of relatively recent invasions of well distinct lineages from south and east, therefore a better biogeographical area where to study this matter could be the Southwestern China, which seems to be an important dispersal point for the biodiversity of the subtribe, together with the fauna of the southern hemisphere, important too from this point of view, at least with reference to the Bembidion s.str. complex (Toledano, 2005), particularly the Southamerican and Australian faunae.

To guarantee the continuity of the treatment of this matter, as in my previously published papers, two terms are still intended here in a divergent sense from Coulon's (2002) paper: "ventral" refers here to that margin of the phallus which, as a rule, is concave or almost linear, and continues the ventral body surface during copulation (the lower part in the drawings of phalli (Figs. 3-4, 16-25, 33-38, 47-53, 60-64) in this paper, and "dorsal" for
the part, normally convex, which marks the opposite side of the phallus (the upper part of the same drawings).

The term “metasternal process”, used in most papers on the Bembidinida to indicate the ventral appendix between mesocoxae, according Lawrence et al. (1999) and Beutel et al. (2005) is incorrect and it will be replaced in this paper by “metaventral process” (Dr. Manfred Jäch, Naturhistorisches Museum Wien, personal communication).

Genus Bembidion Latreille, 1806

Bembidion subgen. Braceteon Bedel, 1879

B. conicolle Motschulsky, 1844
=B. conicolle Motschulsky, 1850
=baikalousuricium Netolitzky, 1942

This is the first citation for China.

Examined material:
2 exx., China, Jilin, Changbaishan (mountain) 42°0′N, 128°1′E, 17.VII.1987 (IZAS, CTVR); 1♀, China, Jilin Prov., Bai He, 750-800m, 42°24′08″N 128°06′43″, 4.VI.2004, Stream gravel (CTVR).

Bembidion Latreille, 1802 sensu stricto

B. (Bembidion) caporiacoi Netolitzky, 1934b
Bembidion quadrirmaculatum caporiacoi Netolitzky

Having studied more specimens of this taxon after my revision of its Palearctic species (Toledano 1999), I discovered that the difference in apex of the phallus between B. q. caporiacoi and the complex of subspecies of B. quadrirmaculatum Linné is constant. In fact, the apex of B. caporiacoi is constantly more elongated before the apical hook than in other species of the subgenus, and it seems to me that in a group like this, with slight taxonomic differences in the male genitalia, such a degree of difference may be interpreted as specific.

Bembidion subgen. Notaphocampa Netolitzky, 1914b
=Bembidion subgen. Notaphomimus Netolitzky, 1931

B. (Notaphocampa) foveolatum Dejean, 1831
=B. sobrinum Boheman, 1848 n. syn.
= B. opulentum Nietner, 1858 n. syn.

Based on examination of additional material, I confirmed my suspicion (Toledano, 2005) that the male genitalia of specimens of B. foveolatum Dejean (Southern Africa), B. sobrinum Boheman (Southern Africa) and B. opulentum Nietner (Southeastern Asia) are identical. I conclude, therefore, that these nominate taxa are conspecific. The senior, valid, name is B. foveolatum.

Bembidion subgen. Princidium Motschulsky, 1864

B. (Princidium) coreanum Jedlička, 1946
=Acetidium davidii Schuler, 1955 n. syn.

The study of the type of B. david Schuler (MNHP) and B. coreanum Jedlička (NMPC) revealed that both species are conspecific. The senior, valid name is B. (Princidium) coreanum Jedlička.

The “Plataphus Motschulsky, 1864 complex”

There are two main groups of subgenera in the genus Bembidion Latreille, recognized by most authors by the position of the discal elytral setigerous punctures: they are clearly in the third interval in the complex of subgenera near the subgenus Bembidion Latreille sensu stricto, in the third interval but very near stria 3 in the complex of subgenera near the subgenus Ocydromus Clairville sensu lato. A third group of subgenera belonging neither to the Ocydromus complex nor to the Bembidion complex is the “Plataphus complex”, the “Plataphus - Untergattungsgruppe” of Schmidt (2003). These subgenera share with the Ocydromus complex the discal elytral setigerous punctures in the third interval, very near stria 3. Although the general body shape indicates a systematic position closer to the Ocydromus complex than to the Bembidion complex, the differences in the structure of the male genitalia, characterized by endophallus extremely simple in the Plataphus complex (much more complicated in the Ocydromus complex), suggests that the Plataphus complex is independent from both groups.

According to Schmidt (2003) this complex includes the subgenera Plataphus Motschulsky, Plataphodes Ganglbauer, 1892 Blepharoplatus Netolitzky, 1920 Triplataphus Netolitzky, 1914, Peryphopilla Netolitzky, 1942, Hirmoplatus Netolitzky, 1943 and Tibeplataphus Schmidt, 2003. This complex includes also the subgenera Auresplataphus Netolitzky, 1942, Bembidromus Toledano, 2000, Jedlickion new subgenus (see below) and possibly Bembidionetolitzkya Strand, 1929.
Bembidion subgenus Plataphus Motschulsky, 1864
(Type species: Bembidion prasinum Duftschmid, 1812)
  = Micromelomolus Casey, 1918
  = Trachelonepha Casey, 1918

THE SPECIES OF SUBGENUS PLATAPHUS MOTSCHULSKY
FROM CHINA AND NEIGHBOURING REGIONS

This faunal treatment is a contribution to a formal
revision of Plataphus, which will require study of the en-
tire complex of species in the Holarctic Region. Some
species are Holarctic, therefore, their previously unre-
ported presence in a local fauna could suggest that they
are new taxa, while actually they are described species
showing a distribution wider than had been known. To
attempt to prevent proposing names destined for fu-
ture synonymy, I compared the Chinese species with
many Japanese, Sibirian and North American species.
Because they did not match the known species available
to me, and because the Chinese Bembidion fauna shows
a strong tendency to differentiation and endemism, I
have described them here as new.

Systematic notes

The present composition of the subgenus Plataphus
is too extensive for it to be a monophyletic group. The
aim of this present treatment is to find for some species
from China and neighbouring regions at present known
as Plataphus a more correct systematic position within
other subgenera, in order to establish the monophyly
of Plataphus. Speciation within the subgenus seems to
be relatively recent, because the taxonomic difference
between some species is very slight, particularly in the
male genitalia.

Most authors ranked Plataphus as a subgenus of
Bembidion. In contrast, and as he did for most supraspe-
cific groups of the Bembidiina, Jeanell (1941) ranked
Plataphus, as a genus, based on knowledge of the sin-
gle Western Palearctic species of the subgenus, Bem-
bidion prasinum Duftschmid, 1812, which exhibits ex-
ternal and internal characters extremely different from
the other Bembidiina of the same region. Studying the
fauna of a larger area, as for example the Palearctic Re-
gion, the differences between several subgenera of Bem-
bidion become less sharp, including Plataphus. Gener-
ic independence for these groups cannot be accepted,
based on known morphological features. Perhaps mo-
lecular features will offer the basis for generic recogni-
tion of these groups.

In my provisional checklist of the Chinese Bem-
bidiina (Toledano, 2000) I included in the subgenus
Plataphus four species: B. asiaticum Jedlička, 1965c, B.
hamanense Jedlička, 1933, B. gebleri persuasum Netolitz-
ky, 1938 and B. speciense Jedlička, 1932. These Eastern
Palearctic species differ too much from one another to
belong to the same subgenus. A restudy of these species
requires transfer to other subgenera of some of these
species, correcting the mistakes reported in my (2000)
provisional checklist. Some specimens assigned errone-
ously to B. asiaticum from Southwestern China are here
assigned to B. rehli n. sp.

Three species, B. hingstoni Andrews, 1930, B. nivi-
cola Andrews, 1923b and B. persephone Andrews,
1926, already cited for Tibet (Andrews, 1935), acci-
dentially omitted from my checklist and formerly at-
tributed to Plataphus, were correctly expelled from
Plataphus by Schmidt (2003) and attributed to an in-
dependent subgenus, Tibetoplataphas Schmidt, 2003. A
further study with the description of some new species
strictly related to the hingstoni group and some other
strictly related to B. hamanense (Toledano & Schmidt,
2008) reveals that probably Tibetoplataphas is a syno-
nym of Bembidionetolitzky.

B. heyrovskyi Jedlička was included provisionally in
Parataphus Jedlička, 1932, pending better knowledge of
its proper systematic position (Toledano, 2000), fol-
lowing Jedlička (1965) and Lorenz (1998). In contrast,
Netolitzky (1942-43) and Marggi et al. (2003) placed
this species in Plataphus. Examination of the type
(NMPC) and a paratype (NHMW) of B. heyrovskyi re-
vealed that this species belongs to the subgenus Blepha-
roplataphas Netolitzky as indicated by distinct small
setigerous punctures ventrally in the abdominal ster-
na exhibited by these types. No doubt these pores bore
short supernumerary setae that were lost through some
form of abrasion. The setose condition is a diagnostic
feature of Blepharoplataphas. Furthermore, details of
the male genitalia confirm assignment of B. heyrovskyi
to that subgenus. Therefore, Parataphus Jedlička is ju-
inor synonym of Blepharoplataphas Netolitzky and not
of Plataphus Motschulsky.

Also, inclusion of Bembidion speciense Jedlička in the
subgenus Plataphus was incorrect. I placed it thus on-
ly because the species was included by Jedlička (1965)
in the key to the Oriental Plataphus species, but ex-
amination of the type (NMPC) and a few additional
specimens, confirms that the species belongs elsewhere.
This species shares many external characters with some
known subgenera, but the complex of the external char-
acters and the male genitalia are unique. Therefore I de-
scribe below a monospecific subgenus for this species.

Plataphus shows many elements in common with
the subgenus Bembidionetolitzky, a Palearctic subge-
Figs. 1-2 - Habitus of: 1) Bembidion (Melomalus) altaicum Gebler, specimen from Ussuri Region, Sikhote-Alin mt. Ternej (CTVR); 2) B. (M.) planatum LeConte, specimen from USA, Washington, Olympic Peninsula, Hoh River Valley (CTVR). Scale = 1mm.
Figs. 3-4 - Phallus of: 3) Bembidion (Melomalus) altaicum Gebler, specimen from Dzungharia, Kota river (CTVR); 4) B. (M.) planatum LeConte, specimen from USA, Washington, Olympic Peninsula, Hoh River Valley (CTVR). Scale = 1mm.
nus, more westerly in distribution, but present also in the Eastern Palaearctic Region with North Indian and Nepalese species (B. cimmerium Andrewes, 1922, B. livens Andrewes, 1930, B. margittii Schmidt, 2004, B. milosfassati Schmidt, 2004, B. ornithorn Andrewes, 1922, B. satanas Andrews, 1924 and B. toledanoi Schmidt, 2004) and some new species from Southwestern China (Toledano & Schmidt, 2008). The most important external character used at present to separate these subgenera is the metaventral process, bordered in Bembidionetolitzkyia, unbordered in Plataphus. B. hamanense Jedlicka, 1933 formerly attributed to Plataphus (Jedlicka, 1965) actually shows a bordered metaventral process. This character, together with the external habitus and structure of the male genitalia led Schmidt (2004) to attribute correctly this species to the subgenus Bembidionetolitzkyia.

Another systematic problem in attempting to establish the monophyly of Plataphus involves B. altaicum Gebler, 1833 (Figs. 1, 3), at present attributed to the subgenus Plataphus. Although its metaventral process is unbordered, in my opinion it does not belong to this subgenus. I treat this species even though it is not yet known from China because its presence in the Ussuri region of Russia leads me to believe that it could be possible to find it at least in the northern Chinese provinces of Heilongjiang and Jilin.

A northern Nearctic species, B. planatum LeConte, 1848 (Figs. 2, 4), type species of the subgenus Melomalus Casey, 1918 has been attributed to Plataphus Motschulsky by Lindroth (1963). The comparison of many specimens of this taxon with B. altaicum revealed the close systematic relationships between these species, based on similar external habitus and male genitalia. B. altaicum and B. planatum show some characters not typical for the subgenus Plataphus as at present I delimit it.

Schmidt (2003) already dealt with B. altaicum showing that the similarities of the endophallus of this last with the Tibetanaplaphus species are plesiomorphic, and do not permit inclusion of the species within that subgenus. Because B. altaicum and B. planatum are consubgeneric and are not members of any presently recognized subgenus, a name must be proposed for a taxon of that rank. Such a name, as noted above, is Melomalus Casey, which I hereby remove from synonymy with Plataphus. The synapomorphies of Melomalus in the male genitalia are the very simple sclerites of the inner sac and the external shape different from Plataphus, while those in the habitus are the large size, the elytral striae sulcate-puncrate, the structure of the apical stria (long, connected with stria 5 and very deep in its whole length, almost reaching the border of the elytral apex) and the metaventral process unbordered. With the attribution of Bembidion altaicum to Melomalus, this subgenus becomes Holarctic. B. planatum and B. altaicum probably are sister species.

Without B. hamanense, B. altaicum, B. speciense, B. heyrovskyi, and the Tibetanaplaphus species, the remaining Palaearctic species of Plataphus, together with the new Plataphus species herewith described, form a homogeneous complex of relatively small species giving the impression of a monophyletic group. The interspecific differences in the male genitalia of the Plataphus species are very slight, and it is difficult to distinguish some species based on examination of this structure, mainly in the small species of the group. The phallos is narrow, with basal opening slightly extended also in the left side, as correctly pointed out by Jeannel (1941), and apex securesform. This last characteristic is due to the fact that the ostium of the phallus is broadly extended on the dorsal side and in correspondence with it, the dorsal border is markedly concave, apically isolating a short portion (about the anterior fifth) which is convex, securesform. The endophallus shows as a rule a pair of small sclerites, with the more developed and sclerotized one at the right side. This sclerite is more or less cylindrical, with a small process in the apical end which is less sclerotized and bent to the ventral side or to the base of the phallus. The second sclerite, slightly sclerotized, covers the basal part of the other one if seen from the left side of the phallus.

The Plataphus species show as a rule the following: a pronotum relatively small, rectangular, distinctly narrower than the elytra; rather square elytral humeri and a complete striaion of the elytra; sulcate striae; and strial punctuation is in most specimens almost invisible.

Elytral striaion and male genitalia are useful in separating Bembidionetolitzkyia, Tibetanaplaphus and Melomalus from Plataphus. In the first three subgenera, the elytral striae are distinctly punctate, whereas they are deeply sulcate and virtually impunctate in Plataphus. The male genitalia of Plataphus show the typical shape described above, whereas those of Bembidionetolitzkyia, Melomalus and Tibetanaplaphus species show as a rule a phallos with more thickened body and pointed apex.

An undescribed Chinese taxon near B. (Tibetaplaphus) niwicola shows a variable development of the border of the metaventral process: present, but extremely reduced in most specimens; almost absent from a few specimens. Such variability shows that this character is not useful for defining the Plataphus complex of subgenera. Nonetheless, within this complex of the Bembidiina, in Plataphus and Melomalus, the metaventral process is clearly and constantly unbordered. Therefore,
this character is useful in distinguishing at least some of the included subgenera. However, its innate variability shows that bordering (or lack thereof) of the metaventral process is unlikely to be of much value in phylogenetic analysis. Most species of subgenus Plataphus sen- su novo are very similar to each other in the exoskeletal characters and in the male genitalia. Only a revision of the Holarctic species can define clearly this complex of species; anyway, the present work is a first attempt to reorganize knowledge of the group in order to permit in the future the required extensive revision.

Affinities. The pronotal shape and microsculpture of the worldwide subgenus Notaphus Stephens, 1828 is similar to that of Plataphus, but this similarity seems to result from the sharing of a plesiomorphic character. The distinguishing characters, i.e., the position of the discal elytral setigerous punctures (almost in the middle of the third interval in Notaphus, near stria 3 in Plataphus) and the typical structure and distribution of elytral spots of Notaphus (always absent from Plataphus), together with the different structure of the male genitalia, are postulated to be apomorphic. Furthermore, Plataphus lacks a character of the endopal- lus ("sclerite Notaphus", Toledano, 2003) typical for the world species of Notaphus. A group of species closely related to Plataphus is Platanodorus. This Holarctic subgenus groups many species sharing most external and genital characters with Plataphus, and easy to recognize from this last by the basal elytral margin, simply ex- tended to the basal end of stria 5 in all Platanodorus species, reaching the basal end of stria 4 with a rectilinear prolongation of the margin from the basal end of stria 5 in Platanodorus. The male genitalia of Platanodorus as a rule lack the secundiform apex of phallus, although they share the simple structure of endophallus with all sub- genera of Plataphus complex.

Schmidt (2003) in the "Plataphus - Untergartungs- gruppe" mentions the subgenus Triporus Andrews, 1921 which more probably is consubgeneric with Tricho- plataphus Netolitzky (Kryzanovskij et al., 1995; Lorenz, 1998, 2003; Toledano, 2000; Marggi et al., 2003), and correctly points out that also the group of subgenera characterized by the supernumerary setae on the abdomi- nal sterna belongs to the Plataphus complex.

KEY TO THE CHINESE SPECIES OF BEMBIDION SUBGENUS PLATAPHUS

1 Legs entirely red; Hubei, Shaanxi, Sichuan .................. rebeckianum n. sp.
   - Legs bicolored, mostly red, but at least base of fem-
ora darker .............................................. 2

2 Elytra red-brown, elytra flat, parallel and elongate (el/ew = 1.53 to 1.64); antennae elongate (tl/al =1.63 to 1.86) ............................................. 3
   - Elytra darker, metallic, more or less convex, less parallel and elongate (el/ew = 1.40 to 1.50); antennomes short (tl/al = 1.70 to 2.00) .................... 4

3 Antennomes more elongate (tl/al = 1.63 to 1.66), apex of phallus as in Fig. 21; Usurini, probably in Heilongjiang and Jilin ... lucidum sundukovii n. ssp.
   - Antennomes shorter (tl/al = 1.72 to 1.86), apex of phallus as in Fig. 20; Hebei, Nei Mongol, Beijing Shi ........................................... hebeicum n. sp.

4 Antennomere 1 black .................................... 5
   - Antennomere 1 red to brown .......................... 8

5 Smaller (length 3.08 to 3.68 mm); elytra flat; Sichuan, Qinghai, E Tibet ................. reblii n. sp.
   - Larger (length 3.88 to 4.76 mm); elytra convex .. 6

6 Larger (length 4.32 to 4.76 mm); elytra markedly convex; pronotum less transverse (pw/pl = 1.41 to 1.45); Jilin, Heilongjiang .................... ..... ......................... gebleri ssp. persuasum Netolitzky
   - Smaller (length 3.88 to 4.14 mm); elytra less convex; pronotum more transverse (pw/pl = 1.50 to 1.55); Sichuan, Yunnan ......................... 7

7 Elytral microsculpture with sculpticells markedly transverse, narrow and flat; Sichuan .................. ........................................................................ janatii n. sp.
   - Elytral microsculpture less transverse, sculpticells of some individuals almost isodiametric and convex; Yunnan .................. janatii yamnenense n. ssp.

8 Pronotal lateral margins more sinuate before poste- rolateral angles (Fig. 6b) ......................... neri n.sp
   - Pronotal lateral margins less sinuate before postero- lateral angles (Fig. 8b) ................... plutenkoi n. sp.

B. (Plataphus) rebeckianum n. sp.
(Figs. 5, 16)

Diagnosis
Small Chinese Plataphus species with red legs.

Type locality
China, W Hubei, Dashennongjia mounts, 31.5N 110.3E.

Type series
Holotype, ♂ , "China, W Hubei, 17.VI.2000, Dashen- nongjia mts., 31.5N 110.3E, 2400m" (CTVR); paratypes: 3 ♀ , same date and locality of the holotype (CTVR);
Figs. 5-10 - Habitus of: 5) *Bembidion (Plataphus) rebeccaum* n. sp., Paratype from China, Hubei, Dashennongjia mts., 31.5°N, 110.3°E (CTVR); 6) *B. (P) norii* n. sp., Holotype (CTVR) (Fig. 6b: detail of left postero-lateral pronotal angle of the same specimen); 7) *B. (P) robli* n. sp., Holotype (CTVR); 8) *B. (Plataphus) plutenski* n. sp., Paratype from China, Hubei, Dashennongjia mts., 31.5°N, 110.3°E (CTVR) (Fig. 8b: detail of left postero-lateral pronotal angle of the same specimen); 9) *B. (P) kebeicum* n. sp., Holotype (CTVR); 10) *B. (P) lucisium sundukovi* n. sp., Paratype from Usuri, Tigorvij (CTVR). Scale = 1 mm.
3 ♂, 8 ♀, "China, W Hubei, 10-14.VI.2002, Dashenongxia mts., 31.5N 110.3E, 2100-2900m" (CTVR); 1 ♂, "China, W-Hubei, 21-24.VI. 2001, Dashennongxia mts., 2000-3000m, 31.5N 110.3E" (CRNS); 1 ♂, 2 ♀, "China, W-Hubei, 21-24.VI. 2001, Dashennongxia mts., 2500-3000m, 31.5N 110.3E" (CTVR); 1 ♀, "C China: SW-Shaanxi, Qinling mts. 2600m, Houzhenzi, 7.7.1996" (CJPH); 1♂, "China: Sichuan, Mr. Emei, 600-1050m, 5.-19.5.1989" (CTVR); 1 ♀, "China, N Sichuan, Micang Shan, 1300-1400m, Daba, 32°40'N 106°55'E, 5-6.VI.2007" (CTVR).

Derivatio nominis

The species is dedicated to my beloved wife Rebecca, as a celebration for her obtaining her degree in Architecture.

Description

Length 3.44 to 4.00 mm.

Colour. Head and pronotum metallic green, matt. Elytra reddish with metallic green reflections, some specimens almost completely metallic green, all specimens with at least a faint reddish lustre. Body piceous-black. Antennae bicolor: antennomere 1, and base of 2-4 red, remaining surfaces infuscated. Legs red.

Head with frontal furrows parallel. Eyes convex.

Pronotum transverse (pw/pl = 1.38 to 1.41) (ew/pw = 1.57 to 1.58) slightly sinuate at lateral margins near the right posterolateral angles. Basal margin almost rectilinear, basal foveae square, flat with evident and long laterobasal carina. Median longitudinal impression evidently impressed, anterior transverse line shallow. Basal margin slightly wider than the anterior one.

Elytra (el/ew = 1.40 to 1.43) oval, with humeri slightly rounded. Maximum width slightly posterior middle. Striae 1 to 7 deeply sulcate, intervals convex. Discal setigerous punctures two on interval 3, adjoining stria 3, almost on stria. Parascutellar stria long, apical stria connected with stria 5.

Microsculpture. Head and pronotum with isodiametric mesh pattern, sculpticells each with surface convex. Elytra with mesh pattern transverse, sculpticells flat.

Male genitalia (Fig. 16). Phallus with apex elongate, broadly thickened ventrally.

Female genitalia. Spermatheca simple with long, coiled duct, annulus receptaculi markedly sclerotized and reservoir almost cylindrical, narrow, distinctly sclerotized, apparently divided into several cavities.

Note

In the other Chinese Plataphasis species herein described, the female genitalia are similar, and the slight variations in shape of spermathecal reservoir and duct and in the sclerotization of the annulus receptaculi seem not to have a great importance in the specific diagnosis.

Geographical distribution

Known from the Chinese Provinces of Hubei, Shaanxi, and Sichuan.

Affinities

In body shape adults of this species are more similar to those of B. nerii n. sp., while the phallus shows closer similarities to B. insucatipenne Netolitzky and B. platenkoi n. sp.

B. (Plataphasis) nerii n. sp.

(Figs. 6, 6b, 17)

Diagnosis

Chinese Plataphasis species from Hubei with lateral margins of pronotum evidently sinuate anterior to but near the right posterolateral angles, antennomere 1 brown, legs bicolor, most articles brown with femora dark.

Type locality

China, W Hubei, Dashenongxia mts., 31.5N 110.3E.

Type series

Holotype, ♂, "China, W Hubei, 10-14.VI.2002, Dashenongxia mts., 31.5N 110.3E, 2100-2900m" (CTVR); paratypes: 11 ♂, 1 ♂, same date and locality as the holotype (CTVR); 2 ♂, 3 ♀, "China W Hubei, 31.5N 110.3E, 2-3km Dashenongxia mts., 22.6.2001" (CRNS, CTVR); 1♀, "China, W-Hubei, 21-24.VI. 2001, Dashenongxia mts., 2000-3000m, 31.5N 110.3E" (CRNS); 2♂♂, 5♀♀ "China, W-Hubei, 21-24.VI. 2001, Dashenongxia mts., 2500-3000m, 31.5N 110.3E" (CTVR).

Derivatio nominis

The species is dedicated to my friend Paolo Neri, skilled Italian specialist in the Palaearctic Bembidiina.

Description

Length 3.54 to 4.50 mm. Body completely dark metallic green. Elytra with a faint brownish lustre. Antennae bicolor: antennomere 1 reddish-brown or brown, antennomeres 2-11 infuscated. Legs bicolor: femora dark, rest of legs, including knees, reddish-brown.
Head slightly narrower than pronotum, frontal furrows parallel and deep. Eyes convex.

Pronotum (Fig. 6b) transverse (pw/pl = 1.32 to 1.41) (ew/pw = 1.58 to 1.67) with lateral margins more sinuate than in the other Chinese species and rectilinear, posterior part of the side near posteralateral angles long about 1/6 of pronotal length. Basal foveate square, rugose, laterobasal carina long, median longitudinal impression and anterior transverse impression shallow. Base rugose, basal margin almost rectilinear. Posteralateral pronotal angle right. Basal margin slightly wider than anterior margin.

Elytra rather elongate (el/ew = 1.43 to 1.48) with square humeri and rounded lateral margins. Striae 1-7 evident and sulcate, shallower than in the preceding species. Parascutellar stria long, apical stria connected in most specimens with apical confluence of striae 5 and 6, in others with stria 5, when not confluent with stria 6. Discal setigerous punctures two on interval 3, adjoining stria 3.

Microsculpture. Head and pronotum with mesh pattern isodiametric, each sculpticell with surface convex. Elytra with mesh pattern transverse, sculpticells narrow, transverse and flat.

Male genitalia (Fig. 17). Phallos with apex rounded with a sharp contouring thickening.

**Geographical Distribution**
Known from the Chinese Province of Hubei.

**Affinities**
The male genitalia, almost identical to those of *B. janata*, suggest that both species could be derived from a common ancestor, but, as I already pointed out, the level of interspecific divergence in *Plataphus* is as a rule extremely low. Therefore, an extreme similarity in the male genitalia does not necessarily need to be regarded in the same way as in other subgenera of *Bembidion*. Perhaps only a genetically-based study will make possible a definitive settlement of this group.

*B. (Plataphus) rehli* n. sp.
(Figs. 7, 18)

**Diagnosis**
Small Chinese *Plataphus* species with antennomere 1 black, legs as a rule dark, lateral margins of pronotum slightly sinuate anterad the right posterolateral angles.

**Type locality**
China-NW Sichuan, 32.30N 98.25E, pass 20 km S Qagca.

**Type series**
Holotype, ♂, “China-NW Sichuan, 14-16.VII.1998, 32.30N 98.25E, pass 20 km S Qagca, alpine meadows, ca 4300m” (CTVR); paratypes: 5 ♂ 3 ♀, 8 ♀ 2, same date and locality as the holotype (CTVR); 1♂, “China-NW Sichuan, 17-18.7.1995, 32.30N 98.25E, pass 20 km S Qagca, alpine meadow 4100m” (CTVR); 1♂ 1♀, “China NW Sichuan, 14/7.1991, 33.09N 97.30E, pass 15 km E Xiwu, alpine meadow 4000m” (CTVR); 1♂, “China W Sichuan, road Luhuo-Setart, pass 40 km N Of Luhuo, 31°42’N 10°47’E, ca 4200m, alpine meadow, 22.VII.1997” (CTVR); 1♀, “China W Sichuan 4000m, road Luhuo-Setart, 40 km N Luhuo, 31°41’N, 100°44’E, thuya and picea forest, 23.VII.1997” (CTVR); 10 ♂ 6 ♀, 13 ♀ 2, “China NW Sichuan, 3700m, 32.59N 98.06E, Serxu env. alpine meadow, 3-15/7.1995” (CTVR); 1♂, “China: W Sichuan, 3500-4300m, Temple 35 km N Sabe, 29°40’N 101°20’E, 13-14.VII.1998” (CMWT); 1♂ 1♀, “China, W-Sichuan, Ganzi Tibetan Aut. Pref., Daxue Shan, brook bank, W Tseto-La Pass, 3656m, 30.04.24N, 101.45.63E, 25.VI.1999” (CPUE); 5 ♀ 1♂, 4♂ 2♀, “China S Qinghai, 7/7/1995, 32.20N 96.33E, pass 30 km N Nanqen, alpine meadow 4200m” (CTVR); 5♂ 1♀ 4♀ 1♂, “China, W Sichuan, 3800m, 10 km S Hekou (Yajiang), N 30°00’49”E, E 101°16’37”W, 15.6.2007” (CJPH, CTVR); 2♂ 6♀, “China S Qinghai, 11/7/1995, 32.53N 96.41E, 10 km E Doramarkog pass 4200m alp. meadow” (CTVR); 2♀, “China. Qinghai or, Amnemaquen Mts., Huashihia, 4400m, 23-30.vi.1998” (CRNS); 4♂ 5♀, “China E-Qinghai (Gonghe), mts. 20 km N Doatangan, 36.32N/101.04E, ca 4200m, alp. meadow/scree/grassland, 3.II.1995” (CJPH, CTVR); 2♂ 1♀, “E Tibet, road Toba - Jomda, pass 50 km E Toba, 31°19’N, 98°05’E, 4200m, alpine meadow, 17.VII.1997” (CTVR).

**Derivatio nominis**
This species was named in honour of my friend Karel Rébl of Nove Strasec, Czech Republic, another skilled specialist in Bembidina, who kindly gave me a part of the type series for study. This species is dedicated to him.

**Description**
Length 3.08 to 3.68 mm.


Head small with frontal furrows rather deep, slightly convergent. Eyes rather flat.

Pronotum markedly transverse (pw/pl = 1.47 to
Figs. 11-15 - Habitus of: 11) Bembidion (Plataphus) janatai n. sp., Paratype from China, W-Sichuan, Erliang Shan, Pass 2800m, Tianquan Co., Yilan Pref. (CPUE); 12) B. (P) janatai yemenense n. sp., Holotype (CTVR); 13) B. (P) gebleri perssaurum Netolitzky, specimen from Ussuri, Tigrrovyj (CTVR); 14) B. (Blephareplataphus) beyovskij Jedlička, Paratype (NHMW); 15) B. (Jedlickion) speciense Jedlička, specimen from China, Sichuan, Mt. Emei (CTVR). Scale = 1mm.
1.50) (ew/pw = 1.49 to 1.52), with lateral margins slightly sinuate, posterolateral angles right, each bearing a seta, basal margin almost rectilinear, with lateral parts slightly more advanced than median part. Basal foveae square, with surface rugose, and with laterobasal carina; median longitudinal impression rather deep, anterior transverse impression shallow. Basal margin almost as long as anterior margin.

Elytra (el/ew = 1.43 to 1.48) with clearly developed humeri, striae sulcate, 1 to 6 deep, 7 slightly shallower. Parascutellar stria long, apical stria as a rule extended to end of stria 5. Discal setigerous punctures two, on interval 3, adjoining stria 3.

Microsculpture. Head and pronotum with mesh pattern isodiametric, each sculpticell with surface convex. Elytra with mesh pattern slightly more transverse than in the two preceding species, sculpticells flat.

Male genitalia (Fig. 18). Phallos with apex pointed, apical thickening extremely narrow, almost absent.

Intraspecific variability

A single male specimen from S Qinghai, 32.53N 96.41E, 10 km E Doramarkog Pass, at 4200m (CTVR) is evidently smaller than the remaining examined specimens (2.74 mm). Externally this specimen shows slight differences, colours lighter than in the others, but, since the male genitalia are identical to those of the other specimens of B. reblii, I refrain from the description of a new taxon, considering this single specimen to be aberrant.

Geographical distribution

Known from the southwestern Chinese provinces of Sichuan, Qinghai, and Tibet.

B. (Plataphus) plutenkoi n. sp.
(Figs. 8, 8b, 19)

Diagnosis

Chinese Plataphus dark metallic green with rather elongate elytra, posterolateral pronotal angles slightly obtuse, the lateral margins slightly sinuate near posterolateral angles and antennomere 1 red to brown.

Type locality

China, W Hubei, Dashennongjia mtn., 31.5N 110.3E 2400m.

Type series

Holotype, ♂, "China, W Hubei, 17.V.2000, Dashennongjia mtn., 31.5N 110.3E 2400m" (CTVR); paratypes: 6♂ 6♀, same date and locality as the holotype (CTVR); 1♂ 2♀, "China, W Hubei, 10-14.VI.2002, Dashennongjia mtns., 31.5N 110.3E, 2100-2900m" (CTVR); 3♂ 5♀, "China W Hubei, Dashennongjia mtns., 2000-3000m, 31.5N 110.3E, 21.24.VI.2001" (CRNS, CKML, CTVR); 5♂ 7♀, "China, W-Hubei, 21.24.VI.2001, Dashennongjia mtns., 2500-3000m, 31.5N 110.3E (CTVR); 4♂ 2♀, "China (Shaanxi) Qinqing Shan near bank above Houzhenzi, 115 km WSW Xi’an, 1450m, 33°50′N/107°47′E (coarse gravel bank with plants and leaves), 4.VII.2001" (CWBE, CTVR); 11♂ 13♀, "China - Shaanxi, Tabashan Range, 1900m, Houzhenzi vill. env., 33°53′N 107°49′E, 12-25.10.1999" (CPLS, CTVR); 1♂, "China W Hubei, 31.5N 110.3E, 2-3 km Dashennongjia mtn., 22.6.2001" (CRNS).

Derivatio nominis

The specific epithet is a patronym, based on the surname of Mr. Andrey Plutenko of Smolensk, Russia, who kindly gave me a part of the type series for study, and to whom this species is dedicated.

Description

Length 3.72 to 4.40 mm.

Colour. Most of surface metallic black with faint greenish reflections; middle of pronotal base brownish. Antennae bicolor: antennomere 1 red to brown, 2-11 darker. Legs bicolor, brown, except for piceous basal 4/5 of femora.

Head narrower than pronotum, with frontal furrows parallel. Eyes normally convex. Antennomeres rather elongate (tl/al = 1.77 to 1.94).

Pronotum (Fig. 8b) transverse (pw/pl = 1.35 to 1.43) (ew/pw = 1.56 to 1.72) with lateral margins slightly sinuate anterior to posterolateral angles. Posterolateral angles slightly obtuse, each with a setigerous puncture. Median longitudinal impression relatively deep, anterior transverse impression shallow. Basal foveae somewhat rounded, rugose, laterally delimited by a short, stout carina, difficult to see in some specimens. Basal margin slightly wider than anterior margin.

Elytra (el/ew = 1.49 to 1.50) with humeri distinctly marked, lateral margins slightly rounded. Striae 1-6 rather deeply sulcate, stria 7 shallower, intervals rather flat. Parascutellar stria long, apical stria short, connected with end of stria 5. Discal elytral setigerous punctures two on interval 3, adjoining stria 3.

Microsculpture. Head and pronotum with mesh pattern isodiametric, each sculpticell with convex surface. Elytral mesh pattern markedly transverse, sculpticells flat.
Male genitalia (Fig. 19). Apex of phallus pointed, with apical thickening narrow, more evident than in *B. rebl³*.

**Geographical distribution**

Known from the southern Chinese Provinces of Hubei and Shaanxi.

*B. (Plataphus) hebeicum* n. sp.

(Figs. 9, 20)

**Diagnosis**

Elongate *Plataphus* species from Hebei, Inner Mongolia and Beijing Shi, with elongate antennae and elytra reddish-brown, very similar to *B. lucillum sundukovii* n. ssp., but distinguishable by the right posterolateral pronatal angles and different male genitalia, and distinguishable from *B. plutenkoi* by the elytra more elongate.

**Type locality**

China, border Hebei-Inner Mongolia, road Chengde - Chifeng, pass 1600m, 41.6 N 118.2 E.

**Type series**

Holotype, ♀, "China, 1-2 VI.2000, border Hebei-Nei Mongol, road Chengde - Chifeng, pass 1600m, 41.6 N 118.2 E" (CTVR); paratypes: 5 ♀ 1 ♂, same date and locality as the holotype (CTVR); 1 ♀, "China, Beijing Shi, 30 km N Huairou, Yunmeng Shan Forest Park, 40.6 N 116.7 E, 4. VI.2000" (CTVR); 1 ♀, "China, N Hebei, –20 km NNE Qijia, 41.6 N 118.15 E, 13. VI.2005" (CTVR).

**Derivatio nominis**

The specific epithet is based on the name of the province in which the type series was collected.

**Description**

Length 4.08 to 4.52 mm.


Head evidently narrower than pronotum with parallel, deep and wide frontal furrows, eyes relatively small slightly convex. Antennomeres elongate (d / al = 1.73 to 1.87).

Pronotum (pw/pl = 1.32 to 1.34) (ew/pw = 1.55 to 1.56) less transverse than in the other Chinese *Plataphus* species, except the following one. Lateral margins slightly sinuate anterior to right postero-lateral angles, each with a seta. Anterior margin slightly narrower than basal margin; this last almost rectilinear, with lateral part slightly more advanced than median part. Basal foveae almost triangular, rather deep, rugose. Laterobasal carina not visible. Median longitudinal impression rather deeply sulcate and anterior transverse impression superficial.

Elytra elongate (el/ew = 1.54 to 1.56) with clearly developed humeri, striae sulcate, 1-6 deep, 7 slightly shallower. Parascutellar stria long, apical stria extended to end of stria 5, or to common end of stria 5 and 6. Discal setigerous punctures two on interval 3, adjoining stria 3.

Microsculpture. Head and pronotum with mesh pattern isodiametric, each sculpticell with convex surface. Elytra with mesh pattern markedly transverse, sculpticells flat.

Male genitalia (Fig. 20). Apex of phallus as in *B. plutenkoi*, but phallus more thickened and arcuate than in this last.

**Geographical distribution**

Known from the Chinese provinces of Hebei and Beijing Shi.

**Affinities**

The male genitalia are identical to those of *B. plutenkoi*, suggesting close relationship of these two taxa.

*B. (Plataphus) lucillum sundukovii* n. ssp.

(Figs. 10, 21)

**Biogeographical considerations**

The reason to deal here with this new subspecies from Ussuri region of the Japanese *Bembidion* (*Plataphus* lucillum Bates, 1883, at present not known from China, is the same as the explanation above about *B. alticum*; this species could occur in the northeastern provinces of Heilongjiang and Jilin.

**Diagnosis**

Elongate *Plataphus* species from Hebei, Inner Mongolia, and Beijing Shi, with elongate antennae and elytra reddish-brown; easily distinguished from *B. infuscipenne* Netolitzky, 1939 occurring in the same region, because the latter shows elytra and antennae evidently shorter and pronotum more transverse. This subspecies is distinguished from the nominotypical form by larger size and colour of elytra: dark green in the nominotypical form. See also under *B. hebeicum*. 
Type locality
Tigrovi, in the Ussuri region, of the Russian Far East.

Type series

Derivatio nominis
The subspecific epithet is a patronym based on the surname of my friend Jury Sundukov, from Lazov Reserve, Primorsky region, Far Eastern Russia, to whom this subspecies is dedicated. He collected and kindly gave me for study a part of the type series.

Description
Length 4.16 to 4.24 mm.


Head relatively large but narrower than pronotum, with frontal furrows almost parallel, slightly convergent, more regular and shallower than in the preceding species. Eyes large and rather convex. Antennomeres elongate (a1/a1 = 1.63 to 1.66).

Pronotum slightly transverse (pw/pl = 1.27 to 1.32) (ew/pw = 1.54 to 1.58) with lateral margins slightly sinuate anterior to posterolateral angles. Posterolateral angles obtuse, each with a seta. Basal margin almost rectilinear, basal fovea square, wide, rugose, laterally delimited by a short and sharp laterobasal carina. Median longitudinal impression deep, anterior transverse impression almost invisible. Basal margin slightly wider than anterior margin.

Elytra (el/ew = 1.61 to 1.64) with clearly developed humeri, striae sulcate, 1-6 deep, 7 shallow. Parascutellar stria long, apical stria extended to end of stria 5. Discal setigerous punctures two on interval 3, adjoining stria 3.

Microsculpture. Head and pronotum with mesh pattern isodiametric, sculpticells each with convex surface. Elytra with mesh pattern markedly transverse, sculpticells flat.

Male genitalia (Fig. 21). Apex of phallos slightly rounded, with thickened extreme end wider than in preceding species.

Geographical distribution
Known from Sikhotealin region (Far East Russia). Probably present also in Northern China, Heilongjiang and Jilin provinces, like most components of the Bembidion fauna of Ussuri. The nominotypical form, described from Japan, or at least a population with same colours as the sp. lucidum, is present also in Sakhalin Island (Dr. David Wrase, personal communication).

B. (Plataphus) janatui n. sp.
(Figs. 11, 22)

Diagnosis
Southwestern Chinese Plataphus species with elytral-lateral margins evidently rounded, pronotum small relative to elytra, integument with microlines prominent, antennomere 1 black, and apex of phallus pointed.

Type locality
China. W Sichuan, Ya'an Pref. Tianquan Co., Erlang Shan Pass 2900m, 9 km SE Luding, 29°52'N, 102°18'E.

Type series
Holotype, ♂, “China. W Sichuan (Ya'an Pref. Tianquan Co.) Erlang Shan Pass 2900m, 9 km SE Luding, 29°52'N / 102°18'E (brook bank), 20-22.VI.1999”
(CWBE); paratypes: 8♂♂ 3♀♀, same date and locality as the holotype (CWBE, CTVR); 1♂, “China. W Sichuan, Ya’an Prefecture, Tianquan Co., E Erlang Shan Pass 2900m, 22.VI.1999, 29.52.36N / 102.17.82E” (CPUE); 3♂♂ 3♀♀, “China, C-Sichuan, Xuecheng, Sammo 3500m, N 31°46’29" E 103°07’10", 1.7.2004” (CJPH, CTVR); 2♂♂ 1♀, “China Sichuan, Ganzi pref. Daxue Shan, 102.00E, 30.03N, 5 km E Kangding, river valley ca 3000m, 20./23.V1997” (CPUE, CTVR); 2♀♀, “China: W-Sichuan (4a), Daxue Shan, Bachtal, 5km E Kangding, 30.03.28N, 102.00.15E, 2500-2800m, 23.05.1997” (CWBE, CTVR); 1♀, “China, W. Sichuan, 3800m, 10 km S Hekou (Yajiang), N 30°00’49", E 101°16’37", 15.6.2007” (CJPH).

Derivatio nominis
The species is dedicated to Miroslav Janata from Prague, who kindly lent me part of the type series.

Description
Length 3.88 to 4.14 mm.
Head slightly smaller than pronotum, with frontal furrows parallel and deep. Eyes normally convex.
Pronotum small, transverse (pw/pl = 1.50 to 1.55), evidently narrower than elytra (ew/pw = 1.69 to 1.71) lateral margins markedly sinuate before slightly acute postero lateral angles. Basal margin almost rectilinear and slightly wider than anterior margin. Basal foveae round, deep and rugose, laterobasal carina extremely reduced and sharp, in some specimens, difficult to distinguish from basal rugosities. Median longitudinal impression deep, anterior transversal impression shallow.
Elytra (el/ew = 1.40 to 1.42) ovate with marked humeri, convex but evidently less than in B. gebleri persuasus, striae sulcate, 1 to 6 deep, 7 more superficial. Parascutellar stria long, apical stria extended to end of stria 5. Discal setigerous punctures two on interval 3, adjoining stria 3.
Microsculpture. Head and pronotum with isodiametric mesh pattern, sculpticells each with convex surface. Elytra with transverse mesh pattern, sculpticells flat.
Male genitalia (Fig. 22). Phallus with apex acute, and abruptly thickened.

Geographical Distribution
Known from the southwestern Chinese Province of Sichuan.

Affinities
Among the species occurring in China, the most similar in habitus to B. janatai is B. gebleri persuasus Neltzky, but B. janatai lacks the rounded, ball shaped, apex of phallus, typical for B. gebleri Gebler and its subspecies therefore it is not possible to rank this taxon as subspecies of B. gebleri. Thanks to the kindness of my friend Seiji Morita from Tokyo who sent me a couple of paratypes of B. shilenkovoi Morita, 1989, I was able to study this Japanese species, showing a phallus almost identical to that of B. janatai, with sclerites of the endophallus only slightly smaller than in this last. Also in habitus both species are similar, but easily distinguishable from one another by the colour of antennae (lighter in B. shilenkovoi), the microsculpture slightly more evident in B. janatai and the lateral margins of the pronotum, more sinuate near posteralateral angles in the species herewith described. Also this observation of a marked similarity in the male genitalia between central Chinese and Japanese species confirms that these faunas have strong relationships, as shown also by the Chinese B. (Ocydromus) peletum Jedlička, 1933 and the Japanese B. (Ocydromus) govorei Habu, 1973 (Toledano, 2000) and probably should be studied together.

B. (Plataphus) janatai yunnanensis n. ssp.
(Fig. 12)

Diagnosis
A B. janatai from Yunnan with elytral microsculpture mesh pattern less transverse and sculpticells more convex than in the nominotypical form. In the female paratype most sculpticells are almost isodiamic.

Type locality
China, Yunnan province, Yunnan.

Type series
Holotype, ♀, “China - Yunnan, Yunnan, 13.6-24.6.2005” (CTVR); paratypes: 4♂♂ 1♀♀, same date and locality as the holotype (CJSB, CTVR); 10♂♂ 2♀♀, “China, N-W Yunnan, 3300m, Hengduan Shan - Yunnan N 28°00’48.4", E 098°50’20.1", 15.6.2005” (CJPH, CTVR).

Derivatio nominis
The specific epithet derives from the type locality, located in Yunnan Province, China.

Description
Identical to the nominotypical form, except for the
Figs. 16-25 - Phallus of: 16) *Bembidion (Platapus*) *beckezi* n. sp., Paratype from China, Hubei, Dushennongjia mts., 31.5°N, 110.3°E (CTVR); 17) *B. (P) neri* n. sp., Holotype (CTVR); 18) *B. (P) rebi* n. sp., Holotype (CTVR); 19) *B. (P) plutenoki* n. sp., Paratype from China, Hubei, Dushennongjia mts., 31.5°N, 110.3°E (CTVR); 20) *B. (P) becki* n. sp., Holotype (CTVR); 21) *B. (P) lucilium sundukovi* n. sp., Paratype from Ussuri, Tigrvyv (CTVR); 22) *B. (P) janata* n. sp., Paratype from China, W-Sichuan, Erlang Shan, Pass 2800m, Tianquam Co., Ya'an Pref. (CPUE); 23) *B. (Blepharoplatus) beyrothi* Jedlička, Paratype (NHM(W)); 24) *B. (P) gebleri persicus* Netolitsky, specimen from Ussuri, Tigrvyv (CTVR); 25) *B. (Jedlickion) speciense* Jedlička, specimen from China, Sichuan, Mt. Emei (CTVR). Scale = 1mm.
characteristics of the elytral microsculpture. Male genitalia. Identical to those of the nominotypical form.

Geographical distribution
Known only from type locality in the southwestern Chinese Province of Yunnan.

B. (Plataphodes) gebleri persusum Netolitzky, 1938
(Figs. 13, 24)

Examined material
2 exx., NE China, Jilin, 30km NE Baihe City, Hongshi 650 m, 17.8.1994 (15) (NHMW, CTVR); 7 exx., China Jilin Prov., Bai He 750 - 800m, N 42°24’092 E 128°06’431, 4.6.2004 stream gravel (CCOH, HECO, CTVR); 17 exx., China: Heilongjiang Province, Qing Yuan, ca 30 km S Lang Xian, Riverside Gravel, 26.5.2004, N 46°47’002 E 129°04’349 (CCOH, HECO, CTVR); 1 exx., ‘China: Heilongjiang Province. Lang Xian dist. Dongzh village N 46°41’699 E 129°01’627, ca.550-660m. 27.5.2004 (OXUM).

Systematic notes
The specimen of Fig. 13 has three discal elytral setigerous punctures on its left elytron. This is certainly an individual aberration in a specimen showing male genitalia absolutely typical for B. gebleri persusum (Fig. 23), a species as a rule showing only two discal elytral setigerous punctures, and it demonstrates once again that the appearance of supernumerary discal elytral setigerous punctures in the genus Bembidion is probably due to a simple genetic mutation, and that the use of their number in supraspecific systematics of Bembidion must be done carefully.

Bembidion subgen. Plataphodes Ganglbauer, 1892
(type species: Bembidion feldmanni Mannheimer, 1823)

B. (Plataphodes) feldmanni Mannheimer, 1823
=B. palmeni J. Sahlberg, 1900

During this study I was able to examine several specimens of subgenus Plataphodes from China, Usurri and Kamchatka showing habitus and male genitalia identical to those of the nominotypical form of Bembidion feldmanni Mannheimer. At present I am unable to decide about their subspecific independence; therefore I identified all this material as B. feldmanni. This is the first citation of this species for China, Usurri and Kamchatka.

Bembidion subgen. Blepharoplataphysa Netolitzky, 1920
(Type species: Bembidion virens Gyllenhall, 1827)
=Bembidion subgenus Paraphatodes Jedlička, 1932 n.syn.

B. (Blepharoplataphysa) davaai Jedlička, 1968

Systematic notes
The examination of habitus and male genitalia of four paratypes of B. davaai Jedlička from Mongolia, Gobi Altaj (NMPC), revealed that the species is very similar to the eastern Palaearctic specimens of B. hasti Sahlberg, 1826. Possibly these two nominal species could be regarded as conspecific. B. hasti is certainly markedly varied in size and colour, in proportions between pronotum and elytra, and in dimensions of the elytral sculpticles. The study of the abundant specimens of Blepharoplataphysa from China that I examined reveals that their male genitalia are almost identical to B. hasti, even though the constantly more developed main sclerites of the endophallus and their dimensions on average smaller than the nominotypical B. hasti could suggest that they belong to an independent taxon, at least a subspecies of B. hasti. Waiting for a better knowledge of the systematics of this species, which needs a revision of its holarctic populations (Gerd Müller-Motzfeld, personal communication) in this paper I preferred to refrain from the description of a new taxon for the Chinese specimens I studied, and I deter-
mined these specimens as *B. davaei*. Provisionally, the distribution of *B. davaei* must be extended to China (Sichuan, Qinghai, Shaanxi and Gansu Provinces).

**Examined material**

4 paratypes of *B. davaei*, Mongolia, Gobi Altaj, Ajmak, Gobi Altaj Geb., 3 km S vom Pass Dětijn davaa, 2880m, Exp. Dr. Z. Kaszab, 1966 (NMPC); 3 exx., China N. Sichuan (Ya’an Pref. Baoding Co.) Jiujin Shan, riv. valley 3 km S Qiaoqi, 78 km NNW Ya’an30°40'N 102°45'E (CWBE, CTVR); 2 exx., China (C Sichuan, Qincheng Shan, NW Chengdu, 600m, 33°55'N 103°30'E (CWBE, CTVR); 9 exx., China W Sichuan, 4000m road Luhuo - Sertar, 40 km N Luhuo, 31°41'N 100°44'E (CTVR); 10 exx., China, W Sichuan, (Ganzi Tibet, Aut. Pref. Kangding Co.), Daxue Shan, brook bank W Tshero La Pass, 3650 m, 20 km W Kangding, 30°04'N101°46'E (CWBE, CTVR); 4 exx., Sichuan, 10 km S Litang, 4000m (CSMI, CTVR); 4 exx. China Sichuan, Jiiting (CK, CTVR); 7 exx., China S Qinghai, ca 3300m 32°16'N 96°29'E, 20 km N Nanqen (CTVR); 2 exx., China Shaanxi, Lueyang, 33°07'N 106°05'E (CTVR); 11 exx., China, Shaanxi, Taibashan range, Houzhenzi vill. env., 30°53'N 107°49'E (CPLS, CTVR); 6 exx., China, Gansu reg., 4200m, Dogcamglhamo (CPMI, CTVR); 12 exx., China N Hebei, 25 km N Chengde, 41°38'N 118°12'E (CTVR).

*B. (Blepharoplatus) heyrovskyi* Jedlicka, 1932

(Figs. 14, 23)

**Diagnosis**

This species, 4 mm long, is similar in habitus to *Platapus*, has body bronze, metallic, with head and pronotum showing isodiometric microsculpture, elytra with wide, slightly transverse sculpticells, elytral striae deeply sulcate, apical stria connected with end of stria 7. Male genitalia are similar to those of the other species of subgenus *Blepharoplatus* Netolitzky. At present this species seems to be the only *Blepharoplatus* in Yunnan Province. Mainly the character of the sulcate, not punctate elytral striae is useful in distinguishing *B. heyrovskyi* from *B. basti*, the preceding species.

**Examined material**

Holotype of *B. heyrovskyi*, ♀, “Yunnan fous” (NMPC); 2 paratype of *B. heyrovskyi*, ♀♂, same data as the holotype (NHMW, NHML).

**Redescription**

Length 4 mm.

Colour. Body bronze, metallic. Antennae and legs reddish to brown.

Head relatively large, with parallel, rather superficial frontal furrows. Eyes convex. Antennomeres short.

Pronotum transverse (pw/pl = 1.46), evidently narrower than elytra (ew/pw = 1.68), slightly sinuate anterior to posterolateral angles. Basal margin wider than anterior margin, with lateral ends slightly advanced in relation to median part. Median longitudinal impression and anterior and basal transverse impressions shallow. Basal foveae almost square, flat, rugose, their rugosities radially oriented, extended to almost all the prontal lateral margins. Laterobasal carina absent.

Elytra (el/ew 1.25) subovate, with square humeri, rounded apex. Striae 1 - 7 complete, deeply sulcate. Intervals convex. Parascutellar stria long, apical stria continuous with apical end of stria 7, as deep as this last. Discal setigerous punctures two on interval 3, near stria 3.

Male genitalia (Fig. 24). Typical structure of *Blepharoplatus* with ventral margin of phallos straight and dorsal margin arcuate, small sclerites grouped in middle of endophallus.

Female genitalia. Unknown.

**Geographical distribution**

Known only from type locality in Yunnan Province, southwestern China.

*Bembidion* subgen. *Hirmoplatus* Netolitzky, 1943

*(Type species: Bembidion hirmocoeulum* Chaudoir, 1850)*

*B. (Hirmoplatus) hirmocoeulum* Chaudoir, 1850

This is the first citation of this species for China.

**Examined material**

1 exx, Heiolongjiang Province, Qing Yuan, ca 30 km S Lang Xian, Riverside gravel 26.v.2004, 46°47'002 N, 129°04'349 E (CTVR); 4 exx, China: Jilin Prov., Bai He, 750-800m, N42°24'092' E128°06.431', 4.vi.2004, Stream gravel (HECO, CTVR); 9 exx., N Hebei, 25 Km N Chengde river valley, 41°38'N 118°12'E (CTVR).

*Bembidion* (Jedlickion) n. subgen.

**Diagnosis**

A *Bembidion* subgenus characterized by convex, metallic, shiny elytra and pronotum; pronotum with lateral margins slightly sinuate, elytral striae complete,
punctate-striate, discal elytral setigerous punctures two in interval 3, adjoining stria 3, metaventral process bordered and phalbus extremely narrow showing apex sec- curiform, base markedly angulate compared to long central portion, and basal opening on the right side of dorsal surface.

Systematic notes
In the original description, Jedlička (1932) attributes this species to the subgenus *Trichoplataphus*, characterized by supernumerary setae on the abdominal sterna, while *B. speciense* actually lacks this character; therefore, the original attribution cannot be accepted.

Most external characters (e.g. metallic, shiny species with light appendages, elytral striae punctate, basal elytral margin reaching the beginning of stria 5, two discal elytral setigerous punctures in the third interval, adjoining stria 3) are compatible with the diagnostic characters of the subgenus *Ocydromus sensu lato*. On the other hand, the phalbus of *B. speciense* (Fig. 25) lacks a character present in almost all the *Ocydromus sensu lato* species, i.e. a more or less developed flagellum in the endophallus. Also few Palaeartic *Ocydromus sensu lato* species (e.g. *B. cernidotum* Bates and *B. misellum* Harold, see Toledano, 2000) lack the long flagellum in the endophallus, but they show a phalbus evidently more thickened than *B. speciense*, with a typical "Peryphus-like" shape, and this difference in my opinion has a systematic importance. I think that the male genitalia of *B. speciense* cannot be judged as the maximum development of a tendency already shown by the cernidotum species-group within *Ocydromus sensu lato*, i.e. the reduction of the flagellum, because their peculiar external shape reveals a different phylogenetic origin. In fact, in my opinion the more interesting apomorphy of *B. speciense* is the external shape of the phalbus. It is extremely narrow and shows a peculiar angulation of the long basal portion compared to the straight and long central part, a form not shared by any *Ocydromus sensu lato* species known to me. Even the basal opening extended almost completely on the right side of the dorsal surface is a characteristic not shared by the *Ocydromus sensu lato* species. The Sinichosticus Mot- schulsky species share the character of the extension of the basal opening to the dorsal side, but they show habitus and remaining characters of the male genitalia not compatible with the inclusion of *B. speciense* within this genus. The endophallus shows small sclerites exactly at middle of phalbus. This last characteristic is shared also by the species of *Plataphus* and *Bembidi-oetolitzky*.

I explained above why in my opinion the only way to deal with *Plataphus* as a monophyletic group is to use it in strict sense. Even though the *Plataphus* species share also the secuiriform apex of phallus (see above), the inclusion of *B. speciense* should lead to a useless extension of the diagnosis of the subgenus. The same applies to *Bembidionetolitzky*. In particular the structure of the very convex pronotum would be unusual in both subgenera that otherwise include only species with extremely depressed, flat pronota; the elytral striae in *Plataphus* are sulcate, not punctate as in *B. speciense*. Pale legs are present in the species of *Plataphus* and *Bembidionetolitzky* (e.g. *B. (Plataphus) rebecca-num, B. (Bembidionetolitzky) tabellatum* Wollaston, 1854, *B. (Bembidionetolitzky) mingrelicus* Belousov & Sokolov, 1994, *B. (Bembidionetolitzky) piceocya-neum* Solsky, 1874), even though as a rare occurrence. The metaventral process, evidently bordered, suggests a systematic position closer to *Bembidionetolitzky* than to *Plataphus*, subgenera that are as a rule separated from one another by this character.

For the same reason this species cannot be included within subgenus *Hirmoplataphas* Netolitzky, showing unbordered process, which on the other hand shares most characters in habitus (identical pronotum, similar body shape, apical elytral stria connected with stria 7, even though only the holotype of *B. speciense* shows this character). Also the subgenus *Trichoplataphus* shares a similar prontal structure, but *B. speciense* does not share the main diagnostic character of the supernumerary abdominal setae.

In other words, not only a single apomorphy, but this complex of characters (external shape *Hirmoplataphas*-like, metavental process bordered, peculiar shape of phallus) led me to isolate this species in an independent, new subgenus, that seems to have its nearest relative in the subgenus *Hirmoplataphas*.

Type species
*Bembidion speciense* Jedlička, 1932.

Derivatio nominis
The name of the subgenus is a patronym, based on the surname of the late Ing. Arnost Jedlička, to the memory of whom this subgenus is dedicated. He was a great specialist on the Oriental Bembidiina, describer of many *Bembidion* species, including the type species of this subgenus, and developer of one of the most interesting collections of Chinese *Bembidion* of the world, preserved in the Narodni Muzeum of Prague. Because this subgenus is monospecific the redescription of the type species serves at the same time as description of the subgenus.
B. (Jedlickion) speciunse Jedlička, 1932  
(Figs. 15, 25)

Examined material

Holotype, ♀, Tatsienlu, Prov. Szechwan, China Merid. (NMPC); Paratype, ♂, same data as the holotype (NHML): 1♂, 1♀, China / Sichuan, 103.20 / 29.30, Mt. Emei 500-1000m, 4.-18.V.1989 (NHMB, CTVR).

Redescription

Length 5.04 to 5.08 mm.

Colour. Body metallic green. Antenna bicolored: antennomeres 1, 2 and basal half of 3 and 4 and apex of 11, red, remaining surfaces infuscated. Maxillary palpus with penultimate article dark. Legs bicolored: surfaces of most articles red, with apical end of each tarsomere darker, and with green, metallic reflections.

Head wide, temples very short, frontal furrows parallel and deep, rugose, not extended to clypeus. Eyes very convex.

Pronotum transverse (pw/pl = 1.31) (ew/pw = 1.58) with lateral margins rounded, slightly sinuate at posterior fourth. Lateral setae at anterior third. Lateral channel wide, with border thin. Posterolateral angles right, sharp. Base slightly arcuate at middle, with basal convexity. Anterior transverse impression superficial, median longitudinal impression not deep but evident, basal transverse impression shallow. Base punctate, though not deeply so, basal fovea square, slightly raised at middle, laterally delimited by a long and sharp laterobasal carina.

Metaventral process with a coarse, evident border.

Elytra convex and wide (el/ew = 1.49 to 1.53), with distinct humeri, lateral margins almost parallel and apex round. Striae 1-7 complete, deeply punctate-sulcate, parascutellar stria long, punctate, apical stria rather superficial, connected with stria 7 in holotype, with stria 5 in the other specimens examined, with a seta at its anterior end. Discal setigerous punctures two on interval 3, adjoining stria 3, the anterior one at middle of elytra, the posterior one at apical fourth.

Microsculpture with mesh pattern isodiamic on neck and frontal furrows, on pronotum, microlines shallow in broad transverse sculpticells except disc lacking microsculpture; on elytra evident, transverse, thin sculpticells.

Male genitalia (Fig. 25). Phallus sharp and long, with apex ventrally bent and base angulated at 80° compared to central part of phallus. Basal opening extended on right side of dorsal surface, no basal emargination at left side. Apical end stout, rounded, apex secundiform. A small, almost rectangular sclerite, exactly at middle of phallus. Dorsally in respect of the sclerite a double membrane markedly sclerotized. Left and right paramere each with 2 apical setae.

Female genitalia. Sperrathecia simple, with reservoir almost cylindrical, narrow. Holotype without sclerotized annulus receptaculi.

Geographical distribution

Known to me from the southwestern Chinese province of Sichuan, Emei Shan mountain. Probably the locality Tatsienlu, reported on the label of the type (= the modern Kangding), means “mountains near Kangding”, i.e. Gongga Shan.

Bembidion (Ocydromus Clairville, 1806 sensu lato)  
(Type species: Bembidion modestum Fabricius, 1801)

B. lunatum Dufschmid, 1812 species-group  

Diagnosis

Species showing dark, markedly convex pronotum, wide and convex elytra as a rule dark with light apical lunule, extended in some specimens to the elytral margins, completely dark (without lunule) in few specimens. Endophallus with large central brush and long, spiral flagellum.

Systematic notes

The lunatum and lenæ Cski, 1928 species-groups seem to be closely related to one another. The main problem is to decide if these groups should be included in a single subgenus or if they should be separated at a subgeneric level. Externally, the species of the lenæ group share unicoloral elytra, pronotum showing lateral margins slightly (or not) sinuate near posterolateral angles and pronotal base wider than anterior margin, while most species of lunatum group show elytra with light apical spots, light entire apex, or light apex and lateral margins of elytra (with few exceptions of unicoloral species), lateral margins of pronotum evidently sinuate near posterolateral angles and pronotal base narrower than in the lenæ group. Differences in these characters in my opinion could not exclude membership in the same subgenus.

The endophallus of the species belonging to the lunatum and lenæ groups show the presence of a long, spiral flagellum which shows a complete loop in some species of the lenæ group, e.g. B. pelean Jedlička, B. gotoense Habu, B. schonmanni Toledano, 2000). In the lunatum group the flagellum seems to zigzag because the spiral is less tightly wound. In my opinion, the shar-
ing of this character means too close systematic relationships to separate both groups at a subgeneric level.

On the other hand it is also impossible to merge them in a single subgenus independent from *Ocydromus sensu lato* because some other species of this complex (e.g. the species of the *radians* group *sensu* Toledano, 2000) show a shorter, slightly spiral flagellum in the endophallus which could be interpreted as a lower level of development of the same character.

Therefore both groups are dealt with here as species-groups of the subgenus *Ocydromus sensu lato*.

*B. (Ocydromus) wolfgangi* n. sp.
(Figs. 26, 33)

**Diagnosis**
Chinese species of *lunatum* group with pronotum markedly convex and cordate, elytra markedly convex and ovate, rounded humeri and maximum elytral width posterior to middle.

**Type locality**
China, Gansu Province, Ponggartang.

**Type series**
Holotype, ♂, “China Kansu, Ponggartang, 30 Jan. 1992” (SMNS); paratypes: 3 ♀♀, same date and locality as the holotype (SMNS, CWBE, CTVR).

**Derivatio nominis**
The specific epithet is a patronym based on the given name of my friend Dr. Wolfgang Schawaller, curator of the Staatliches Museum für Naturkunde, Stuttgart, who kindly lent me for study the holotype and a para-type of *B. wolfgangi*. This species is dedicated to him.

**Description**
Length 6.04 to 6.54 mm.

Colour. Head and pronotum piceous-black with faint greenish reflections. Elytra brown, with slightly paler apical lunule with vague borders; lateral part of lunule extended whole of apical third, from stria 4 to lateral margin; apical fifth completely pale. Antenna bicolored: antennomeres 1-4 red, 5-11 dark brown. Legs red.

Head evidently narrower than pronotum, with parallel, densely punctate frontal furrows. Eyes moderately convex. Antennae elongate.

Figs. 26-28 - Habitus of: 26 *Bembidion (Ocydromus) wolfgangi* n. sp., Holotype (SMNS); 27 *B. (O.) pseudovale* n. sp. Holotype (CTVR); 28 *B. (O.) pamiricola kemiuschanicum* n. sp., Paratype from China, Xinjiang, Akmeqit, 100 km SSW Yecheng (CTVR). Scale = 1 mm.
Pronotum (pw/pl = 1.18) markedly cordate, with lateral margins rounded in anterior 5/6, then sinuate anterior to slightly acute and sharp posterolateral angles. Lateral margins sharp. Basal margin rectilinear, as wide as anterior margin. Median longitudinal impression and anterior transverse impression rather shallow but evident. Basal foveae round, not deep, punctate as entire base, laterally delimited each side by a short, rudimentary laterobasal carina.

Elytra (el/ew = 1.46 to 1.53) markedly ovate, evidently wider than pronotum (ew/pw = 1.59 to 1.69), with rounded humeri, maximum width at about apical 3/5. Basal margin extended to point in correspondence to beginning of striae 4 and 5. Striae 1-5 evidently punctate and sulcate, disappeared slightly anterior to apex, except stria 1, extended to apex, stria 6 shallowly punctate, disappeared at about middle of elytra, stria 7 absent. Discal setigerous punctures two, clearly on interval 3, near stria 3. Parascutellar stria rather long, shallowly punctate, apical stria short, with setigerous puncture in middle.

Legs elongate.

Microsculpture absent from head and pronotum. Elytral mesh pattern markedly transverse, sculpitellae regularly aligned, flat on entire surface.

Male genitalia (Fig. 33). Phallus coarse. Central brush markedly developed, situated near basal opening. Long, tubular flagellum well developed, spiral shaped.

Geographical distribution

Known only from type locality: Gansu Province, central China.

B. (Oxydromus) pseudovale n. sp. (Figs. 27, 34)

Diagnosis

Chinese species of lunatum group with pronotum and elytra brown, each elytron with a faint pale apical lunula; pronotum cordiform, elytra oval, markedly transverse.

Type locality

China, Qinghai province, 120 km W of Qinghai Hu, Tianjun.

Type series

Holotype, δ, “China, Qinghai reg., 3500m, 120 km W of Qinghai Hu, Tianjun 3-4.7.1990” (CTVR); paratypes, 3♀ 2♂, “China, Qinghai or., Ngola - Shan Mts. 3700m, Surong, 1-2.VII.1998” (CTVR, CRNS, CBUL); 1♂, “CH. NC-Sichuan (Zoige), Langmusi (Dogbanghamo), 34:03:48N/102:38:08E, -4100m, alpine meadows, scree, 16.-18.VII.1999” (CJPH).

Derivatio nominis

The specific epithet emphasizes the similarity of this species to B. ovale Motschulsky, 1844.

Description

Length 4.9 to 5.56 mm.

Colour. Head and pronotum dark brown, elytra brown, unicolorous. Antenna bicolored: antennomeres 1 and 2 and basal half of 3 and 4 and articulation of 5-11 red, remaining surfaces dark brown. Legs bicolored, reddish with base of femora darkened. Apical elytral lunule indistinct, slightly paler than rest of elytra, with same shape as in B. wolfgangi.

Head relatively large, but evidently narrower than the pronotum, with parallel, uneven frontal furrows. Eyes normally convex.

Pronotum cordate (pw/pl = 1.33 to 1.42), transverse (ew/pw = 1.50 to 1.59), with rounded lateral margins, sinuate anterior to right and sharp posterolateral angles. Median longitudinal and anterior transverse impressions shallow. Basal transverse impression rugose-punctate, as also small, round, not deep basal foveae. Laterobasal carina rudimentary, difficult to distinguish from basal rugosities.

Elytra (el/ew = 1.46 to 1.50) oval, with rounded humeri and maximum width in the middle. Basal margin extended to base of stria 5. Striae 1-7 shallowly punctate, not sulcate, internal ones slightly more impressed than the outer. Striae disappeared slightly anterior to apex. Parascutellar stria short, punctate. Apical stria short, with a seta in middle, joining apical end of stria 7. Discal setigerous punctures two on interval 3, near stria 3.

Microsculpture of holotype absent from head and pronotum. Elytra with mesh pattern transverse, sculpitellae broad, and flat on entire surface irregularly positioned, giving impression of an isodiometric mesh pattern. Female paratypes with traces of transverse, flat sculpitellae on pronotal borders, microlines absent from disc, and elytral sculpitellae shorter than in the holotype, almost isodiometric.

Male genitalia (Fig. 34). Phallus arcuate. Central brush slightly behind middle. Tubular flagellum relatively short and sharp, spiral incomplete.

Female genitalia. Spermatheca simple with long duct, annulus receptacular not sclerotized and reservoir distinctly sclerotized, apparently divided into two cavities, one almost cylindrical, elongate, the other shorter,
pear-shaped. The cavities are angulated to one another, giving to the reservoir a "L" shape.

Geographical distribution
Known only from Qinghai Province, southwestern China.

Affinities
Closely related to B. ovale Motschulsky which shows similar male genitalia, but easily distinguishable from B. pseudovale by its distinct elytral punctation, more convex elytral intervals, more regular and transverse elytral sculpticells, and more cordate and less transverse pronotum.

B. (Ocydromus) pamiricola kunlunshanicum n. ssp.
(Figs. 28, 35)

Diagnosis
A population of B. pamiricola Lutschinik, 1930 showing elytra bordered by a wide pale band at lateral margins and apex.

Type locality
China, Xinjiang, ca 140km SSW Yecheng, W Kunlun Shan, 2500m, 50 km S Akmeqit.

Type series
Holotype, δ, "China, Xinjiang, ca 140km SSW Yecheng, W Kunlun Shan, 2500m, 50 km S Akmeqit, 26/VI/1993" (CTVR); paratypes: 5 δ 5 , 6 ♂ ♂ , same date and locality as the holotype (CTVR); 2♂ 5 , "China, Xinjiang, 2000-3000m, S slope of Tian Shan mts., road Kuga - Bayanbulak, ca. 100km NNE Kuga, 8-11: V:1993" (CTVR).

Derivatio nominis
The subspecific epithet is derived from the mountains in the Chinese province of Xinjiang where the type was collected.

Description
Length 5.1 to 6.44 mm (see below intraspecific variability).
Colour. Head and pronotum brown to picose brown with faint greenish reflections. Elytra brown to dark brown contoured by coarse pale area, extended from stria 5 to the lateral margin, same width also in apical lunule. Borders of pale area vague. Legs and antennae red, in few specimens distal antennomeres slightly infuscated.

Head large, but distinctly smaller than the very large pronotum; frontal furrows parallel and flat. Eyes with variable convexity, from prominent to rather flat. Antennae with variable development in length of antennomeres (tl/al = 1.80 to 1.96).

Pronotum (pw/pl = 1.31 to 1.38) markedly cordate and convex, very wide if compared to elytra (ew/pw = 1.38 to 1.48). Lateral margins markedly curved with basal sinuation extremely short. Lateral channel relatively wide. Posterolateral angles short and obtuse, each bearing a seta. Basal border slightly arcuate with basal convexity. Median longitudinal impression and anterior transverse impression visible but not deep. Basal transverse impression rather deep, punctate, with small basal foveae almost triangular, not very deep, laterally delimited each side by short and sharp laterobasal carina.

Elytra (el/ew = 1.47 to 1.60) subovate, with rather rounded humeri. Striae 1 - 5 complete, moderately punctate and slightly sulcate, striae 6 and 7 only punctate, shallow but present. Discal intervals 1-4 convex, others flat. Discal setigerous punctures two on interval 3, adjoining stria 3. Parascutellar stria punctate, long. Apical stria short and relatively deep with setigerous puncture in middle, connected to apical end of stria 5.

Microsculpture practically absent from head, except at basal border of neck, with mesh pattern isodiametric, sculpticells small, each convex. Pronotum with narrow, transverse and flat sculpticells, absent from disc. Elytra with mesh pattern transverse, sculpticells narrow and flat.

Male genitalia (Fig. 35). Identical to those of B. pamiricola. Phallus coarse, pointed at apex, with large central brush near basal opening, and tubular flagellum sinuate, almost "S" shaped. Small sclerite "c" shaped with basal concavity ventrally to central brush.

Intraspecific variability
Two paratypes, 1 male and 1 female, are evidently smaller than the others (length 5.1 and 5.2 mm, while the others are long 6.00 to 6.44 mm). The standard ratios I use in my descriptions (pw/pl = 1.35 to 1.36; ew/pw = 1.38 to 1.47; el/ew = 1.47 to 1.54; tl/al = 1.80 to 1.82) are within or broadly overlap the range of values (pw/pl = 1.31 to 1.38; ew/pw = 1.40 to 1.48; el/ew = 1.50 to 1.60; tl/al = 1.83 to 1.96) of the other specimens. Because also the genitalia of the male specimen are extremely similar to those of the others, I refrain from the description of two taxa and I include also these two specimens in the same type series as the others.

Geographical distribution
Known from the western Chinese Province of Xinjiang, Kunlun Shan Mts.
Figs. 29-32 - Habitus of: 29) *B. (O.) kueneni* n. sp., Holotype (CWBE); 30) *B. (O.) peleum* Jedlička, specimen from China, Shaanxi, Luchang 33°07'N 106°05'E (CTVR); 31) *B. (O.) nonaginta* n. sp., Holotype (CWBE); 32) *B. (O.) sterbai* Jedlička, Holotype (DEIC). Scale = 1mm.
B. (Ocydromus) altistriatum Netolitzky, 1934a

Examined material
30 exx., China, Jilin Prov., Bai He, 750-800m, N42°24.092' E128°06.431', 4. VI. 2004, stream gravel (CCOH, CTVR).

B. (Ocydromus) altistriatum ssp. semiferrugineum
Kirschshofer, 1984 new status
Bembidion semiferrugineum Kirschshofer, 1984

Systematic notes
The male genitalia of a paratype of B. semiferrugineum Kirschshofer that I examined (NHMW) are identical to those of B. altistriatum Netolitzky, 1934a, except for a slight difference in the apex of the phal- lus: narrower in semiferrugineum than in specimens of altistriatum from Ussuri. The colour of body and appendages is paler than in the nominotypical form. In my opinion they may certainly be referred to the same species, but waiting for a better knowledge on the Chinese populations of B. altistriatum I refrain here from a synonymy of B. semiferrugineum, instead ranking it as a subspecies of B. altistriatum. A population of B. altis- triatum from Northern Hebei Province, China, shares the shape of the apex of phallus with the paratype of B. semiferrugineum, and seems to confirm the validity of the taxon, therefore I determined the specimens as Bembidion altistriatum ssp. semiferrugineum even though they show the typical color of the nominotypical form of B. altistriatum.

Examined material
1 male, paratype of B. semiferrugineum, China, Wu Tai Shan, 39°11'30" E, 31.VIII.1929 (NHMW); 22 exx., China, N Hebei, -20 km NNE Qijia, 41°7'N 118°15'E, 13.VI.2005 (CTVR); 2 exx., Hebei / Nei Mongol, Chengde - Chifeng, 41°6'N 118°2'E, 14-16.VI.2001 (CTVR).

lenae Csiki, 1828 species-group sensu Toledo (2000)

B. (Ocydromus) kucerae n. sp.
(Figs. 29, 36)

Diagnosis
A Chinese Ocydromus species near B. peleum Jedlička (Fig. 30) with pronotum narrower than in the other similar species.

Type locality
China (S-Shaanxi) Qinling Shan Province, riv. bank at rd. Zhouzi-Foping, 95km WSW Xi'an, 1000m, 33°53'N 108°01'E.

Type series
Holotype, ♂, "China (S-Shaanxi) Qinling Shan, riv. bank at rd. Zhouzi-Foping, 95km WSW Xi'an, 1000m, 33°53'N 108°01'E (gravel bank with vegetation), 4. VII. 2001" (CWBE); paratypes: 1 ♂, 2 ♀, same date and locality as the holotype (CWBE, CTVR); 2 ♂, 1 ♀, "China - Shaanxi, Lueang env. 15km NW, 18.7 - 21.7.2001" (CKSB); 4 ♀, "China - Shaanxi, 15 km N of Luzegang, 20-28.5.2007" (CKSB, CTVR); 4 ♂, 8 ♀, "China - Shaanxi, Tabashan Range, 1900m, Houzenzi vill. env., 33°53'N 107°49'E, 17-25.10.1999" (CPSL, CTVR); 3 ♂, 2 ♀, "China (W-Hubei), Daba Shan riv. bank 12 km SE Muyuping, 1000m, 31°21'N / 110°31'E, (fine to coarse gravel) 17.VII.2001 (CWBE, CTVR); 1 ♂, 1 ♀, "China (S-Shaanxi) Qinling Shan, riv. bank above Houzenzi, 115 km WSW Xi'an, 2500m, 33°50'N / 107°47'E (coarse gravel bank, floating), 4.VII.2001" (CWBE, CTVR).

Derivatio nominis
The specific epithet is based on the surname of Emil Kucera of Sobeslav, Czech Republic, who kindly gave me some paratypes to study. This species is dedicated to him.

Description
Length 4.64 to 5.14 mm.
Colour. Body metallic black with pronounced blue reflections, glossy. Antennae bicolored: antennomere 1, and base of 2 - 4 red (some specimens with antennomere 2 entirely red), remaining surfaces dark. Legs bicolored: femora and knees dark, surfaces of remaining articles red.
Head with parallel frontal furrows with few punctures at their anterior end. Eyes convex. Antennae long.
Pronotum relatively long and narrow (pw/pl = 1.15 to 1.17), (ew/pw = 1.60 to 1.63) with lateral margins slightly sinuate anterior to posterolateral angles. Posteralateral angles obtuse, each with a seta, very long com-
pared to other setae on dorsal surface. Basal margin slightly arcuate with basal convexity. Median longitudinal impression and anterior transverse impression shallow, punctate at lateral ends. Basal transverse impression punctate. Basal foveae small, triangular, punctate, laterally delimited by a square, smooth, impunctate, slightly convex portion of base before a wide rudiment of laterobasal carina. Basal margin slightly wider than anterior margin.

Elytra elongate (el/ew = 1.63 to 1.68), parallel, with well marked humeri and pointed apex. Elytral striae punctate, 1 - 6 deeply so, stria 7 shallower. Striae evidently less impressed at about apical fifth. Parascutellar stria long, punctate. Apical stria shallow, with a seta in advanced position. Discal setigerous punctures two on interval 3, near stria 3.

Microsculpture absent from head except extreme of neck with mesh pattern isodiametric, sculpticells flat; pronotal disc without microsculpture, or some specimens with indistinct trace of transverse, flat sculpticells, at lateral margins, between disc and lateral channel. Elytral microsculpture practically absent from males, in females microlines very shallow; mesh pattern transverse, sculpticells flat and narrow, more evident near apex.

Male genitalia (Fig. 36). Endophallus showing unwound spiral tubular flagellum., as in the lunatum group species.

Female genitalia. Spermatria simple with long duct, annulus receptaculi slightly sclerotized and reservoir distinctly sclerotized, pear-shaped, apparently divided into two cavities.

Geographical distribution
Known from South Shaanxi and Western Hubei Provinces, in southern China.

Affinities
Certainly closely related to B. pelenum (Fig. 30), but not sharing with the latter the complete coil of flagellum in the endophallus. From this perspective, B. kucerai seems intermediate between lanae and lunatum groups: it shares the habitus of lanae group and the endophallus of lunatum group.

B. (Ocydromus) nonaginta n. sp.  
(Figs. 31, 37)

Diagnosis
A black, metallic Chinese Ocydromus species of lanae group with pronotum similar to that of the Peryphanes species.

Systematic notes
I included this new species within the lanae group based on unicolorous elytra and structure of the male genitalia. However, in its outline, the pronotum is more like that of the species of the lunatum group, although it is less convex than in the other species of this group. In that respect, pronotal form is more similar to that of the species of deleturn Jeanne group. Once again a species of the Chinese fauna is intermediate among several species-groups of subgenus Ocydromus sensu lato.

Type locality
China (S Shaanxi) Qinling Shan, river bank above Houzenzi, 115 km WSW Xi'an, 2500m, 33°50' N / 107°47'E.

Type series
Holotype, ♂, "China (S Shaanxi) Qinling Shan, river bank above Houzenzi, 115 km WSW Xi'an, 2500m, 33°50' N / 107°47'E (coarse gravel bank, floating), 4.VII.2001" (CWBE); paratype, ♀, "China, W-Hubei, Dashennongxia mts., 31.5N 110.3E, 2100-2900m, 10.-14.VI.2002" (CTVR).

Derivatio nominis
The specific epithet is a Latin noun in apposition, meaning "90". Since this new species was discovered last year, the species is dedicated to the 90 years of history of my dental surgery, founded in 1916 by my grandfather, run by my father from the 50's to the 80's then by my brother and me, situated in the same, historical office in the center of Verona.

Description
Length 4.60 to 5.14 mm.
Head normal with parallel frontal furrows ended at base with small punctate area. Eyes convex. Antennae relatively short (dl/al = 1.95 to 2.07).

Pronotum cordate, transverse (pw/pl = 1.27 to 1.28) relatively small compared to elytra (ew/pw = 1.70) markedly sinuate before posterolateral angles. Lateral channel sharp. Posterolateral angles square, sharp, each with a seta. (The male specimen has posterolateral angles slightly obtuse). Median longitudinal impression and anterior transverse impression shallow. Basal mar-
Figs. 33-38 - Phallos of: 33) *Bembidion (Ocydromus) wolfgangi* n. sp., Holotype (SNMS); 34) *B. (O.) pseudovale* n. sp. Holotype (CTVR); 35) *B. (O.) pamiricola kunlunshanicum* n. sp., Paratype from China, Xinjiang, Aksuqit, 100 km SSW Yecheng (CTVR); 36) *B. (O.) kucerai* n. sp., Holotype (CWBE); 37) *B. (O.) nonaginta* n. sp., Holotype (CWBE); 38) *B. (O.) sterhai* Jedlička, Holotype (DEIC). Scale = 1mm.
gin slightly arcuate, with basal convexity. Basal transverse impression wide, deeper, punctate. Basal foveae as in *B. kucei*, with surface of square, lateral area wrinkled and punctate. Laterobasal carina absent. Radial wrinkles here and there at pronotal lateral margins. Basal margin slightly wider than anterior margin.

Elytra oval, elongate (el/ew = 1.53 to 1.60), with square humeri and pointed apex. Maximum elytral width postergu to middle. Elytral striae punctate, 1-6 deeply, 7 shallower, almost complete. Parascutellar stria long, punctate, apical stria short and superficial. Discal setigerous punctures two on interval 3, anterior one near stria 3, the apical one almost in middle of interval.

Microsculpture absent from head. On the pronotum, disc medially without microsculpture, here and there on lateral margins of disc small areas with indistinct, very shallow microlines, in form of broad, flat sculpticells. Elytra with microsculpture in form of scattered narrow, transverse and flat sculpticells, microlines almost invisible in male, slightly more evident in female specimen at about 80-100x of magnification. At lower magnification, impression is of a glossy surface, without microsculpture.

Male genitalia (Fig. 37). Similar to those of *B. kucei*.

Female genitalia. Spermatheca simple with long duct, annulus receptaculii not sclerotized and reservoir pear-shaped, apparently divided into two cavities.

**Geographical distribution**

Known from southern China, South Shaanxi and Western Hubei Provinces.

*B. (Ocydromus) sterbai* Jedlička, 1965a
(Figs. 32, 38)

**Diagnosis**

Chinese species of *lenae* group with red legs.

**Systematic notes**

Examination of the genitalia of the type specimen (DEIC) revealed that *B. sterbai* belongs to the *lenae* group, as shown by the sinuate flagellum in the endophallus.

**Examined material**

Holotype, ♂, China, Prov. Yunnan, Vallis flumin. Soling.ho (DEIC).

**Redescription**

Length 4.38 mm.

Colour. Body brown, slightly metallic. Antennae bi-colored: antennomeres 1, 2, and base of 3 red, apical part of 3 and 4-11 darker. Legs red.

Head wide, slightly narrower than pronotum; frontal furrows parallel, punctate at basal end. Eyes convex.

Pronotum transverse (pw/pl = 1.27), evidently narrower than elytra (ew/pw = 1.64) with lateral margins markedly sinuate anterior to posterolateral angles. Rectilinear posterior part of the side near posterolateral angles long about 1/4 of pronotum length. Posterolateral angles right. Median longitudinal impression and anterior transverse impression shallow, basal transverse impression wide, coarsely punctate, basal foveae almost square, rugose-punctate, laterally delimited by wide rudiment of laterobasal carina. Basal margin evidently wider than the anterior margin.

Elytra subovate (el/ew = 1.55), markedly convex with square humeri. Striae 1-7 deeply punctate, more superficial slightly anterior to apex. Intervals convex. Parascutellar stria long, punctate, apical stria shallow and short.

Microsculpture absent from head and pronotum, on surface of elytra very difficult to see, in form of isolated narrow transverse sculpticells here and there.

Male genitalia (Fig. 38). Phallus arcuate, pointed at apex. Central brush elongate, parallel to ventral border, anteriorly ended at about middle of endophallus, spiral of tubular flagellum unwound.

Female genitalia. Unknown.

**Geographical distribution**

Known only from type locality in the southwestern Chinese Province of Yunnan.

*B. phaedrum* Andrewes, 1923 species-group
*Bembidion* subgenus *Politothanes* Müller-Morzfeld, 1998 *auct.*

*B. (Ocydromus) phaedrum* Andrewes, 1923
=B*embidion purkinei* Jedlička, 1932

During this study I examined in the Collection of Beijing Museum few specimens almost identical to some specimens of *B. phaedrum* from Tara Nhola Valley, Nepal, kindly identified and supplied by Joachim Schmidt. This fact seems to confirm the synonymy of *B. purkinei* Jedlička, 1932 (Andrewes, 1935), described from "Tatsienlu" (= Kangding, Sichuan). The species shows the typical genitalic features of some species of the *lenae* group (main "loop-shaped" sclerite of the endophallus), together with the small dorsal tooth at the apex of the phallus, shared by *B. polites* Andrewes, 1935.
During the writing of this paper I was informed that probably also *B. politis* is conspecific with *B. phaeodrum* (Joachim Schmidt, personal communication). As I already explained (Toledano, 2000), at least provisionally in my opinion the *Polistophanes* cannot be maintained as a subgenus separate from *Ocydromus sensu lato*, because the linking characters (pronotal and elytral shape, loop-shaped sclerite) seem to be more important than the dividing ones (dorsopacal tooth in *B. politis*).

**Examined material**

2 ex., China Yunnan, Menglun County, 21.9N, 101.2E (IZAS, CTVR); 2 ex., China, Yunnan, Jinghong County, 22.0N, 100.8E (IZAS, CTVR).

*B. radians* Andrewes, 1922 species-group *sensu Toledano (2000)*

**Diagnosis**

A species group characterized by small size, dark, metallic teguments and endophallus showing ovalar brush sclerite and short tubular flagellum, more or less sinuate.

*B. (Ocydromus) joachimschmidtii* n. sp.  
(Figs. 39, 47)

**Diagnosis**

A small, metallic green Chinese Bembidion of *radi-

*us* group with markedly convex elytra, maximum ely-

tral width at apical third and pronotum more transverse than in *B. morisai* Toledano.

**Type locality**

China, S Shaanxi, Qinling Shan, 115 km WSW Xi’an, 33°50’ N / 107°47’E.

**Type series**

Holotype, ♂, “China (S Shaanxi) Qinling Shan, river bank above Houzhenzi, 115 km WSW Xi’an, 2500m, 33°50’ N / 107°47’E (coarse gravel bank, floating), 4.VII.2001” (CWBE); paratypes, 3 ♂♀, “China (W-Hubei) Daba Shan mountain range NE Muyuping, pass 12 km N Muyuping, 31°32’N/110°26’E, 2380m, N pass (young decid. for/bank of small creek/moss/ sif.,) 17-21.VII.2001” (CWBE, CTVR); 1 ♂, “China (W-Hubei) Daba Shan, creek vall. 8 km NW Muyuping, 31°29’N/110°22’E, 1540m (mix for/shady meadow, slopes/moss-sifted, 18.VII.2001” (CWBE).

*Derivatio nominis*

The species is dedicated to Joachim Schmidt from Rostock, Germany, a dear friend and great collaborator, excellent specialist on carabid beetles, who constantly helps me with stimulating opinions and useful suggestions about the many systematic problems of the Bem-bidiina.

**Description**

Length 3.72 to 4.00 mm.

Colour. Dark, metallic, with greenish reflections. Antennae bicolored: antennomere 1 and base of 2 and 3 red, remaining surfaces dark brown. Legs bicolored, surfaces of most articles red, but knees dark.

Head relatively large, slightly narrower than pronoto-


Pronotum cordiform, transverse (pw/pl = 1.29 to 1.30) (ew/pw = 1.43 to 1.50) markedly convex. Lat-

eral margins sinuate anterior to posteralar angles. Median longitudinal impression and anterior trans-

verse impression shallow, base coarsely punctate. Basal foveae round, rugose - punctate, laterally delimitated by a sharp laterosalar carina. Posteralar angles right. Bas-

al margin almost rectilinear, slightly wider than ante-

rior margin.

Elytra (el/ew = 1.43 to 1.49) ovate, markedly con-

vex, with narrow humeri, maximum width slightly pos-

terior to middle and pointed apex. Striae 1-7 punctate, disappeared at apical third, except stria 1 extend-

eed to apex. Two discal setigerous punctures on interval 3, in middle of interval in some specimens, in some others near stria 3, but not particularly close to stria. Parascutellar stria short, punctate, apical stria short and shallow, almost absent, with a serigerous puncture.

Microsculpture absent from entire dorsal surface of male, in females present, microlines superficial and diffi-

cult to see, in form of narrow, flat transverse sculpt-


cells; more evident at apex.

Male genitalia (Fig. 47). Phallus arcuate, with short, tubular sclerite in middle of endophallus, dorsal to cen-

tral brush, which is distinctly sclerotized, slightly diag-


onal, pointed at its apical end. Two flat sclerites ventral to central brush.

Female genitalia. Spermatheca simple with long duct, annulus receptaculi slightly sclerotized and reservoir distinctly sclerotized, relatively wide, “8” shaped, apparently divided into two cavities.

**Geographical distribution**

Known from South Shaanxi and Western Hubei Provinces in southern China.
**B. (Oxydromus) heishuianum** n. sp.  
(Figs. 40, 48)

**Diagnosis**
Relatively small, black Chinese species of *radians* group, with legs dark except apices of fore tibiae and tarsomeres 1-5 reddish.

**Type locality**
China Yunnan, Heishui, 27.13N 100.19E, 25 km N of Lijiang.

**Type series**
Holotype, ♂, "China Yunnan, 1-19.VII.1992, Heishui, 27.13N 100.19E, 25 km N of Lijiang" (CTVR); paratypes: 1♀, "China, N-W Yunnan, 3300m, Hengduan Shan - Yannen N 28°00'48.4", E 098°50'20.1", 15.6.2005" (CJPH); 1♂, "China, Sichuan, 1-3.7.06, Qingmao, 2700-3500m, 28°47'N, 99°56'E" (CMCZ).

**Derivatio nominis**
The name of the species derives from the type locality.

**Description**
Length 4.26 mm.  
Colour. Body metallic black with faint bluish reflections. Antenna with color various: antennomere 1 red-

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Figs. 39-46. Habitus of: 39. *Benbidian* (Oxydromus) joachimschmidtii n. sp., Holotype (CWRB); 40-41. *B. (O.) heishuianum* n. sp., Holotype (CTVR); 41. *B. (O.) rapela* n. sp., Paratype from N Sichuan, Jiuzhaigou (CSMI); 42. *B. (O.) yuane* n. sp., Holotype (CTVR); 43-44. *B. (O.) kareli* n. sp., Paratype from China, Yunnan, 10 km NE from Tengchong, Zing Hai Lake env. (CRNS); 44-45. *B. (O.) vaillanti* Schuler, Holotype (MNHP); 45-46. *B. (O.) vaillanti* Schuler specimen from China, Nei Mongol, Bayan-Gol (CTVR); 46-47. *B. (Terminophanes) zierisi* n. sp., Paratype from China, Tibet, Lungmar Valley (CTVR). Scale = 1 mm.
dish brown, 2 dark brown, 3-5 piceous, 6-11 gradually paler, from dark brown to reddish brown. Maxillary palpus with penultimate article dark brown, iridescent, ultimate article red. Legs with color various: femora dark brown, with some iridescence and slight bluish lustre, slightly paler near knee; tibiae of the same colour of knee, except fore tibiae, reddish at tip; tarsi reddish.

Head slightly narrower than pronotum, frontal furrows parallel, uneven, ended at base with some punctures. Eyes relatively small. Antennae rather short.

Pronotum (pw/pl = 1.30) small (ew/pw = 1.69), with lateral margins slightly arcuate, sinuate before posterior angles, with lateral channel sharp. Median longitudinal impression and anterior transverse impression shallow. Base with broad depressed fascia, finely punctate, basal foveae small, round, punctate. Lateral basal carina difficult to see, but present, very sharp and short, relatively distant from lateral margin. Posteralateral angles slightly obtuse, long. From base of lateral basal carina to front angles, transverse rugosities, more evident adjacent to sinuation of lateral margin. Basal margin evidently arcuate, with basal convexity. Basal margin slightly wider than anterior margin.

Elytra (el/ew = 1.51) oval, with square humeri, lateral margins arcuate, maximum width posterior to middle, and apex pointed. Striae 1-7 deeply impressed, complete, punctate and sulcate. Elytral intervals convex in the holotype, flat in both paratypes. Parascutellar stria short, punctate. Apical stria shallow, short, with a seta at its basal end, slightly apically to connection with stria 5. Discal setigerous punctures two on interval 3, hind one at middle of interval, front one at lateral third of interval.

Microsculpture absent from head. Pronotum with microlines very fine, almost invisible scattered along lateral margins of disc, in form of broad, transverse, flat, sculpticells. Elytra with similar microsculpture here and there on entire surface.

Male genitalia (Fig. 48). Typical external shape of phallus (short, slightly arcuate) and typical sclerites (small central brush and short tubular flagellum S shaped) of radians group. Peculiar, markedly sclerotized sclerite near middle of ventral margin, with triangular basal portion, apex toward base of phallus, and a "boomerang-shaped" process toward apex and extended up to dorsal side of endophallus. Anterior branch of "boomerang" in form of a right angle with ventral margin. The paratype from Sichuan shows a slightly different shape of the triangular basal portion of the "boomerang sclerite", which is in position more dorsoapical and apparently rotated, probably due to an artifact in the preparation.

Geographical distribution

Known from few localities in the southwestern Chinese Province of Yunnan and Sichuan.

Affinities

Apparently isolated within the radians group. The position of the discal elytral setigerous punctures in this species is once again a demonstration of the impossibility to give to this character a strong importance in the generic diagnosis in the Bembidiina.

B. (Ocydromus) rapola n. sp.
(Figs. 41, 49)

Diagnosis

Very small Chinese species of radians group showing a depressed, wrinkled surface on head and pronotum and a pronounced, almost isodiametric mesh pattern of microsculpture.

Type locality

China, Sichuan, Dali Tibet. Pref. Yajiang Co., Shalui Shan, Bachtal 6 km WSW Yajiang, 3250m, 30°01'N 100°57'E.

Type series

Holotype, ♂, "China, W-Sichuan, Dali Tibet. Pref. Yajiang Co., Shalui Shan, Bachtal 6 km WSW Yajiang, 3250m, 30°01'N 100°57'E, Laubstreu, Rinde, Pilze, 4.VII.1999" (CBWE); paratypes: 2♂ 3♀, same date and locality as the holotype (CBWE, CTVR). 2♂ 1♀, "China - Sechuan, Jitiang, 3.7. - 14.7.2001" (CKSB, CTVR); 1♀, "China - W Sichuan, Abaco - Barkam env., VII. 1994, m4000" (CFPI); 1♀, "Cina - W Sichuan, Zhi-Long (Shou Ji), 3-8.VIII.92" (CSMI); 1♂, "China, W.W. Sichuan, Qingmai 3000m, N 28°48'46.7", E 099°52'09.2", 3.7.2006" (CJPH); 1♂, "China, N-Sichuan, 30 km W Nanping, 13.-15.VI.1992, Jiuzhaigou, 3100 m" (CSMI); 1♂, "China, W Sichuan, pass Zhangla - Nanping, 22.6.1996, 4000m" (CJPH); 1♂, "China, C-Sichuan, Suecheng, Sammo 3500m, N 31°46'29" E 103°07'10", 1.7.2004" (CJPH); 1♀, "China, C-Sichuan, Jintang, Jajin Shan, 3400m, N 30°22'45", E 102°16'444", 15.6.2002" (CJPH); 1♀, "China Gansu, Win Shan range /0 km N.W. Wudu, 1- VI-97" (PIAME); 1♀, SE Tibet, "Chola Shan pass, road Yanjing - Markam 50 km S Markam, 4400m, 29°16'N, 98°38'E, mixed forest, 24-27.VI.1997" (CTVR).

Derivatio nominis

The specific epithet is based on a word in Verona's
dialect meaning "wrinkle", because this species shows a wrinkled surface here and there on pronotum and head, and coarse microsculpture mesh on elytra. The name is given in apposition.

**Description**

Length 3.32 to 3.86 mm.

Colour. Head and pronotum black, metallic, with pronounced bronze reflections; elytra from dark brown to metallic black with more or less strong bronze reflections. Antenna bicolored; antennomere 1 and basal articulation of antennomeres 2 to 4 red, apical portions of 2-4 and 5-11 dark brown to piceous. Legs various: most specimens entirely dark red, some specimens with femora darker.

Head small with short neck, convex, frontal furrows parallel, uneven. Eyes small. Antennae and legs short.

Pronotum (pw/pl = 1.39 to 1.40) transverse, flat, wide compared to elytra (ew/pw = 1.48 to 1.50) with lateral margins slightly rounded, more or less long situation anterior to posterolateral angles. Lateral channel narrow, median longitudinal impression and anterior transverse impression rather deep. Base rugose and finely punctate, basal foveae round, deep, large, limited toward lateral margins by a long, sharp carina. Dorsal surface with many long wrinkles, extended from lateral channel, basal impression, and median longitudinal impression to the more convex areas of the disc. Posterolateral angles from slightly obtuse to slightly acute. Basal margin slightly arcuate, with posterior convexity.

Elytra relatively narrow (el/ew = 1.51 to 1.59) with square humeri, lateral margins slightly rounded and apex rounded. Striae 1-6 complete, punctate and sulcate, stria 7 shallower, represented in few specimens by a row of shallow punctures, more evidently impressed in some specimens. Parascutellar stria long, punctate, apical stria deep, with a seta in its anterior third. Discal setigerous punctures two on interval 3, near stria 3, in some specimens directly on stria.

Male genitalia (Fig. 49). Phallus slightly arcuate, falciiform, endophallus with typical central brush and sinuate tubular flagellum of *radians* group.

Female genitalia. Spermatheca simple with long duct, annulus receptaculi slightly sclerotized and reservoir distinctly sclerotized, evidently narrower than in *B. joachimschmidtii*, "8" shaped, apparently divided into two cavities.

**Affinities**

This species is clearly a member of the *radians* group, based on details of the sclerites of endophallus, but in the habitus it seems isolated from the other species of the group.

*B. (Oryctonus) yuae* n. sp. (Figs. 42, 50)

**Diagnosis**

Species relatively large for *radians* group, similar in habitus to *B. moritai* Toledano in the markedly convex elytra and small, convex, pronotum, but recognizable by the longer antennomeres and the presence of a shallow, finely transverse microsculpture mesh on elytra.

**Type locality**

China - C. Sichuan (Tianguan) pass Tiangan - Luding, 29°52'N, 102°17'E, 3000 m.

**Type series**

Holotype, ♂, "China - C. Sichuan (Tianguan) pass Tiangan - Luding, 29°52'N, 102°17'E, 3000 m, 23.7.2001" (CTVR); paratype, 1 ♀, "China, Guizhou, Xishui County, 28.3N, 106.2E, Xishui Natural Reserve (Dabaitang village), 600m, 2000.9.26-27" (IZAS).

**Derivatio nominis**

The specific epithet is a patronym based on the surname of Prof. Yu Peiyu of Beijing University, who kindly lent me the female paratype. This species is dedicated to her.

**Description**

Length 4.60 to 4.62 mm.


Head relatively small, frontal furrows parallel, distinctly punctate at base. Eyes relatively small.

Pronotum (pw/pl = 1.23 to 1.28) convex, cordate, distinctly narrower than elytra (ew/pw = 1.74) with lateral margins rounded in anterior 3/5 then slightly sinuate anterior to posterolateral angles. Lateral channel narrow, median longitudinal impression and anterior transverse impression shallow, basal margin slightly arcuate with basal convexity. Base punctate, basal foveae small, round, deep, with punctate surface, laterobasal carina absent.

**Geographical distribution**

Known from the Chinese Provinces of Sichuan, Gansu and Tibet.
Metaventral process distinctly bordered.
Elytra (el/ew = 1.49 to 1.57) markedly convex, subovate, with square humeri, maximum elytral width slightly posterior to middle, and apex somewhat pointed. Striae 1-7 punctate, gradually less impressed posteriorly, and disappeared near apex, except stria 1 only sulcate at apical fourth and extended to apex. Parascutellar stria long, punctate, apical stria short and superficial with a setigerous puncture on its basal end. Discal setigerous punctures two on interval 3, anterior one in small fovea, extended across almost width of interval.

Microsculpture absent from head and pronotum, except base of neck with mesh pattern isodiametric, microlines shallow, on elytra, mesh pattern markedly transverse, sculpticells very narrow and flat. Male genitalia (Fig. 50). Phallicus slightly arcuate, with extremely narrow apex; endophallus typical of radians group, i.e. with oval, elongate central brush at basal third, a short tubular flagellum beginning basally to central brush; rudiment of a stylet present, doubling flagellum at its apical end.

Female genitalia. Spermatheca simple, with small reservoir almost cylindrical with rounded ends, apparently divided in three cavities. Annulus receptaculi not sclerotized.

Geographical distribution
Known from the southwestern Chinese Provinces of Sichuan and Guizhou.

Affinities
Among the species of radians group B. yuae is most closely related to B. mortai, based on extreme similarity in body structure.

B. (Ocydromus) dauricum Motschulsky, 1844

During this study I recognized the presence of this species in China. I include it in the radians group sensu Toledano (2000) because this species shares the main diagnostic characters of the group (small, dark, metallic, with armature of the endophallus with central brush near base, lack of developed stylet, and presence of a short, slightly sinuate flagellum).

Examined material
1 ex., China SE Qinghai, r. Toramarkog - Nangqen, 30 km N Nangqen, 24.6.95, 3500m (CFPI); 1 ex., China SE Qinghai, r. Toramarkog - Nangqen, pass 20 km N Nangqen, 26.6.95, 4500m (CSMI); 1 ex., China, S Gansu (Labrang), valley E of Ponggartang, 36.13.25N/102.54.17E, 3000m, coniferous forest remains, 10-14.VII.1999 (CJPH); 4 exx., China Dinghai, Laji Shan range, Chen - Hu vill., VII-97 (PIME, CTVR); 2 exx., China: Qinghai Prov., Kokonor Lake, Helmahe, 9-21.VII.1996, 3200-3250m (SMNS, CTVR); 2 exx., China Kansu mer., XLae (Labrang) 1-15.VI.1998, 3300-3700m (CBUL, CTVR); 1 ex., Mongolia 100km NW of Tietserleg: Arkhangay, 100°19'E, 47°48.5'N, 18.VII.2004 (CBUL); 2 exx., China Qinghai reg., 120 km W of Qinghai Hu, Tianjum 3-4.7.1990 (CPMI, CTVR); 2 exx., China W Sichuan prov., Hongyuan, ca 4200m, 21.7-3.8.1991 (CPMI, CTVR); 1 ex, China S Qinghai, 117/7.1995, 32.53N 96.41E, 10 km E Doramarkog pass 4200m, alp. meadow (CTVR); 4 exx., E Tibet, Bamda env., 4400m, 30°15'N, 97°16'E, grassland, 5.VII.1997 (CTVR); 4 exx., NE Tibet (Bachen), distr. Na La (2 km W) 4100m ca., 7.VII.1995 (CDMI, CTVR); 1 ex., China C Sichuan, Xurecheng, Sammo 3500m, N 31°46'.29", E 103°07'.10", 1.7.2004 (CJPH).

B. marginipenne Solsky, 1874 species-group Bembidion subgenus Ocyturanes Müller-Motzfeld, 1986 auct.

Systematic notes
Within the complex of species-groups belonging to Ocydromus sensu lat. the marginipenne species-group could probably be regarded as an independent subgenus based on the presence of a postulated autapomorphic male genital character in its species, the "Membranoser Sac" (Müller-Motzfeld, 1986), i.e. a cylindrical, tubular sclerite in dorsal position, rather close to the basal opening of the phallicus. However, differences in male genital features of the Mediterranean species pair B. dudichi Csiki, 1928 and B. gudenzii Neri & Pavesi, 1982 lead me to doubt the validity of Ocyturanes as a subgenus. Although both species, sister species in the opinion of most specialists, show habitus and male genitalia extremely similar to each other, B. dudichi shows the "membranoser sac", whereas B. gudenzii lacks this character. Certainly, at present, we may include both species in the same species-group, and if we would rank Ocyturanes as a subgenus, both species could be attributed to it, accepting B. gudenzii as an extreme development of a tendency to reduction of the "membranoser sac". Nevertheless, the inclusion of gudenzii within Ocyturanes is possible only because we know the male genitalia of B. dudichi. If B. dudichi were not known at present, who could attribute B. gudenzii to Ocyturanes? In other words, either B. gudenzii be-
longs to a subgenus independent from *Ocyturanae* and the similarities with *B. dudichi* are due to convergence, or the "Membranoser Sac" is not a diagnostic character for *Ocyturanae*. How many known species lacking the "Membranoser Sac" could be sister species of unknown sister species showing it? Waiting for a decision on this matter that I am not able to take at present, I prefer to rank at least provisionally the species usually attributed to *Ocyturanae* as belonging to the *marginipenne* species-group of *Ocydromus sensu lato*, and to attribute the following new species to this group.

* B. (Ocydromus) kareli* n. sp.  
(Figs. 43, 51)

**Diagnosis**

A Chinese metallic green *marginipenne* species with red legs, very similar in habitus to the western Palaearctic *B. (Peryphiolus) monticola* Sturm, 1925.

**Type locality**

China, Yunnan, Daju.

**Type series**

Holotype, ♂, "Cina, Daju, 5/93" (CTVR); paratypes: 1 ♂, 1 ♀, "China, Yunnan, 1800m, Lijiang 23.6. - 21.7.1992, 28.53N 100.18E" (CRNS, CBUL); 1 ♀, "China - Yunnan prov., 10km NE Tengchong, Zing Hai lake env., 27.10.1999, Behai Nat. Wetland Preserved Region, gravelly stream with muddy pools" (CRNS).

**Derivatio nominis**

The specific epithet is a patronym, based on the given name of my dear friend Karel Rebl, an able specialist in Palaearctic Bembidiana from Czech Republic, within whose huge collection I found two specimens of the type series. This species is dedicated to him.

**Description**

Length 4.52 to 4.98 mm.

Colour. Body dark metallic green, with iridescence on elytral lateral margins. Antennae bicolored; antennomeres 1-3, and basal half of 4 light red, apical portion of 4 and 5-11 dark, except apex of 11 light red. In the female paratype from Zing Hai lake also the apical half of antennomere 3 darkened. Legs light red.

Head slightly narrower than pronotum, frontal furrows deep, parallel. Eyes moderately convex. Antennae elongate.

Pronotum cardate, transverse (pw/pl = 1.29 to 1.30) evidently narrower than elytra (ew/pw = 1.57 to 1.71).

Lateral margins sinuate anterior to posterolateral angles. Lateral channel wide, median longitudinal impression and anterior transverse impression shallow. Base punctate, with deep basal foveae, rugose-punctate, laterally delimited by a sharp laterobasal carina. Basal margin slightly arcuate with basal convexity. Posterolateral pronotal angles right or slightly obtuse, but sharp. Basal margin slightly wider than anterior margin.

Elytra (dl/ew = 1.43 to 1.49) with humeri square, lateral margins slightly rounded, almost parallel, apex round and markedly convex. Striae 1-6 finely punctate, 7 shallower, disappeared near apex. Parascutellar stria long, punctate. Apical stria various, from deep to almost absent, with a seta. Discal setigerous punctures two on interval 3, almost in stria 3.

Male genitalia (Fig. 51). Phallic arcuate, with a ventral gibbosity in middle of ventral border. Typical dorsobasal tubular sclerite of *Ocyturanae* in the endophalus; other sclerites identical to those of *radius* group.

Female genitalia. Spermaticca simple with long duct, annulus receptaculi not sclerotized and reservoir distinctly sclerotized, globoid, with pointed apex at the beginning of the duct, apparently divided into two cavities.

**Geographical distribution**

Known from the Chinese Province of Yunnan.

* B. modestum* Fabricius, 1801 species-group  
*Bembidion* subgenus *Ocydromus* Clairville s.str. auct.

* B. (Ocydromus) yunnanum* Andrewes, 1923  
≡*B. niedli* Jedlička, 1965a

**Examined material**

Holotype, ♂, "Yunnan foul" (NHML)

* B. (Ocydromus) yunnanum* ssp. spectans* Jedlička, 1933 new status  
*Bembidion spectans* Jedlička, 1933

During this study I determined that the unspotted specimens of *B. yunnanum* Andrewes from Sichuan (Toledoano 2000) are identical to the type of *B. spectans* Jedlička, 1933 (NMPC). At present I was unable to see spotted specimens from Sichuan and unspotted specimens from Yunnan, therefore *B. spectans* Jedlička is downgraded to subspecies of *B. yunnanum* Andrewes.

**Examined material**

Holotype, ♂, "Tatsienlu" (NMPC); 1 ♀, China,
B. saxatile Gyllenhal, 1827 species-group  
*Bembidion* subgenus *Ocydromus* Clairville

* s.str. s.str.

*B. (Ocydromus) saxatile vaillanti* (Schuler, 1955)

new status
(Figs. 44, 45, 52)

*Peryphus vaillanti* Schuler, 1955

*Bembidion vaillanti* (Schuler, 1955)

During my visit to the Musée National d'Histoire Naturelle de Paris, thanks to the kindness of Dr. Deuve and Mrs. Taghavian I was able to examine the type of this previously inadequately studied species, known from the literature only by the short, original description and by the notes of Jedlička (1965). The examination of the type specimen revealed that this taxon is conspecific with *B. saxatile* Gyllenhal, 1827 (as suggested also by Gerd Müller-Moritzfeld, personal communication).

**Diagnosis**

A Chinese species with rather pale elytra, four-spotted in some individuals, showing punctuation behind frontal sulci, similar to the typical habitus of the *marginipenne* species-group, i.e. narrow, cordiform pronotum and elongate elytra with maximum width posterior to middle but with male genitalia almost identical to *B. saxatile*, lacking the typical feature of the *marginipenne* group, i.e. a dorsotubular sclerite (see above *B. kareli*).

**Examined material**

Holotype, ♂, de Cha Tchou au Nan Chan, 1900 à 2600m, Mai 1908. Museum Paris, Nan-Chan, Dr. L. Vaillant 1909 (MNHP); 2 ♂, 1 ♀, China, Nei-Mongol, Wuai, 8-13.5.1996 (CKSB, CTVR); 1 ♀, China, Nei-Mongol, Bayan Gol, 14-20.5.1996 (CKSB); 1 ♀, Mongolia, Gobi, Gurvan Saykhan N.P., 40 km W Dalanzadgad, -3000m 28-30.VI.2003 (CBUL).

**Redescription**

Length 4.30 to 4.72.

Colour. Head and pronotum piceous-black with faint, greenish reflections. Elytra reddish unicolorous in the type. The remaining examined specimens show a darker transverse band apically delimiting two large yellow spots entirely covering apical fourth of elytra, with a pattern reminding *B. testaceum* Duftschmid, 1812. In two specimens elytra four-spotted with slight darkening of elytral suture. All appendages red.

Head broad, only slightly narrower than pronotum. Eyes convex. Antennae relatively short (d/l = 1.79 to 1.82).

Pronotum small, cordate, (pw/pl = 1.29 to 1.32) evidently narrower than elytra (ew/pw = 1.57 to 1.61) with basal margin narrower than anterior margin. Lateral margins distinctly rounded in anterior 4/5 then sinuate anterior to posterolateral angles, latter right, (slightly obtuse in one specimen), with a seta. Lateral seta at anterior third, lateral channel narrow. Anterior transverse impression and median longitudinal impression evident but not deep, base punctate with small, deep, round foveae, laterally delimited by a short carina. Basal margin slightly arcuate, with basal convexity.

Elytra (el/ew = 1.60 to 1.63) long and parallel, with square humeri. Striae 1-7 complete, finely punctate, stria 7 more superficial only in the type specimen. Parascutellar stria long, punctate; apical stria normal, not deep, with a seta approximately in middle. Discal setigerous punctures two on interval 3, adjoining stria 3, anterior one almost exactly on stria.

Legs, including femora, very thin.

Microsculpture with microlines shallow; mesh pattern on neck isodiametric; mesh pattern on pronotum broadly interrupted, transverse, microlines very shallow, sculpticells transverse, wide, located in isolated spots; mesh pattern on elytra evident, transverse, sculpticells rather short, not regularly aligned, giving impression of an isodiametric mesh pattern.

Male genitalia (Fig. 52). Phallus slightly arcuate, with apex thin, short and narrow; endophallus with central brush in diagonal position showing anterior end with an undulation, a clearly sclerotized styllet and a sclerite recalling the “membranoser sac” of *marginipenne* group (actually basal end of the thin flagellum) (apical part...
Figs. 47-53 - Phallus of: 47) *Bembidion (Oxydromus) joachimschmidtii* n. sp., Holotype (CWBE); 48) *B. (O.) baihuanum* n. sp., Holotype (CTVR); 49) *B. (O.) rapola* n. sp., Paratype from N Sichuan, Jiuzhaigou (CSMI); 50) *B. (O.) yuza* n. sp., Holotype (CTVR); 51) *B. (O.) kareli* n. sp., Paratype from China, Yunnan, 10 km NE from Tengchong, Zing Hai Lake env. (CRNS); 52) *B. (O.) vaillantii* Schuler specimen from China, Nei Mongol, Bayan-Gol (CTVR); 53) *B. (Terminaphes) zierii* n. sp., Paratype from China, Tibet, Lungmar Valley (CTVR). Scale = 1 mm.
of flagellum covered by the stylet in left lateral aspect; small group of scales at apical end of stylet. (Male genitalia almost identical in detail to those of B. saxatile fuscomaculatum Motschulsky in most characteristics, only smaller and with a less developed flagellum).

Female genitalia. Spermatheca simple with long duct, annulus receptaculi not sclerotized and reservoir distinctly sclerotized, "8" shaped, apparently divided into two oval cavities.

Geographical distribution

Known from China, from the type locality and from Inner Mongolia. Unfortunately at present I do not know the location of the type locality, being reported on the label as the old Tibetan name. My friend Dr. Pierfranco Cavazzuti kindly suggested that the most likely current name for "Nan Chan" should be Nan Shan, a mountain range situated at about 500 km from the other locality where this species is known to me. Of course such a distribution is not atypical for Bembidini, but perhaps the differences in the colours between the type (Nan Shan) and the other specimens (Wuhai, Inner Mongolia) could lead to refer these latter specimens to a new subspecific taxon. At present this matter is left in abeyance.

B. petrosum Gyllenhall, 1827 species-group
Bembidion subgenus Peryphus Stephens, 1828 auct.

B. (Ocydromus) petrosum Gyllenhall, 1827
  =rubidum Andrews, 1924
  =siebeeki Sparre-Schneider, 1910
  =wagneri Tschitscherine, 1893
  =casatilum Casey, 1918
  =exiguiceps Casey, 1924
  =lepsculum Casey, 1918
  =lucidum LeConte, 1848 nec Faldermann, 1835
  =subinflatum Motschulsky, 1859
  =substrictum LeConte, 1848
    =wenatschee Hatch, 1950
  =dolorosum Lindroth, 1962 nec Motschulsky, 1850

This is the first citation of this species for China.

Examined material

Bembidion subgen. Terminophanes Müller-Motzfeld, 1998
(=Type species: Bembidion terminale Heer, 1841)
Bembidion (Ocydromus) group terminale Heer, 1841 auct.

Systematic notes

The species of the group of B. terminale Heer have been included by Müller-Motzfeld (1998) in Terminophanes, a subgenus that he described. The diagnostic characters given by him are absence of punctuation at the pronotal base and, mainly, the presence of a distinctive sclerite ("tricorned body", Lindroth, 1963) in the endopallus. I included B. roberti Toledano, 2000 and B. muellermotzfeldi Toledano, 2000 in the subgenus Ocydromus sensu lato, with Terminophanes intended as a species-group of this subgenus (Toledano, 2000). Lorenz (2005), for this reason, included both of those species in the subgenus Ocydromus (sensu stricto). The same applies to B. baebri Toledano, 2000, B. echarouxi Toledano, 2000 and B. maddisoni Toledano, 2000, belonging to the baebri group of Ocydromus (sensu lato) not to Ocydromus (sensu stricto).

Lorenz (2005) listed Terminophanes as a valid subgenus. Now, I agree with this decision because the similarity in habitus of its species with some species-groups within Ocydromus sensu lato seems phylogenetically less important than the "tricorned body", shared by all the species of Terminophanes and absent otherwise from the entire genus Bembidion. This feature permits clear separation of this species assemblage from the subgenus Ocydromus (sensu lato).

Therefore B. roberti and B. muellermotzfeldi are here transferred to Terminophanes, while I confirm my (2000) attribution of B. baebri, B. echarouxi and B. maddisoni, to the baebri group of Ocydromus (sensu lato) (see the new edition of the provisional checklist, Toledano, 2008).

B. (Terminophanes) ovaliperne Solsky, 1874

During this study I was able to examine few specimens of B. ovaliperne from the western Chinese Province of Xinjiang. This is the first citation of this species for China.

Examined material
4 exx., China, Xinjiang, ca 2800m, N slope of Tian Shan mts., road Kuqa-Bayanbulak, 50 km S Bayanbulak, 1993 (CPM, CTVR); 1 ex., China, Xinjiang Prov., Shengli Daban pass S slope, 3000m, 25.6.04 (CBUL).
B. (Terminophanes) leve Andrewes, 1924

This species was formerly ranked as Bembidionetolitzekya (Lorenz, 1998) and as Bembidion incertae sedis (Marggi et al., 2003; Lorenz, 2005). The presence of the "tricorne body" in the endophallus reveals that the species belongs to the subg. Terminophanes.

Examined material
Holotype,  ♂ , "Ladack, Mulbeck, (Frontiere Tibet), G. Babault, Aout 1914", (NHML); 1 ♂ , 1 ♀ , Cachemire, Kharbu, Ladak, 13/3/78 (CTVR).

B. (Terminophanes) zierisi n. sp.  
(Figs. 46, 53)

Diagnosis
A relatively small southwestern Chinese Terminiophanes with extremely oval elytra. B. roberti is easily distinguishable from B. zierisi by the elongate elytra, B. muellermotzfeldi by the longer and more parallel elytra and the larger size. B. ovalipenne Solsky, 1874, occurring in the western Chinese province of Xinjiang, is perhaps the most similar known species to B. zierisi; but it easy recognizable by the larger size, the longer elytra and the different pronotum (smaller and with lateral margins evidently less sinuate anterior to posteroangular angles).

Type locality
China, Tibet, Lungmar valley, 28°52'18"N, 89°56'26"E.

Type series
Holotype,  ♂ , "China Tibet, Lungmar valley, 28°52'18" 89°56'26", 22.6.2005" (CZPR); paratypes: 3 ♂ , 11 ♀ , same date and locality as the holotype (CZPR, CTVR).

Derivatio nominis
The species is dedicated to Vladimir Zieris, Pardubice, Czech Republic, who kindly gave me in study the whole type series.

Description

Head slightly narrower than pronotum, frontal furrows deep, parallel. Eyes convex. Antennomeres elongate.

Pronotum cordiform, transverse (pw/pl = 1.32 to 1.36) (ew/pw = 1.68 to 1.79) with lateral margins rounded, then sinuate at about posterior fifth, anterior to posteroangular angles. Lateral channel narrow, basal margin rectilinear, slightly wider than anterior margin. Median longitudinal impression and anterior transverse impression not deep but evident. Basal foveae small but rather deep, base corrugated and shallowly punctate. Posteroangular angles right and rather sharp. Laterobasal carina absent. Some shallow transverse rugosities at lateral margins.

Metaventral process bordered.

Elytra (el/ew = 1.48 to 1.53) oval, depressed, with humeri relatively narrow but not distinctly rounded. Elytral striae shallowly punctate, almost complete, only stria 7 shallower and disappeared slightly beyond middle. Parascutellar stria long, punctate, apical stria not deep, connected with end of stria 7. Discal setigerous punctures two on interval 3 adjoining stria 3, almost exactly on the stria. Intervals flat.

Legs elongate.

Microsculpture mesh pattern of head isodiametric, each sculpticell convex. Pronotum and elytra with mesh pattern more transverse (but, at low magnification apparently isodiametric) sculpticells flat, irregularly distributed.

Male genitalia (Fig. 53). Sclerotized brush slightly protruded from basal opening, rather long, laminar, lightly sclerotized sclerite connected with sclerotized brush and extended almost to anterior third of endophallus. Tricorne body rather thick, dorsal ostium very large (as in most Terminiophanes species).

Female genitalia. Spermatheca simple, with slightly coiled duct, lightly sclerotized, reservoir elongate, apparently divided in three chambers, and annulus recep
taculi not sclerotized.

Intraspecific variability
A single paratype (CZPR) is smaller than the other specimens of the type series (3.96 mm), but for the remaining characters it is identical to the others. Being so different in size I consider it as aberrant, and so did not include its measurements in the description of the species.

Geographical distribution
Known only from type locality in the southwestern Chinese Province of Tibet.
CONCLUSIONS

In the light of this study, the number of known species of Bembidina from China grows again (as at present known, 4 genera, 183 species in total), and as far as I can determine from the dozens of undescribed species I still have for study it will grow even more. The Chinese fauna shows once more its marked tendency to endemism. Many Chinese species show intermediate characters between groups that in other regions are easy to recognize. Usually I explain this marked biodiversity with the presence in China of important biogeographical barriers that can isolate populations and give rise to numerous indigenous species through genetic drift. But a suggestive hypothesis could be that some supraspecific Palaeartic and Holarctic groups actually arose in China and then migrated to the other regions. Therefore, the Chinese fauna is very abundant in species and rich in transitional forms between subgenera that in other areas of the Holarctic region seem to be clearly independent of one another.

As I hypothesized (Toledano, 2005) for a few supraspecific groups of Bembidina (for example, Philochirus Stephens and Nesophocaampa Netolitzky), perhaps many other subgenera occurring now in the Palaeartic Region had a Gondwanian (Southern Hemisphere) origin. Some parts of Southwestern China probably were originally part of the Gondwanian Indian tectonic plate when the latter joined with Laurasia. Such an area could have been one of the main centers of dispersal northward of Gondwanian Bembidina in the Holarctic Region. These lineages increased substantially the diversity and divergence of the bembidine fauna of this region.

ACKNOWLEDGEMENTS

I thank my friend Dr. George Ball for the revision of the text, linguistic, but also scientific, during which, with his well known kindness, patience and competence, he gave me lots of instruction that I followed in this paper and I'll follow during my activity as an entomologist all my life long. I also thank the many other friends and Institutes that kindly allowed me to examine their material or helped me in other ways: Dr. Max Barclay (Natural History Museum, London), Dr. Petre Bulirsch (Prague), Dr. Carlo Brivio, (P.I.M.E. Monza), Dr. Pier Franco Cavazzuti (Pagon), Dr. Jon Cooter (Hereford), Mr. Stefano Dacatra (Milano), Dr. Thierry Deuve (Musée National d’Histoire Naturelle, Paris), Dr. Sergio Facchini (Piacenza), Dr. Conrad Gillett (Natural History Museum, London), Dr. Vasili Grebennikov (Ottawa), Dr. Jiri Hajek (Narodni Muzem, Prague), Prof. Fritz Hieke (Humboldt-Universität Museum für Naturkunde, Berlin), Dr. James E. Hogan (Hope Entomological Collections, Oxford University Museum of Natural History), Dr. Dr. Manfred Jäck (Naturhistorisches Museum, Wien), Dr. Berndt Jaeger (Humboldt-Universität Museum für Naturkunde, Berlin), Mr. Miroslav Janata (Prague), Dr. Josef Jelinek (Narodni Muzem, Prague), Mr. Rudolf Kmeč (Litovel), Mr. Emil Kucera (Sobeslav), Dr. Hongbin Liang (Institute of Zoology, The Chinese Academy of Sciences, Beijing), Dr. Werner Marggi (Thuin), Mr. Maurizio Pavesi (Milano), Mr. Andrey Plutenko (Smolensk), Dr. Andreas Pütz (Eisenhuttenstadt), Mr. Joachim Schmidt (Rostock), Dr. Wolfgang Schawaller (Staatliches Museum für Naturkunde, Stuttgart), Dr. Harald Schillhammer (Naturhistorisches Museum, Wien), Dr. Heiner Schönbann (Naturhistorisches Museum, Wien), Mr. Dr. Riccardo Sciaky (Milano), Mr. Jury Sundukov (Lazo), Mrs. Azadeh Taghavian (Musée National d’Histoire Naturelle, Paris), Dr. Andrea Tagliapietra (Verona), Dr. Manfred Uhlig (Humboldt-Universität Museum für Naturkunde, Berlin), Dr. David Wrase (Berlin), Dr. Prof. Yu Peiyu (Institute of Zoology, The Chinese Academy of Sciences, Beijing), Dr. Lothar Zerche (Deutsches Entomologisches Institut, Eberswalde), Mr. Vladimir Zietis (Pardubice).

Special thanks are due to my friends Jon Cooter for the linguistic revision of the last additions to the text and Gerd Müller-Morzfeld for the critical revision of this manuscript.

As usual, I warmly thank my beloved wife Rebecca for her constant support in entomology and life.

REFERENCES

Review of the species of *Bembidion* subg. *Bembidionetolitzky* Strand, 1929 from Southwestern China and Tibet with description of 22 new taxa (Coleoptera, Carabidae, Bembidiina)

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The research of the second author was supported in part by the German Research Council (DFG) grant MI 271/201

ABSTRACT

This study deals with the species of *Bembidion* subg. *Bembidionetolitzky* Strand, 1929 from Southwestern China, including the region of Tibet. Diagnostic characters to differentiate this subgenus from subgenus *Plataphus* Motchulskiy, 1864, are presented. *Tibetoplatus* Schmidt, 2003, formerly described as a separate subgenus of *Bembidion* Latreille, 1802, is identified as a terminal taxon within a species group of Tibetan *Bembidionetolitzky* and therefore, it is proposed to be a junior synonym of the latter. 22 new species and subspecies are described in this paper. The number of species and subspecies of *Bembidionetolitzky* known from the mountains of Western China and the Tibetan Plateau is increased to 29. A key for all these species is provided.

Nomenclatural acts proposed in this paper:

New taxa:

*Bembidion* (Bembidionetolitzky) sertanai n. sp. (Western Sichuan), *Bembidion* (Bembidionetolitzky) cooteri n. sp. (Central Sichuan), *Bembidion* (Bembidionetolitzky) rilong n. sp. (Central Sichuan), *Bembidion* (Bembidionetolitzky) jinnangi n. sp. (Central Sichuan), *Bembidion* (Bembidionetolitzky) liangi n. sp. (Northwestern Yunnan), *Bembidion* (Bembidionetolitzky) toledanoi tobanum n. sp. (Eastern Qinghai), *Bembidion* (Bembidionetolitzky) toledanoi sertarense n. sp. (Western and Central Sichuan), *Bembidion* (Bembidionetolitzky) toledanoi rawuense n. sp. (Tibet, Raku-Basni), *Bembidion* (Bembidionetolitzky) toledanoi zhongdianicum n. sp. (Northern Yunnan), *Bembidion* (Bembidionetolitzky) ruffoi n. sp. (Southern and Eastern Qinghai, Eastern Tibet and Northwestern Sichuan), *Bembidion* (Bembidionetolitzky) degeneri n. sp. (Eastern Tibet), *Bembidion* (Bembidionetolitzky) mikyskai n. sp. (Western Sichuan), *Bembidion* (Bembidionetolitzky) hetzeli n. sp. (Northwestern Yunnan), *Bembidion* (Bembidionetolitzky) cavazzutii n. sp. (Western Sichuan), *Bembidion* (Bembidionetolitzky) jaroslavi n. sp. (Southern Qinghai), *Bembidion* (Bembidionetolitzky) gorem n. sp. (Southern Qinghai), *Bembidion* (Bembidionetolitzky) persephone nanqenense n. sp. (Southern Qinghai), *Bembidion* (Bembidionetolitzky) longriba n. sp. (Western Sichuan), *Bembidion* (Bembidionetolitzky) bullischianum n. sp. (Eastern Qinghai), *Bembidion* (Bembidionetolitzky) wrezonkoii n. sp. (Central Tibet), *Bembidion* (Bembidionetolitzky) hajelsi n. sp. (Western and Northern Sichuan, Eastern Qinghai, Eastern Tibet and Shaanxi) and *Bembidion* (Bembidionetolitzky) pavesii n. sp. (Western and Northwestern Sichuan, Shaanxi, Eastern Qinghai, Eastern Tibet) are herewith described.


Redescription: Bembidion (Bembidionetolitzky) hamanense Jedlička, 1933, Bembidion (Bembidionetolitzky) cymindulium Andrews, 1924.

Key words: Coleoptera, Carabidae, Bembidiina, Bembidion, Bembidionetolitzky, Palaeartic region, China, Tibet, taxonomy, key to species.

RIASSUNTO

Revisione delle specie di *Bembidion* subg. *Bembidionetolitzky* Strand, 1929 di Cina sudoccidentale e Tibet con descrizione di 22 nuovi taxa (Coleoptera, Carabidae, Bembidiina). Questo studio tratta delle specie di *Bembidion* subg. *Bembidionetolitzky* Strand, 1929 delle regioni della Cina sudoccidentale compresa quella Tibetana. Sono proposti caratteri diagnosticici per differenziare il sottogenere dal sottogenere
Plataphus Moschulsky, 1864. Tibetoplathapus Schmidt, 2003, descritto come distinto sottogenere di Bembidion Latreille, 1802, è qui rie
nato un tassone terminale in un gruppo di specie tibetane di Bembidionetolitzkya e perciò è qui proposto come suo sinonimo junior. 22 nuove
specie e sottospecie sono descritte in questo articolo. Il numero di specie e sottospecie del sottogenere Bembidionetolitzkya note per le montagne
della Cina occidentale e dell’altipiano tibetano aumenta a 29. Si fùrnisce una chiave per tutte queste specie.

Atri nomenclatoriali proposti in questo lavoro:
Nuovi taxa:
Sono qui descritti Bembidion (Bembidionetolitzkya) smetnai n. sp. (Sichuan occidentale), Bembidion (Bembidionetolitzkya) cooteri
n. sp. (Sichuan centrale), Bembidion (Bembidionetolitzkya) rilong n. sp. (Sichuan centrale), Bembidion (Bembidionetolitzkya) jinrangni n.
sp. (Sichuan centrale), Bembidion (Bembidionetolitzkya) liang n. sp. (Yunnan nordoccidentale), Bembidion (Bembidionetolitzkya) toled-
danov tobanum n. sp. (Qinghai orientale), Bembidion (Bembidionetolitzkya) toledanov sertarense n. sp. (Sichuan occidentale e centrale),
Bembidion (Bembidionetolitzkya) toledanov rawunense n. sp. (Tibet, Rawu-Basoi), Bembidion (Bembidionetolitzkya) toledanov zhong-
dianicum n. sp. (Yunnan settentrionale), Bembidion (Bembidionetolitzkya) ruffoi n. sp. (Qinghai meridionale e orientale, Tibet orientale e
Sichuan nordoccidentale), Bembidion (Bembidionetolitzkya) degeense n. sp. (Tibet orientale), Bembidion (Bembidionetolitzkya) mikykhali
n. sp. (Sichuan occidentale), Bembidion (Bembidionetolitzkya) hetzei n. sp. (Yunnan nordoccidentale), Bembidion (Bembidionetolitzkya)
cavazzutti n. sp. (Sichuan occidentale), Bembidion (Bembidionetolitzkya) jaroslavi n. sp. (Qinghai meridionale), Bembidion (Bembidionetolitzkya)
golem n. sp. (Qinghai meridionale), Bembidion (Bembidionetolitzkya) persephone nanqenense n. sp. (Qinghai meridionale),
Bembidion (Bembidionetolitzkya) longriba n. sp. (Sichuan occidentale), Bembidion (Bembidionetolitzkya) bulischiamun n. sp. (Qinghai
orientale), Bembidion (Bembidionetolitzkya) wierzcionkoi n. sp. (Tibet centrale), Bembidion (Bembidionetolitzkya) hajeki n. sp. (Sichuan
occidentale e settentrionale, Qinghai orientale, Tibet orientale e Shanxi) e Bembidion (Bembidionetolitzkya) pavesii n. sp. (Sichuan occi-
dentale e nordoccidentale, Shanxi, Qinghai orientale, Tibet orientale).

Nuova sinonimia (con sinonimo junior elencato per primo): Bembidion subg. Tibetanoplathapus Schmidt, 2003 n. sin. di Bembidion sub-
g. Bembidionetolitzkya Straus, 1929
hingstoni Andrews, 1924, Bembidion hartmanni Schmidt, 2003, Bembidion persephone Andrews, 1926 e Bembidion nivicola Andrews,
1923.

Cambi di status: Bembidion hingstoni Andrews, 1924 sottospecie di Bembidion pluto Andrews, 1924; Bembidion hartmanni Schmi-
Ridecriczioni: Bembidion (Bembidionetolitzkya) hamanense Jedlička, 1933, Bembidion (Bembidionetolitzkya) cymindulum An-
drews, 1924.
Parole chiave: Coleopera, Carabidae, Bembidina, Bembidion, Bembidionetolitzkya, regione tibetana, Cina, Tibet, tassonomia, chiae-
se per specie.

INTRODUCTION

The subgenus Bembidionetolitzkya was formerly thought not to be present in the mountains of western China, and present with only two species (B. livens Andrews, 1930, and B. piceocyaneum Solsky, 1874 (Marggi et al., 2003) in the extreme border of the Tibetan pla-
teau. However, in a recent revision of the subgenus one of us (Schmidt, 2004) found a relatively high number of species occurring over the whole Himalayan mountain arc, and one new species (B. toledanov Schmidt, 2004) was described from the Transhimalaya of Tibet. More-
over, Schmidt (2004) transferred the western Chinese B. hamanense Jedlička, 1933, formerly described within
the holartic subgenus Plataphus Moschulsky, 1864, into the subgenus Bembidionetolitzkya, and he pointed to
a high number of hitherto undescribed species from the eastern border of the Tibetan Plateau. In the light of
these findings he noted that a Tibetan species group with highly derived phallic features which he former-
ly summarized within a separate subgenus (Tibeto-
plataphus Schmidt, 2003) seems only to represent a ter-
minal group within Bembidionetolitzkya. Subsequent-
ly we were able to study many hundreds of specimens
from Tibet and China representing several species
related to Bembidionetolitzkya as well as Tibetanoplathapus. The comprehensive new material now allows us to
present here the redescriptions of the formerly known
cpecies as well as the descriptions of several new species
and subspecies. Furthermore it seems a good base for a
much better understanding to the true infrasubgeneric
variability and therefore, we also will discuss here the
systematic position of Tibetanoplathapus.

MATERIALS AND METHODS

This paper is based on study of 1262 specimens be-
 longing to the Chinese species of subg. Bembidione-
tolitzkya.

Sources of material are the collections of the following
institutions and individuals:

INTRODUCTION

The subgenus Bembidionetolitzkya was formerly thought not to be present in the mountains of western China, and present with only two species (B. livens Andrews, 1930, and B. piceocyaneum Solsky, 1874 (Marggi et al., 2003) in the extreme border of the Tibetan pla-
teau. However, in a recent revision of the subgenus one of us (Schmidt, 2004) found a relatively high number of species occurring over the whole Himalayan mountain arc, and one new species (B. toledanov Schmidt, 2004) was described from the Transhimalaya of Tibet. More-
over, Schmidt (2004) transferred the western Chinese B. hamanense Jedlička, 1933, formerly described within
the holartic subgenus Plataphus Moschulsky, 1864, into the subgenus Bembidionetolitzkya, and he pointed to
a high number of hitherto undescribed species from the eastern border of the Tibetan Plateau. In the light of
these findings he noted that a Tibetan species group with highly derived phallic features which he former-
ly summarized within a separate subgenus (Tibeto-
Some paratypes of the species herewith described will be donated to the Collection of MNSV.

Measurements were made with a Leica MZ12 stereobinocular microscope at 25 x (body) and 100 x (palpi) and are expressed in the text by these abbreviations: 
bl/al  body length / antennal length ratio
pw/pl  pronotal width / pronotal length ratio
pw/bw  pronotal width / head width ratio
cl/ew  elytral length / elytral width ratio
ew/pw  elytral width / pronotal width ratio

The body length was measured from the front margin of the clypeus to the apex of the elytra, the anten
al length from the base of antennomere 1 to the apex of 11, the pronotal width at the point of maximum
convexity of the pronotal sides, the anterior pronotal margin from the middle of the forward projecting an
terior angle of one side to the same point in the other side and the posterior pronotal margin in correspond
ance of the two hind angles. Dissections were made using standard techniques. Genitalia and small parts were
preserved in Euparal on acetate labels fixed on the same 

pins as the specimens. Photographs of habitus were tak
en with a Nikon Coolpix 995 digital camera on a Leica
MZ12 stereobinocular microscope and processed with
the Photoshop Elements 3.0™ program on a Macin

tosh Powerbook G4 computer. Drawings of the phalli
were prepared by using an ocular grid (10x10) on an
Olympus SZ40 stereobinocular microscope.

Bembidion subg. Bembidionetolitzkya Strand, 1929
Bembidion subg. Daniela Netolitzky, 1930
Bembidion subg. Tibetoplataphus Schmidt, 2003 new synonymy

Systematic notes

To show the real identity and the limits of the sub
genus Bembidionetolitzkya Strand, 1929 would be an
ambitious aim of this paper but, since this is a study of
its southwestern Chinese species only, we try to pro
vide here material for a future revision of the subgenus,
which certainly has to be based on the whole Palaeartic
fauna.

A) Limits between Bembidionetolitzkya and Platafhus
Motschulsky, 1864.

The presence or absence of a border at the anteri
or edge of the metaventral process was supposed to be
the most important diagnostic character to distinguish
Bembidionetolitzkya and Platafhus. This, together with
a mistake in the observation of the status of this character by the original describer was the reason for the incorrect attribution of *B. hamanense* Jedlička, 1933 to *Plataphus*. As already demonstrated by Schmidt (2004) the species belongs to *Bembidionetolitzkyia*. The diagnostic characters to distinguish *Bembidionetolitzkyia* and *Plataphus* have already been restudied and redefined (Toledano, 2008a) in order to try to establish the monophyly of *Plataphus*, and mainly regard the body size (on average *Plataphus* smaller than *Bembidionetolitzkyia*), the elytral striae (sulcate in *Plataphus*, punctate or punctate-sulcate in *Bembidionetolitzkyia*), and the aedeagal shape (apex “hatched-shaped” with large dorsal ostium in *Plataphus*, showing normal apex and ostium in the *Bembidionetolitzkyia* species). Also the structure of the metaventral process can be used as a diagnostic character between both subgenera (in general unbordered in *Plataphus*, bordered in *Bembidionetolitzkyia*), but with few exceptions (B. cimmerium Andrews, B. gerdi Michailov, see Schmidt, 2004). In addition and in contrast with the status of this character shown by most *Bembidionetolitzkyia*, the few specimens of the species *B. cymindatum* Andrews, 1930 we could examine, including the holotype, show unbordered metaventral process. The male genitalia and the remaining external characters suggest that the species belongs to *Bembidionetolitzkyia*. During the present study we were able to discover that some other species (e.g. *B. gleem* n. sp. and *B. wrzezonkii* n. sp.) show a variable development of this character, from unbordered to distinctly bordered, also in specimens of the same population, raising doubts on the supraspecific value of this character in *Bembidionetolitzkyia*. This interesting fact was already noticed in *B. cimmerium* by Schmidt (2004).

B) Limits between *Bembidionetolitzkyia* and *Tibetoplataphus*.

The subgenus *Tibetoplataphus* Schmidt, 2003 was founded for a group of species distributed along the Tibetan Himalaya mountain range which are characterized by highly derived features of the endophallus: the medial folds which seem to originate near the central sclerites are well sclerotized and prolonged distally. The prolonged part is at least as long as the most refractive central sclerite. The less refractive and more basal sclerite that normally has the form of a ladle, is largely developed and displaced near the basal orifice (Schmidt, 2003).

The examination of new abundant material allowed us to find several species with intermediate development of these endophallic structures between “classical” *Bembidionetolitzkyia* such as in *B. hamanense*, *B. smetaina* n. sp., *B. toledanoi* Schmidt, 2004 (see figs. 2, 3, 4, 18) or in southern Himalayan species (see Schmidt, 2004) and *Tibetoplataphus*, sharing the remaining structures near the central sclerites. In the light of the discovery of the new species here described, the reason why *Tibetoplataphus* has to be synonymized with *Bembidionetolitzkyia* is the fact that the latter without *Tibetoplataphus* is surely paraphyletic. Although *Tibetoplataphus* can be defined as a monophyly based on strong apomorphies of endophallic characters, from the phylogenetic point of view it is not allowed to put this monophyletic taxon beside *Bembidionetolitzkyia* when it is not the sister taxon of all other *Bembidionetolitzkyia*. Therefore, we state:


**KEY TO THE CHINESE AND TIBETAN SPECIES OF *BEMBIDION* SUBG. *BEMBIDIONETOLITZKYIA* STRAND, 1929**

We try to provide here a key for the identification of the Chinese *Bembidionetolitzkyia* species even though their determination often needs the dissection of male specimens. When the isodiametric microsculpture is mentioned in the key the character relates mainly to the male specimens because in almost all the species dealt with here the females show an elytral microsculpture with sculpticells less transverse than in the males.

1. Four discal elytral pores on each elytron .......................................................... *liangi* n. sp.
   - Two discal elytral pores on each elytron ............................................ 2
   - Elytra reddish ............................................................ 3
   - Elytra darker ......................................................... 4
2. Pronotum narrower (pw/pl = 1.29 to 1.33 ; ew/pw = 1.64 to 1.68), evidently cordiform, species from Xinjiang ......................... *piceocyanum* Solsky, 1874
   - Pronotum wider (pw/pl = 1.38 to 1.45; ew/pw = 1.58 to 1.59), species from southern and eastern Tibet and from Qinghai ....... *toledanoi tobanum* n. sp.
3. Antennomere 1 black ........................................................................ 5
   - Antennomere 1 lighter ................................................................... 14
4. Laterobasal pronotal carina evident ...................................................... 6
   - Laterobasal pronotal carina absent or rudimentary ............................. 7
5. Elytral striae rather deep, stria 7 evident ............................................ 7
   - Elytral striae rather superficial, in rows of fine punctures, stria 7 very superficial or absent ........................................... 8
6. Elytral microsculpture isodiametric, ventral side of antennomere 1 brown ..................... *longriba* n. sp.
   - Elytral microsculpture in slightly transverse sculpti-
cells, antennomere 1 entirely black .........................

Species smaller (4.90 to 5.50 mm) with parallel, flat, black elytra with some metallic bronze reflections ..

- Species larger (5.64 to 6.62 mm) elytra rather convex, suboval, maximum elytral width slightly behind the middle, elytra black with evident blue-greenish metallic reflections ......................... *nivola* Andrews, 1923

- Species smaller (4.96 to 5.52 mm); if larger (up to 5.84 mm) then with pronotal base with simple puncturation ......................... 26

Knee lighter than the femur, head relatively wide (Figs. 14, 35) ......................... 11

- Knee dark, head normal (Figs. 15, 36, 58) ......................... 12

Antennomeres 2 to 11 piceous - black, eyes markedly convex, elytra piceous-black with rounded shoulders, elytral striae evidently impressed, including stria 7 ......................... *mikyskai* n. sp.

- Antennomeres 2 to 11 dark brown, eyes relatively flat, elytra with greenish metallic reflections, square shoulders, elytral stria 7 very superficial ......................... *rilong* n. sp.

Pronotal base simply punctured, elytra parallel, tibiae and tarsi lighter in colour than femora ......................... *pavusi* n. sp.

- Pronotal base rugose, elytra oval, tibiae and tarsi dark ......................... 13

Hind pronotal setae slightly advanced in respect of the hind angle, square elytral shoulders ......................... *jintangi* n. sp.

- Hind pronotal seta at the pronotal corner, rounded elytral shoulders, elytra apex pointed. *hetzeli* n. sp.

Laterobasal pronotal carina evident ......................... 15

- Laterobasal pronotal carina absent or rudimentary ......................... 20

Elytral microsculpture isodiametric ......................... 16

- Elytral microsculpture with sculpticells more or less transverse ......................... 17

Species larger (5.36 to 6.30 mm), with antennomere 1 brown, femora dark, convex elytra, elytral striae deeply impressed (Sichuan and Yunnan) ......................... *hemanense* Jedlička, 1933

- Species smaller (4.30 to 5.28 mm), with antennomere 1 red, legs entirely dark red, depressed elytra, elytral striae gently impressed (Tibet) ......................... *wrezcionkoi* n. sp.

Pronotal base rugose ......................... 18

- Pronotal base simply punctured ......................... 20

Knee dark as the femur, rest of tibia lighter, pronotum relatively convex ......................... 19

- Knee lighter than the femur, coloured as the whole tibia, pronotum depressed ......................... *pluto* Andrews, 1924 s. l. (see below)

- Pronotum evidently narrower than elytra (ew/pw = 1.62 to 1.64) ......................... *toledanoi zhongdianicum* n. sp.

- Pronotum wider (ew/pw = 1.53) ......................... *hajecki* n. sp.

- Elytral microsculpture poorly transverse, elytral striae deep, knee of the same colour as the tibia (Figs. 8, 16) ......................... *liveni* Andrews, 1930

- Elytral microsculpture evidently transverse, elytral striae gently impressed, knee darker than the rest of the tibia ......................... *cootei* n. sp.

- Pronotal base simply punctured ......................... *degeense* n. sp.

- Pronotal base rugose ......................... 22

- Elytral microsculpture isodiametric ......................... 23

- Elytral microsculpture more or less transverse ......................... 24

- Elytra brown, antennomeres 2 to 11 brown, femora light brown as the entire legs, metaventral process unbordered, depressed eyes ......................... *cymindulum* Andrews, 1930

- Elytra black, antennomeres 2 to 11 piceous-black, femora and knee dark, metaventral process bordered, convex eyes ......................... *mikyskai* n. sp.

- Antennomere 1 brown, rest of antennae piceous-black, femur darker than tibia, knee dark, phallus as in fig. 44) ......................... *bulirschianum* n. sp.

- Antennomere 1 red, rest of antennae infuscated, legs entirely dark reddish ......................... 25

- Elytra parallel, head relatively wide with convex eyes (Fig. 33); hind pronotal seta in normal position ......................... *ruffoi* n. sp.

- Elytra oval, head normal with eyes only slightly convex (Fig. 37), hind pronotal seta slightly advanced ......................... *cavazutii* n. sp.

- Legs reddish, apex of phal/us as in fig. 20 Tibet (Rawu) ......................... *toledanoi rawuense* n. sp.

- Legs dark brown, apex of phallus as in fig. 18 or 19; Sichuan ......................... *toledanoi sertavense* n. sp.

**Bembidion (Bembidionetolitzka) cymindulum**

Andrewes, 1924 (Figs. 1, 10)

**Bembidion cymindulum** Andrews, 1924

Diagnosis

A small, piceous Tibetan *Bembidionetolitzka* with oval elytra, small pronotum. un-bordered metaventral process and very simple endophallus as in Fig.1.

**Systematic notes**

Formerly ranked as *Bembidion incertae sedis* (Lorenz,
1998, 2005; Marggi et al., 2003) actually this species shows the typical armature of the internal sac of the subgenus *Bembidionetolitzeys*, as shown by the examen of the type material.

**Examined material**


**Redescription**

Length: 4.00 mm (type specimens) to 5.00 mm (specimen from Lhachen-la, Fig. 10). Colour. Body piceous, head and pronotum dark shiny brown, head vaguely metallic, elytra dull. Legs, palpi, first and second as well as basal parts of the third and fourth antennal segments light brownish.

Head with antennae moderately slender, eyes comparatively small and flattened, only slightly protruding, with temples nearly half the eye diameter. Frontal furrows relatively flat, slightly rugose on inner side.

Pronotum relatively small, moderately transverse (pw/pl = 1.39), with sides strongly sinuate before the hind angles and with posterior margin slightly narrower than anterior margin, hind angles rectangular or slightly acute. Basal foveae rugose throughout, laterobasal carina reduced.

Metaventral process not bordered, but with a slight transverse impression before the tip. Legs moderately slender.

Elytra moderately short (el/ew = 1.47 to 1.53) ovoid with completely rounded shoulders, much wider than pronotum (ew/pw = 2.30 to 2.50), somewhat flattened on disc, apex slender. Elytral stria faintly impressed and finely punctate on disc, disappearing on sides (type specimens), or moderately impressed and punctate and with seventh stria faintly impressed throughout its length (specimen from Lhachen-la). Stria 7 (specimen from Lhachen-la) or stria 5 (type specimens) connected with the apical stria. Two discal elytral pores in the third interval, adjoining stria 3, three on one side in the holotype.

Microsculpture isodiametric on whole surface, evident, with convex sculpticells on the whole elytra, more superficial on the disc of head and pronotum.

Male genitalia (Fig. 1). In left lateral view phallic moderately slender with middle part subparallel, and with basal and apical quarter each strongly bent to the left if seen from the dorsal side. Apex broadly rounded. Central sclerites of internal sac not enlarged, with lateral fold relatively small, not extending toward base, and without loop like folds extending distal. Ventrodistal fold sclerotized, but very small and relatively short.

**Distribution**

Southern and Central Tibet.

*Bembidion (Bembidionetolitzeys) hamanense* Jedlička, 1933 (Figs. 2, 3, 11)

**Diagnosis**

A medium sized *Bembidionetolitzeys* with antennomere 1 reddish-brown, pronotum transverse, metallic elytra as a rule with blue-greenish reflections, elytral intervals moderately convex, elytral striae punctate-sulcate and phallic as in figs. 2, 3. Among the Chinese species of the subgenus *B. hamanense* is extremely similar in habitus and male genitalia to *B. smetanai* n. sp. (the latter distinguishable by elytral striae punctate, first antennomere black and endophallus with sclerotized ventrodistal fold).

**Examined material**

Holotype, ♂, “Tatsienlu, Prov. Sessschaw, China merid.” (NMPC); 1♂, 1♀ China: Sichuan, Gongga Shan, Haihuogou, above Camp 3, 29°35′N 102°00′E, 2800-3300m, 6-8.VII.1998 (CMWT, CTVR); 1♂, China: Sichuan, Gongga Shan, Haihuogou, above Camp 3, 3200m, 7.VII.1998, 29°35′N 102°00′E (CRS); 1♂, China: Sichuan, Gongga Shan, Haihuogou, above Camp 3, 3050m, 6.VII.1998, 29°35′N 102°00′E (CRS); 3♂, 3♀ China, Sichuan, Daxue Shan, Gongga Shan Mt., Haihuogou Glacier Park, env. Camp II, 2650m. 30.VII.1997 (CPU, CTVR); 1♂, W Sichuan 3-6.VII.1994, 29°35′N 102°00′E, 2900-3200m, Gonggashan - Haihuogou (CMWT); 1♂, China, Sichuan, Daxue Shan, Gongga Shan Mt., Haihuogou Glacier Park, 102°04′E, 29°36′N, river valley ca. 1 km above Camp I, 2100 m, 28/31.V.1997 (CPU); 3♂, 3♀, China (W - Sichuan), Daxue Shan, Haihuogou Glacier Park (Gongga Shan) Camp 2, 2500-2700m, 29°35′N / 101°02′E, 30/31. V. 1997 (CWBE, CTVR, CRS); 1♂, 1♀ China: W-Sichuan (15), Daxue Shan, Haihuogou Glacier Park, Camp 2, 2550-2700m, 29.35′16″N, 102.01.53″E, 30/31.V.1997 (CWBE, CTVR); 1♂, “China: W-Sichuan, Ganzi Tibet. Aut. Pref., Kangding Co., Daxue Shan, Bachtal 5 km E Kangding, 2500-
2800m, Bachufer, 30°03'N, 102°00'E, 24.VI.1999 (CWBE); 3♂ 3♀, China (W Sichuan), Daxue Shan river valley 5 km E Kangding 2500-2800m, 30°03'N / 102°00'E, 20-23.V.1997 (CWBE, CSRS, CTVR); 1♂ 5♀, China, Sichuan, Daxue Shan, 30°00'E 30°03'N, 5 km E Kangding, river valley ca. 3000m, 20-23.V.1997 (CWBE, CUPR); 2♂, China: W Sichuan, 3500-4300m, Temple 35km N Sabde, 29°40N, 101°20'E, 13-14.VII.1998 (CMWT, CTVR); 1♂, Sichuan, 30 Km E Yajiang, road to Batang c. 3100-3500, 20.VII.1992 (CSMI, CTVR); 1♀, Sichuan, 10 Km South Litang, m 4000, 9.VII.1992 (CSMI); 1♀, China, W-Sichuan (Ganzi Tibet. Aut. Pref., Yajiang Co.) Shalui Shan, 20 km W Yajiang, 4250m (brook silt, alp. meadow) 30°01'N, 100°41'E, 2 VII.1999 (CWBE, CTVR); 2♂ 1♀, "China, W-Sichuan (Ganzi Tibet. Aut. Pref., Yajiang Co.) Shalui Shan, river valley 6 km WSW Yajiang, 3250m, 30°01'N, 100°57'E (river bank, bank slope) 4 VII.1999" (CWBE, CTVR); 1♂ 1♀, China, Prov. Sichuan, Ganzi Tibet-an Auton. Pref., Yajiang Co., Shalui Shan E Pass, 15 km W Yajiang, 4300m, Rhododendron silt., 30.00.24N, 100.51.63E, 2.VII.1999 (CPUE, CTVR); 3♂ 1♀, China, Sichuan, Jingiang, 3.7-14.7.2001 (CKRB, CTVR); 1♀, China, Yunnan, Hube N27°22', E100°06', 3200-3600m, 14.7.2006 (CMCZ); 6♂ 2♀, China,
na, Yunnan, Yamen. 13.6-23.6.2005 (CKSB, CTVR, CSRS); 4♂, 2♀, China, Yunnan, V.97, Lijiang, Jade, 3700m (CSRS, CTVR); 19♂, 6♀, China Yunnan, 1-19.VII.1992, Heishui 27.12N, 100.19E, 35 km N of Lijiang (CMWT, CPMI, CSMI, CSRS, CTVR).

Redescription

Length 5.36 to 6.30 mm. Black, strongly metallic, often with blue-green reflections, antennomere 1 reddish-brown, rest of antennae darker. Femora black, knees, tibiae and tarsi brown.

Head wide with frontal furrows deep, parallel, uneven, eyes moderately prominent and antennomeres elongate (bl/ai = 1.61 to 1.75, pw/hw = 1.21 to 1.26).

Pronotum strongly transverse (pw/pl = 1.46), with posterior margin slightly wider than the anterior one.

Sides rounded in the anterior ¾ then sinuate before the hind angles, which are in some specimens right, in some others (including the holotype) obverse but always rather sharp. Median line and anterior transverse impression rather evident, basal focus deep, rounded and rugose-punctate, as the whole base, and laterally delimited by a sharp and long carina.

Metaventral process bordered.

Elytra (el/ew = 1.47 to 1.55) (ew/pw = 1.56 to 1.65) with moderately rounded sides, square shoulders, maximum width slightly behind the middle and pointed at apex. Sutae 1 to 6 complete, evidently impressed, punctate-sulcate, stria 7 superficial, parascutellar stria long, apical stria present as an apical prolongation of stria 5, being not easily distinguishable from this last. Elytral intervals moderately convex. A seta in the apical stria. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture isodiametric, rather evident on the whole dorsal surface, with small, quite convex sculpticells.

Male genitalia (figs. 2, 3). Median lobe gently arcuate, without evident ventral gibbosity and showing normal sclerization of the fold proximally connected to the apex of the ostial flag. Simple group of sclerites surrounding the central sclerite, typical for the species group.

Distribution

Known from China, Sichuan and Yunnan Provinces.

Intraspecific variability

The male genitalia of B. hamanense show a variability in the shape of the apex, extremely elongate and narrow in some specimens (fig. 3) and evidently shorter and broader in other specimens (fig. 2). Sympaty of the specimens with different phalli and presence of intermediate forms between these extremes suggest that probably these differences are due only to individual variations and have no specific or subspecific value.

Bembidion (Bembidionetolitzkya) smetanai n. sp.

(Figs. 4, 12)

Diagnosis

A Bembidionetolitzkya species similar to B. hamanense and B. coeteri in habitus but showing first antennomere black, pronotum less transverse, elytral intervals flat, elytral striae more superficial, punctate and not sulcate and phyllus with a ventral gibbosity (Fig. 4), lacking in B. coeteri n. sp.

Type locality

China, Western Sichuan, Daxue Shan, Hai luogou Glacier Park (Gongga Shan) tongue of glacier 1, 3200m, 29°34'N / 102°00'E.

Type series

Holotype, ♂, "China (W-Sichuan) Daxue Shan, Hai luogou Glacier Park (Gongga Shan) tongue of glacier 1, 3200m, 29°34'N / 102°00'E, 29.V.1997" (CWB); paratypes: 4♂, 1♀, same collecting data as the holotype (CWB, CSRS, CTVR); 10♂, 6♀, "China: Sichuan, Gongga Shan, Hai luogou, above Camp 3, 29°35'N 102°00'E, 2800-3300m, 6-8.VII.1998" (CMWT, CTVR, CSRS); 1♂, "China: Sichuan, Gongga Shan, Hai luogou, above Camp 3, 3200m, 29°35'N 102°00'E, 2800-3300m, 7.VII.1998" (CSRS); 2♂, "China: Sichuan, Gongga Shan, Hai luogou, above Camp 2, 29°35'N 102°00'E, 2600-2750m, 3-6.VII.1998" (CMWT, CTVR); 4♂, 4♀, "China, Sichuan, Daxue Shan, Gongga Shan Mt. Hai luogou Glacier Park env. Glacier Tongue ca. 3.5 km above Camp III, ca 3200m, 29.V.1997" (CPUE, CTVR, CSRS); 10♂, 6♀, "W Sichuan 3-6.VII.1994, 29°35'N 102°00'E, 2900-3200m, Gonggashan - Hai luogou" (CTVR, CSMI, CMWT, NHMB, CSRS); 5♂, "China Sichuan, Gongga Shan, Hai luogou, above Camp 3, 3000m 6.VII.1996 29°35'N 102°00'E" (NHMB); 1♂, "China Sichuan, Gongga Shan, Hai luogou, head of Glacier 1, 2850m 9.VII.1996 29°35'N 102°00'E C57" (NHMB); 14♂, 4♀, "China, Sichuan, Yading Nat. Res., N: 28°27' E: 100°20', 3800-4200m, 24-26.6.2006" (CMCZ, CTVR, CSRS); 5♂, 1♀, "China, Sichuan, Yading Nat. Res. 4200-4600m, N28°34', E100°11', 28-30.6.06" (CMCZ, CTVR, CSRS); 1♂, "China, Sichuan, 30 km SE of Xiangcheng, N 28°47' E 99°56', 3600-4300m, 4-6.7.2006" (CMCZ); 1♂, 3♀, "China: W Sichuan, 3500-4300m, Temple 35km
N Sabdê, 29°40N, 101°20E, 13-14.VII.1998 (CMWT, CTVR); 4♂ 3♀, 1♂, “China, Sichuan, Qingmaii 2700-3500m, 28°47‘N, 99°56‘E, 1.-3.7.06” (CMCZ, CTVR, CSRS); 2♀ 2♂, “China S.W. Sichuan, Qingmaii 4000m, N 28°47‘48.1, E 099°56‘45.7”, 7.7.2006 (CJPH, CTVR); 7♂ 6♀, 2♀, “China, S.W. Sichuan, Qingmaii 3000 m 28°48‘46.7” E 099°52‘09.2”, 3.7.2006 (CJPH, CTVR, CSRS); 13♂ 6♀, 7♀, “China, S.W. Sichuan, pass Riwa - Lamuge 4200m, N 28°34‘03.2, E 100°11‘27.1”, 28.6.2006.” (CJPH, CTVR, CSRS).

Derivatio nominis
Dedicated to our friend Ales Smetana (Ottawa) accomplished specialist in Coleoptera Staphilinidae.

Description
Length 5.64 to 6.62 mm. Black with metallic blue, sometimes bronze reflections. Antennae piceous-black, including antennomere 1 (rarely lighter). Femora black, tibiae and tarsi dark brown.

Head wide with frontal furrows parallel, more superficial than in B. hamanense, antennae long (bl/al = 1.52 to 1.65, pw/hw = 1.26 to 1.46), eyes moderately convex.

Pronotum transverse (pw/pl = 1.38 to 1.46) with sides less sinuate before hind angles, which are right and sharp. Posterior margin slightly wider than the anterior one. Basal foveae square, rather deep, laterally delimited by an unsharp carina. Median line and anterior transverse impression moderately deep. Base rugose.

Legs elongate.
Metaventral process bordered.

Elytra (ew/pw = 1.59 to 1.63) with shape as in B. hamanense (el/ew = 1.50 to 1.57). Striae 1 to 6 complete, punctate not sulcate, elytral intervals flat. Two discal elytral pores in the third interval, adjoining stria 3. Parascutellar stria long, punctate, apical stria deep, connected with stria 7 or 5.

Microsculpture rather superficial in flat, transverse, irregular sculpticells on elytra, less transverse on the pronotum and isodiametric, superficial, on neck. Slightly more evident, in sculpticells less transverse on the female elytra.

Male genitalia (Fig. 4). Ventral margin of the phallos with an evident gibbosity. Endophallos characterized by the sclerotization of the fold proximally connected to the apex of the ostial flag.

Distribution
Known from the Chinese Province of Sichuan where this species is sympatric with B. hamanense.

Bembidion (Bembidionetolitzkyia) cooteri n. sp. (Figs. 5, 13)

Diagnos
A Bembidionetolitzkyia species similar to B. hamanense showing first antennomere brown to dark brown, elytral intervals slightly convex, elytral striae punctate and slightly sulcate and integument darker than in B. hamanense and male genitalia as in fig. 5, similar to those of B. smetanai but lacking the ventral gibbosity of the phallos present in the latter.

Type locality
China, Central Sichuan, Xucheng, Sammo, 3500m, N 31°46‘29”, E 103°07‘10”.

Type series
Holotype, ♂, “China, C-Sichuan, Xucheng, Sammo, 3500m, N 31°46‘29”, E 103°07‘10”, 1.7.2004” (CTVR); paratypes: 40♂ 6♀, 16♂, same collecting data as the holotype (CJPH, CTVR, CSRS); China (NE Sichuan), Mts. E Qiongglai Shan, Zhegoshan pass 4000m, 31.51N/102.40E, 12.VI.2007” (CWBE, CTVR, CSRS).

Derivatio nominis
Dedicated to our friend Jon Cooter (Hereford, England) as a token of our gratitude for the linguistic revision of this manuscript, done with his usual competence, kindness and courtesy.

Description
Length 5.62 to 6.14 mm. Black with faint greenish metallic reflections. Antennae except antennomere 1 and femora piceous-black, antennomere 1, tibiae and tarsi dark brown.

Head (bl/al = 1.60 to 1.65, pw/hw = 1.26 to 1.31) normal with convex eyes, frontal furrows parallel and smooth.

Pronotum transverse (pw/pl = 1.42 to 1.49). Sides rounded in the anterior 4/5 then sinuate near the square and sharp hind angles. Posterior margin slightly wider than anterior one. Median line and frontal transverse impression rather evident, posterior transverse impression deep. Basal foveae rounded, rather deep, gently punctate as the entire base. Laterobasal carina smoothed but evident.

Metaventral process bordered.

Elytra (el/ew = 1.43 to 1.59) evidently wider than pronotum (ew/pw = 1.61 to 1.66), oval, with square shoulders, maximum width slightly behind the middle and pointed apex. Stria 1 to 6 faintly but evidently punc-
tate-sulcate, stria 7 marked only by a row of very superficial punctures. Parascutellar stria rather short, punctate. Apical stria connected with the apex of stria 5. Two discal elytral pores in the interval 3, adjoining stria 3.

Microsculpture: transverse, flat, relatively wide sculpticells evident on elytra and more superficial on pronotum. Isodiametric, flat sculpticells on neck.

Male genitalia (Fig. 5). Endophallus almost identical to that of B. metanai but median lobe smaller, and with ventral margin of phallus rectilinear.

**Distribution**

Known only from the type locality in China, Sichuan.
Bembidion (Bembidionetolitzkya) rilong n. sp.
(Figs. 6, 14)

Diagnosis
A completely black Bembidionetolitzkya similar to B. hamanense with smaller pronotum and endophallus slightly different from this last, showing development of ventrodistal fold intermediate between B. hamanense and B. smetanai.

Type locality
China, Central Sichuan (Rilong), Qionglai Shan (Siguniang Shan, 31°02'58"N, 102°55'84"E).

Type series
Holotype, ♂, "China, C. Sichuan (Rilong), Qionglai Shan (Siguniang Shan, 31°02'58"N, 102°55'84"E, 3800-4300m, 13.7.2000" (CTVR); paratype, ♂, same collecting data as the holotype (CJPH).

Derivatio nominis
The specific epithet derives from the type locality. The name is given in apposition.

Description
Length 5.12 to 5.16 mm. Black with faint metallic bluish reflections. Antennomere 1 and femora piceous-black, rest of antennae dark brown, knees, tibiae and tarsi light brown, with faint metallic lustre on the dorsal surface of first two tarsomers.

Head normal with eyes relatively flat (bl/al = 1.58 to 1.61, pw/hw = 1.28 to 1.31). Frontal furrows parallel, uneven, not deep.

Pronotum transverse (pw/pl = 1.48 to 1.50). Sides rounded in the anterior 4/5 then sinuate near the square and sharp hind angles. Anterior margin wide as the posterior. Median line and frontal transverse impression rather evident, posterior transverse impression deep. Basal foveae somewhat square, rather superficial, gently rugose as the entire base. Laterobasal carina extremely short, superficial and rudimentary, difficult to see.

Metaventral process bordered.

Elytra (el/ew = 1.48 to 1.52) (ew/pw = 1.58 to 1.62), somewhat elongate, with square shoulders and pointed apex, maximum width slightly behind. Striae 1 to 6 very faintly punctured, stria 7 very superficial. Parasutellara stria rather short, punctate. Apical stria deep, with a seta, connected with the apex of stria 5. Two discal elytral pores in the interval 3, adjoining stria 3.

Microsculpture rather superficial in flat, transverse, irregularly distributed sculpticells on elytra and pronotum and isodiametric, extremely superficial, on neck.

Male genitalia (Fig. 6). Median lobe showing almost the same sclerites as B. hamanense but with different development of a pair of small sclerites near the central sclerite: the sclerite ventral to central sclerite is smaller, round and more sclerotized than in B. hamanense while another membranous sclerite, partially covering from left side the central sclerite, which in hamanense is distally evanescent, in B. rilong is pointed and slightly more sclerotized at the distal end, where it touches the basal end of the sclerotized membrane of the ostial flag.

Distribution
Known only from the type locality in Central Sichuan, where the species is sympatric with B. toledanoi sertarenses n. ssp.

Bembidion (Bembidionetolitzkya) jintangi n. sp.
(Figs. 7, 15)

Diagnosis
A relatively small and wide Bembidionetolitzkya completely black, except for the tibiae and tarsi dark brown with hind pronotal seta in advanced position in respect of the hind angle and male genitalia almost identical to those of B. smetanai.

Type locality
China, Central Sichuan, Jintang, Jajin Shan, 3400m, 30°22'451" N, 102°16'644" E.

Type series
Holotype, ♂, “China, C-Sichuan, Jintang, Jajin Shan, 3400m, N 30°22'451", E 102°16'644", 6.7.2001" (CTVR).

Derivatio nominis
The name derives from the type locality.

Description of the holotype
Length 4.96 mm. Body black with very faint metallic reflections. Antennae black with antennomere 1 with faint metallic reflections. Femora black, knees, tibiae and tarsi dark brown.

Head wide with relatively flat eyes, short and parallel frontal furrows (bl/al = 1.55, pw/hw = 1.25).

Pronotum transverse (pw/pl = 4.37) with sides strongly sinuate before hind angles, in the posterior quarter. Posterior and anterior margins of equal width. Median line and anterior transverse impression rather superficial. Posterior transverse impression rather deep, connecting to the almost rounded, rather superficial
and slightly rugose basal foveae. No trace of laterobasal carina. Hind pronotal setae in a slightly advanced position in respect of the hind angle.

Metaventral process with a very thin border at sides and less evident, but present at its anterior end.

Elytra wide (el/ew = 1.38) (ew/pw = 1.59) oval, with rather square shoulders. Striae 1 to 5 complete, punctate and very faintly sulcate, stria 6 more superficial, stria 7 almost absent, represented by a row of very fine and superficial punctures. Parascutellar stria short, apical stria short, connected with the apex of stria 5. Inner intervals relatively convex in the apical half. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture in flat, short but transverse sculpticells on elytra and pronotal disc, shorter, almost isodiametric on the pronotal sides and isodiametric on neck.

Male genitalia (Fig. 7). Main group of sclerites as in the other species of the hamanense group, but showing a short, vertical folder separating the main group of membranous sclerites surrounding the central sclerite from the basal prolongation.

Systematic note

The species shares the main group of sclerites surrounding the central sclerite with B. hamanense, B. smetani, B. rilong and B. cooteri, but it seems to be more similar in the endophallus to B. smetani, perhaps it is a subspecies of the latter. With only a single specimen available, we are not able to state if the character of the advanced position of the hind pronotal seta is an individual aberration or a specific character. The systematic meaning of characters related to the advanced position (or to the absence) of the hind pronotal seta as a possible "Gondwanian" heritage has already been discussed (Toledano, 2005). In any case we can certainly suspect that in a group as the Chinese Bembidionetolitzkyia where this character appears only in this case, the advanced hind pronotal seta is at most a specific apomorphism.

Distribution

Known only from the type locality.

Bembidion (Bembidionetolitzkyia) liangi n. sp.
(Figs. 9, 17)

Diagnosis

A Bembidionetolitzkyia (?) similar to B. hamanense with four discal elytral pores on each elytron. Phallus more strongly sclerotized with dorsoapical shape and sclerites somewhat similar to those of subg Plataphus Motschulsky, 1864.

Systematic notes

Both external and aedeagal diagnostic characters seem to indicate an isolated position. We refrain here from other systematic arrangements (attribution to Plataphus or description of a monospecific subgenus for this species) because we prefer to interpret the external peculiarity of this species (supernumerary discal pores, a character which seems do not necessarily have systematic importance in the Bembidiina (Toledano & Sciaky, 2004)) as a specific apomorphy.

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Figs. 18-19 - Extremes of variability in the phallus of Bembidion toledanoi in left lateral view.
Fig. 20 - Apex of phallus of Bembidion toledanoi hamanense n. ssp.
**Type locality**
China, Northwestern Yunnan, 3300m, Hengduan Shan - Yannen, N 28°00′48.4″, E 098°50′20.1″.

**Type series**
Holotype, ♂, “China, N.W. Yunnan, 3300m, Hengduan Shan - Yannen, N 28°00′48.4″, E 098°50′20.1″, 15.6.2005” (CTVR); paratypes: 31 ♀ ♂, 21 ♂, same collecting data as the holotype (CJPW, CTVR, CSRS); 1 ♂, “China, NW-Yunnan, Degen Co., Mekong side of Hengduan Shan, S of Melixue Shan, 3500 - 4300 m, 28°15′16″N, 95°43′44″E, 3.-5.6.99” (CDMI).

**Derivatio nominis**
Dedicated to our friend Hongbin Liang (IZAS), who kindly collaborates with us in our prospecting of the Chinese Bembidion fauna.

**Description**
Length 5.42 to 6.52 mm. Black with faint greenish metallic reflections. Antennae and femora piceous-black, tibiae and tarsi dark brown.

Head wide with convex eyes, frontal furrows parallel and rugose, not deep (bl/al = 1.65 to 1.75, pw/hw = 1.24 to 1.26).

Protonum transverse (pw/pl = 1.42 to 1.59). Sides rounded in the anterior 4/5 then showing a short but evident sinuature. Hind angles in most specimens sharp and subacute (in few specimens from square to slightly obtuse). Posterior margin slightly wider than the anterior. Median line and anterior transverse impression evident but not deep. Posterior transverse impression deep. Basal foveae relatively rounded, deep, flat or faintly punctate-rugose as the entire base. Laterobasal carina sharp, rudimentary, difficult to see in some specimens.

Metaventral process finely bordered at sides. Anterior part raised but not distinctly bordered.

Elytra (el/ew = 1.49 to 1.58) evidently wider than pronotum (ew/fw = 1.56 to 1.63), oval with square shoulders and maximum width slightly behind the middle. Striae 1 to 6 sulcate and evidently but not deeply punctured, stria 7 marked only by a very superficial row of punctures in the anterior 2/3, deeper and sulcate in the apical third. Parasutellar stria long, deep. Apical stria connected with the apex of stria 5. Four discal elytral pores in the interval 3, adjoining stria 3.

Microsculpture: sculpticells irregularly distributed on elytra (flat, narrow and transverse of the male specimens, less transverse, almost isodiamic and relatively convex in the females) giving a faint iridescence to the elytra. Pronotum with sculpticells less transverse and more convex than in the elytra in both sexes, isodiamic in the females. Neck with superficial isodiamic microsculpture.

Male genitalia (Fig. 9). Phallus strongly sclerotized (in some specimens it is difficult to clear the median lobe in order to see the endophallus) stout, with an ostial emargination in the dorsal margin, proximal to a point in correspondence of the base of the ostial flag. Central sclerite simple, similar to those of the Plataphus species. In any case, the external shape of the median lobe is clearly different from the typical one of Plataphus, shared by all the Chinese species of the subgenus (Toledano, 2008b), distinctly narrower than in B. liangi and with “hatchet-shaped” apex.

**Distribution**
Known only from the Hengduan Shan Range in China, Yunnan.

*Bembidion* (Bembidionotolitzkyaa) *piceocyanum*
Solsky, 1874 (Fig. 21)

**Diagnosis**
Among the Chinese *Bembidionotolitzkyaa* species, this one, occurring in the extreme west of China, is similar to the southwestern *Bembidion toledanoi tobanum* n. ssp. but easily recognizable by the narrower and cordiform pronotum and the male genitalia.

Measurements of the Chinese specimens studied: length = 5.08 to 5.80 mm, bl/al = 1.60 to 1.61, pw/hw = 1.10 to 1.17, pw/pl = 1.29 to 1.33, ew/pw = 1.64 to 1.68, el/ew = 1.59 to 1.66.

**Examined material**
1 ♂, 1 ♀, China, Xinjiang, 2000-3000m, S slope of Tian Shan Mts., road Kuga-Bayanbulak, ca 100km NNE Kuga, 8.-11.V.1993 (CTVR).

*Bembidion* (Bembidionotolitzkyaa) *toledanoi*
Schmidt, 2004 (Figs. 18, 19, 20, 22, 23, 24, 25, 26)

**Diagnosis**
Among the relatively large Chinese and Tibetan *Bembidionotolitzkyaa* species (*B. jaroslevi* n. sp., *B. golenius* n. sp., *B. persephone nanogense* n. ssp. and *B. longirhabia* n. sp.) it differs for the male genitalia, the narrower elytra, the absence of laterobasal pronotal carina (except for the subspecies *zhongdianicum* n. ssp.) and in particular from *B. persephone nanogense* n. ssp. and *B. longirhabia* n. sp. for the antennomere 1 red or brown (never black as in the other two species).
Distribution
Known from Tibet, Qinghai, Sichuan and Yunnan (Fig. 27).

*Bembidion (Bembidionetolitzky) toledanoi toledanoi*
Schmidt, 2004 (Figs. 18, 19, 22)

**Diagnosis**
A rather large sized subspecies from southern central Tibet showing depressed elytra with humera square, often parallel sides, elytral stria 7 absent or very superficial, pronotum with many transverse rugosities near the depressed basal fovea and with laterobasal carina rudimentary or absent. Phallus as in fig. 18.

Measurements: length = 5.76 to 6.30 mm, bl/al = 1.54 to 1.66, pw/hw = 1.25 to 1.28, pw/pl = 1.38 to 1.48, ew/pw = 1.52 to 1.60, el/ew = 1.54 to 1.57.

**Systematic notes**
The species was described upon a single male specimen from Lhapa-la in Tibet. Recently we were able to examine many specimens of the same species from several provinces of China (Tibet, Qinghai, Sichuan, Yunnan). Some of these populations seem to show characters suitable for the description of some subspecies of *B. toledanoi*, described as new below here.

**Examined material**
6♂♂, 2♀♀ China, Tibet, Lungmar valley, 28°52'18", 89°56'26", 22.6.2005 (CZPR, CTVR, CSRS).

**Distribution**
Southern Central Tibet (Fig. 27).

*Bembidion (Bembidionetolitzky) toledanoi tobanum*

n. ssp. (Fig. 23)

**Diagnosis**
A subspecies from eastern Tibet and eastern Qinghai with head and pronotum dark metallic green, elytra dark red to reddish-brown and legs red and showing maximum elytral width behind the middle. Antennomere 1 red, the others brown to dark brown. Male genitalia as in the typical form (Fig. 18), showing variability for the apical end of phallus, in some specimens identical to the type specimen of *B. toledanoi*, in other specimens shorter, as in fig. 19.

**Type locality**
Eastern Tibetan, road Toba - Jomda, pass 50 km East of Toba, 31°19"N, 98°05"E, 4200 m, alpine meadow.

**Type series**
Holotype, ♂, "E Tibetan, road Toba - Jomda, pass 50 km E Toba, 31°19"N, 98°05"E, 4200 m, alpine meadow, 17.VII.1997" (CTVR); paratypes: 40♂♂, 28♀♀, same collecting data as the holotype (CTVR, MSNV, CSRS); 1♂, 1♀, “China - C Tibetan, Shugela Pass 4920m, 40 km E of Yanbajie, 21.6.2005" (CWBE, CTVR); 2♂♂, 1♀, “China, Qinghai or., Ngola-Shan, Na Hai Shue, 18-7-94, 288 km of Sining, m 4500” (CSMI, CFPI, CTVR); 4♂♂, 2♀♀, “China, Qinghai or., Ngola-Shan Mts., Surong, 3700m, 1-2.VII.1998” (CJPH, CBUL, CMFI, CRNS); 1♀, “Cina - Qinghai (sici), dist. Maling m 4400, 2.VIII.1998" (CSMI); 1♂, 3♀♀, “China, E Qinghai (Gonghe) mts. 20 km N Daotanghe, 36°32'N/101°04'E, ca 4200m, alp. meadow/screec/grassland, 3.VII.1995" (CJPH).

**Derivatio nominis**
The subspecific epithet derives from the type locality.
Measurements: length = 5.56 to 6.76 mm, bl/al = 1.78 to 1.83, pw/hw = 1.30 to 1.33, pw/pl = 1.38 to 1.45, ew/pw = 1.53 to 1.59, el/ew = 1.58 to 1.60.

Male genitalia as in the typical form, showing variability for the apical end of phallus, in some specimens identical to the type specimen of *B. toledanoi*, in other specimens shorter, as in fig. 20.

**Variability**
A single, female specimen from Qinghai, near Maqing, m 4400 (CSMI) shows dark femora. All the remaining characters are perfectly matching with those of the new subspecies.

**Distribution**
Known from North Eastern Tibet to Qinghai Province (Fig. 27).

*Bembidion (Bembidionetolitzky) toledanoi sertarense*

n. ssp. (Fig. 24)

**Diagnosis**
A subspecies from western and central Sichuan with legs and antennae dark brown (except antennomere 1, sometimes red) and elytra dark with metallic, greenish reflections. Pronotal posterior margin almost as wide as the anterior one (slightly wider than this last in the other subspecies).
**Type locality**
China, Western Sichuan, 3800m, road Luhuo-Sertar, 20 km N Luhuo, 31°32’N, 100°42’E.

**Type series**
Holotype, δ, “China, W Sichuan, 3800m, road Luhuo-Sertar, 20 km N Luhuo, 31°32’N, 100°42’E, mixed forest, 21.VII.1997” (CTVR); paratypes: 8 δ, 3 Φ, 3 Φ, same collecting data as the holotype (CTVR, CSRS); 3 δ, 4 Φ, “China - W Sichuan, road Luhuo-Sertar, pass 40 km N of Luhuo, 31°42’N, 100°47’E, ca 4200m, alpine meadow, 22.VII.1997” (CTVR); 3 δ, 2 Φ, “China, C. Sichuan (Rilong), Qiongliai Shan (Siguniang Shan, 31°02’58”N, 102°55’84”E, 3800-
4300m, 13.7.2000” (CJPH, CTVR); 9 δ, 3 Φ, “China, C-Sichuan, Jintang, Jiajin Shan, 3400m, N 30°22’45”1, E 102°16’64”4, 6.7.2001” (CJPH, CTVR, CSRS); 5 δ, 5 Φ, “China W. Sichuan (Ganzi Tibet. Aut. Pref., Kangding Co.), Daxue Shan, brook bank W Tshetto La Pass, 3650 m, 20 km W Kangding, 30°04’N/101°46’E, 25.VI.1999” (CPUE, CWBE, CTVR, CSRS); 1 Φ, “CHINA W. Sichuan (Ganzi Tibet. Aut. Pref., Kangding Co.), Daxue Shan, river valley 10 km S Kangding, 3150 m, 29.59’N/101.55’E, 26-30.VI.1999” (CWBE); 5 δ, 2 Φ, “China - W Sichuan, Zhi-Long (Shou-Ji), 3-8.VIII.92” (CMSI, CTVR); 4 δ, 4 Φ, “China, W Sichuan (Ganzi Tibet. Aut. Pref., Litang Co., Shalui Shan, 25 km NW Litang, 30°08’N, 100°04’E, 4200m, 1-3.VII.1999” (CWBE, CTVR, CSRS); 6 δ, 3 Φ, “China - Sichuan, Jintang-Pass, 20 - 25.6.2007” (CKSB, CTVR, CSRS); 2 δ, 2 Φ, “China: W Sichuan, 20 km N Sabde, 3200m, 29°35’N, 101°23’E, 10-16.VII.1998” (CMWT, CSRS); 1 δ, “China: W-Sichuan (10), Daxue Shan, 10 km S Kangding, 29.59.17’N, 101.55.08’E, 3150m, Fluistal, 25.-26.05.1997” (CSRS).

**Derivatio nominis**
The subspecific epithet derives from the type locality.
Measurements: length = 5.76 to 6.88 mm, bl/al = 1.58 to 1.74, pw/hw = 1.25 to 1.31, pw/pl = 1.42 to 1.50, ew/pw = 1.49 to 1.58, el/ew = 1.59 to 1.61.
Male genitalia as in the typical form, showing variability for the apical end of phallus, in some specimens identical to the type specimen of *B. toledanoi* (Fig. 18), in other specimens shorter, as in Fig. 19.

**Distribution**
Known from several localities in the western and central Sichuan (Fig. 27).

*Bembidion (Bembidionetolitzky) toledanoi rawuense* n. ssp. (Figs. 20, 25)

**Diagnosis**
A subspecies from Eastern Tibet very similar to *B. toledanoi sertarens* but showing subparallel, narrower, elytra, lighter appendages and different apex of phallos, distinguishable from *B. toledanoi toledanoi* by the more shining integument. Apical end of phallus as in Fig. 20.

**Type locality**
E Tibet, road Rawu - Baxoi, pass 10 km N Rawu, 29°38’N 96°43’E, 4300m.
Type series
Holotype, ♂, "E Tibet, road Rawu - Baxoi, pass 10 km N Rawu, 29°38'N 96°43'E, 4300m, alpine meadow, 12.VII.1997" (CTVR); paratypes: 18 ♂♂, 15 ♀♀, same collecting data as the holotype (CTVR, MSNV, CSRS).

Derivatio nominis
The subspecific epithet derives from the type locality.
Measurements: length = 5.82 to 6.64 mm, bl/al = 1.65 to 1.74, pw/hw = 1.25 to 1.27, pw/pl = 1.44 to 1.45, ew/pw = 1.58 to 1.62, el/ew = 1.57 to 1.59.
Male genitalia (Fig. 20). In most specimens, apical end of phallos shorter, and with apicoventral reinforcement very thin.

Distribution
Known only from the type locality in the eastern Tibet (Fig. 27).

Bembidion (Bembidionetolitzky) toledanoi zhongdianicum n. ssp. (Fig. 26)

Diagnosis
A subspecies from Yunnan with pronotum narrow, sides of pronotum more sinuate before hind angles, laterobasal carina present, elytral sides rather rounded, dark brown-greenish body and dark red legs. Antennomere 1 red, rest of antennae dark brown.

Type locality
China, Northern Yunnan, 16 km SSE Zhongdian, 3100m, 27°40.7'N / 99°44.2'E.

Type series
Holotype, ♂ "China (N-Yunnan), Zhongdian Co. 16 km SSE Zhongdian, 3100m, 27°40.7'N / 99°44.2'E., (river bank, gravel), 17.VIII.2003" (CWBE); paratypes: 3 ♂♂, same collecting data as the holotype (CWBE, CRSR, CTVR); 4 ♀♀, "China, Yunnan prov., 100°09'27"/45", 3600m, E Zhongdian, stony river, steep valley, 13.10.1999" (CRNS, CTVR).

Derivatio nominis
The subspecific epithet derives from the type locality in China, Yunnan Province.
Measurements: length = 5.86 to 6.32 mm, bl/al = 1.66 to 1.72, pw/hw = 1.22 to 1.25, pw/pl = 1.35 to 1.36, ew/pw = 1.62 to 1.64, el/ew = 1.53 to 1.56.
Male genitalia as in the nominotypical form.

Distribution
Known from a single locality in Yunnan (Fig. 27). A single, female specimen from China - E Tibet, Lenang (Luna), 3375m, 80 km W of Tomi, 9.6.2005 (CWBE) extremely similar to the type series of B. toledanoi zhongdianicum but showing antennomere 1 dark brown was provisionally labelled with a red label indicating "cf. Bembidion toledanoi sp. zhongdianicum Det. L. Toledano & J Schmidt, 2007".

Bembidion (Bembidionetolitzky) ruffoi n. sp. (Figs. 28, 33)

Diagnosis
A small Bembidionetolitzky from southwestern China with parallel, short elytra and male genitalia as in fig. 28.

Type locality
China, Southern Qinghai, 32.53N, 96.41E, pass 10 km East of Doramarkog, 4200m, alpine meadow.

Type series
Holotype, ♂ "China - S Qinghai, 11.7.1995, 32.53N, 96.41E, 10 km E Doramarkog, pass 4200m, alp. meadow" (CTVR); paratypes: 21 ♂♂, 6 ♀♀, same collecting data as the holotype (CTVR, CSRS); 1 ♂, "China, SE Qinghai, r. Yushu - Torgar, pass 25km SW Yushu, 4500m, 23.6.95" (CFPI); 3 ♂♂, "China - S Qinghai, 7.7.1995, 32.20N, 96.33E, pass 30 km N Nanqen, alpine meadow 4200m" (CTVR); 1 ♂, 1 ♀♀, "China Qinghai east, Zhubugygoin 4200 m, 6-7.7.1992" (CDMI); 1 ♂, "China Qinghai prov., Zhubugygoin, 4200 m, 6-7.7.1992" (CSMII); 1 ♂, "China Qinghai east, Zhubugygoin, 4200 m, 17-18.7.1992" (CSRS); 6 ♂♂, 6 ♀♀, "E Tibet, road Tobab - Jomda, pass 50 km E Toba, 31°19'N, 98°05'E, 4200 m, alpine meadow, 17.VII.1997" (CTVR, CSRS); 8 ♂♂, 12 ♀♀, "Ch. NW Sichuan, 14.7.1995, 33.09N 97.30E, pass 15 km E Xiwu, alpine meadow 4000m" (CTVR, CRNS); 17 ♂♂, 9 ♀♀, "China NW Sichuan, 20 km " Qagca 4300m, 31.50N 98.25E, 15.VII.1998" (SMNS, CTVR, CSRS); 10 ♂♂, 3 ♀♀, "Ch. - NW Sichuan, 17-18.VII.1995, 32.30N, 98.25E, pass 20 km S Qagca, alpine meadow, 4100m" (CTVR, CSRS); 16 ♂♂, 11 ♀♀, "Ch. - NW Sichuan, 14-16.VII.1998, 32.30N, 98.25E, pass 20 km S Qagca, alpine meadows, cca 4300m" (CTVR, CSRS).

Derivatio nominis
Dedicated to Prof. Sandro Ruffo of Verona, high-
ly accomplished specialist in Coleoptera Chrysomelidae and Crustacea Amphipoda, great entomologist and iconic figure for most Italian entomologists.

**Description**

Length 4.82 to 5.20 mm. Head and pronotum piceous-black with bronze metallic reflections. Elytra dark brown with faint, bronze metallic reflections. Antennomere 1 red, rest of antennae infuscated. Palpi dark red, except for the penultimate maxillar palpomere, dark brown. Legs dark red.

Head wide, with prominent eyes, frontal furrows parallel, superficial and uneven, antennomeres short (bl/al = 1.85 to 1.94, pw/hw = 1.25 to 1.26).

Pronotum transverse and rather depressed (pw/pl = 1.39 to 1.42) with sides very poorly sinuate before the obtuse hind angles. Posterior margin slightly wider than the anterior one. Median line and anterior transverse impression not deep but evident. Basal transverse impression not deep. Basal foveae rounded, relatively deep, faintly rugose, laterobasal carina extremely rudimentary, short and smooth.

Metaventral process with a faint border in its anterior part.

Elytra (el/ew = 1.52 to 1.53) relatively short (ew/pw = 1.53 to 1.57) with sides very gently diverging behind and maximum elytral width slightly behind middle, then rounded at apex. Humera square. Elytral striae 1 to 6 gently punctate and very superficially sulcate, stria 7 more superficial (in some specimens also stria 6 is more superficial than the inner ones. All striae more superficial near apex. Intervals flat. Parascutellar stria relatively long. Apical stria short, connected with the apex of stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture in transverse, flat sculpticells distributed in irregular lines on elytra, isodiamicetric and relatively convex on head and pronotum, except for the pronotal disc where they are transverse and flat, sometimes obsolete.
Male genitalia (Fig. 28). Very small, pointed, highly sclerified diagonal sclerite in the middle of endophallus, between the central group of sclerites and the ventrodorsal fold (the basal portion of the ostial flag).

**Distribution**
Known from East Tibet, Qinghai and Sichuan.

*Bembidion (Bembidionetolitzkyia) degense* n. sp.
(Figs. 29, 34)

**Diagnosis**
Similar to *B. ruffoi* but recognizable by the elytra more ovate for the more rounded shoulders, the pronotum sides, more strongly sinuate before the hind angles, and the male genitalia.

**Type locality**
East Tibet, road Jomda-Dege, pass 40 km NE of Jomda, 31°38'N, 98°28'E, 4245m.

**Type series**
Holotype,  ♂, “E Tibet, 18.VII.1997, road Jomda-Dege, pass 40 km NE of Jomda, 31°38'N, 98°28'E, 4245m alt., alpine meadow” (CTVR); paratypes: 5 ♂, 5 ♀, same collecting data as the holotype (CTVR, CSRS).

**Derivatio nominis**
The specific epithet derives from the type locality.

**Description**
Length 4.56 to 5.56 mm. Colours as in *B. ruffoi* but with antennomeres 2 to 11 reddish at base and infuscated in the rest of their length and in general lighter than in *B. ruffoi*.

Head and eyes normal, frontal furrows as in *B. ruffoi*, antennomere 3 more elongate than in *B. ruffoi* (bl/ al = 1.64 to 1.80, pw/hw = 1.29 to 1.31).

Protonotum transverse (pw/pl = 1.45 to 1.52) with sides evidently sinuate at the posterior fifth. Posterior margin as wide as the anterior. Median line and anterior transverse impression not deep but evident. Basal transverse impression rather deep in almost all the type series. Basal foveae rounded, relatively deep, very superficially punctate, laterobasal carina extremely rudimentary, short and smooth.

Metaventral process finely bordered.

Elytra (el/ew = 1.46 to 1.58) (ew/pw = 1.50 to 1.55) oval, with narrow shoulders, sides gently diverging the point of maximum width, slightly behind the middle, then ending in a relatively pointed apex. The female specimens (fig. X) have elytra longer and more flat than the males. Elytra striae punctate-sulcate, complete, reaching apex, rather deeply impressed. Stria 7 more superficial than the inner ones. Intervals more convex in the males, in any case always more convex than in *B. ruffoi*. Parascutellar stria long, apical stria short and deep, connected with the apex of stria 5. Two discal elytral pores in the third interval, adjoining stria 3.

Miscrosculpture as in *B. ruffoi*, but with sculpticells less transverse on elytra.

Male genitalia (Fig. 33). Endophallus very similar to that of *B. ruffoi*. Phallus shorter and slightly more arcuate.

**Distribution**
Known only from the type locality in eastern Tibet.

*Bembidion (Bembidionetolitzkyia) mikyskai* n. sp.
(Fig. 30, 35)

**Diagnosis**
A small *Bembidionetolitzkyia* from western Sichuan with body and appendages darker than in the two preceding species, very short lateral pronotal sinuature before the hind angles, isodiametric microsculpture on the whole body and phallus as in fig. 30.

**Type locality**
China, Sichuan, 20 km SE of Xiangcheng, N 28°48' E 99°52'.

**Type series.** Holotype, ♂, “China, Sichuan, 7.-8.7.2006, 20 km SE of Xiangcheng, N 28°48'E 99°52', 4200-4500m, 4.-6.7.2006” (CTVR); paratypes: 16 ♂, 11 ♀, same collecting data as the holotype (CMCZ, CTVR, CSRS); 10 ♂, 8 ♀, “China, Sichuan, 30 km SE of Xiangcheng, N 28°47'E 99°56', 3600-4300m, 4.-6.7.2006” (CMCZ, CTVR, CSRS); 9 ♂, 2 ♀, “China, Sichuan, 20km S of Dao-Cheng, N 28°53'E, E 100°17', Bo-We Shan pass 4500m, 20.6.2006” (CMCZ, CSRS, CTVR); 17 ♂, 8 ♀, “China, S W Sichuan, Qingmai 4000m, N 28°47'48.1", E 099°56'45.7", 7.7.2006” (CJPH, CTVR, CSRS); 4 ♂, 4 ♀, “China, S W Sichuan, 4500m, pass Daocheng - Jianding, N 28°53'46.0", E 100°17'12.4", 20.6.2006” (CJPH, CTVR, CSRS).

**Derivatio nominis**
Dedicated to our friend Adolf Mikyska (Podrady, Czech Republic) who kindly made available to us a part of the type series for study.
Figs. 33-37 - Habitus of: 33) *Bembidion ruffoi* n. sp.; 34) *Bembidion degense* n. sp.; 35) *Bembidion mikyhai* n. sp.; 36) *Bembidion betzeli* n. sp.; 37) *Bembidion cavazzutii* n. sp.
Description
Length 5.18 to 5.52 mm. Piceous-black with faint, brown metallic reflections. Antennomere 1 piceous-black in most specimens, including the holotype, brown in few paratypes. Rest of antennae piceous-black. Femora black (brown in few specimens), knees, tibiae and tarsi brown. On the apical dorsal surface of tarsomeres often a faint metallic lustre.

Head normal with prominent eyes and parallel, very superficial and short frontal furrows (bl/al = 1.73 to 1.79, pw/hw = 1.23 to 1.24).

Pronotum (pw/pl = 1.42 to 1.44) small, transverse, sides with a very short sinuature before the hind angles. Posterior margin slightly wider than the anterior one. Basal foveae somewhat square, rather superficial and rugose as the entire base. Transverse impressions and median line not deep. Laterobasal carina rudimentary as in the preceding two species.

Metaventral process bordered.

Elytra (el/ew = 1.57 to 1.60) (ew/pw = 1.53 to 1.54) very similar to those of B. degeneae, even in this case slightly more elongate in the females.

Microsculpture almost isodiametric with convex sculpticells on the whole dorsal surface.

Male genitalia (Fig.30). Diagonal sclerite more reduced than in the two preceding species.

Distribution
Known from two localities in China, Sichuan Province.

Bembidion (Bembidionetolitzky) hetzeli n. sp. (Figs. 31, 36)

Diagnosis
A small Bembidionetolitzky of the ruffoi group from Yunnan very similar to B. mikyskai, but showing slightly longer lateral pronotal sinuature and different phallus.

Type locality
China, Northwestern Yunnan, 3300m, Hengduan Shan - Yanmen, N 28°00'48.4", E 098°50'20.1".

Type series
Holotype, δ, “China, N.W.Yunnan, 3300m, Hengduan Shan - Yanmen, N 28°00'48.4", E 098°50'20.1", 15.6.2005" (CTVR); paratypes, 2 δ, 1 Φ, same collecting data as the holotype (CJPH, CSRS, CTVR).

Derivatio nominis
Dedicated to Andreas Hetzel (Seeheim-Jugenheim, Germany), doctor of r medicine, very kind man and fine collector of Coleoptera Carabidae.

Description
Length 5.06 to 5.52 mm. Almost entirely piceous-black. Only the legs are dark brown-to-black.

Head relatively wide with normal eyes and frontal furrows as in the preceding species of the ruffoi group. Antennae short (bl/al = 1.81 to 1.86, pw/hw = 1.22 to 1.23).

Pronotum transverse (pw/pl = 1.43 to 1.54) flat, similar to that of B. mikyskai but with basal foveae even more superficial, rugose, lateral sinuature slightly more pronounced and laterobasal carina almost invisible.

Metaventral process evidently bordered.

Elytra (el/ew = 1.52 to 1.62) (ew/pw = 1.49 to 1.56) flat, similar in shape to those of B. mikyskai but with intervals flat, striae 1 to 6 superficially punctate-sulcate, stria 7 almost absent.

Microsculpture isodiametric in rather flat sculpticells on neck, pronotal sides and female elytra, more stretched on pronotal disc and male elytra.

Male genitalia (Fig. 31). Same armature of the endophallus as in the other species of the ruffoi group. Phallus smaller than in the other species of the group, except for B. degeneae showing a phallus of the same size but less arcuate and with ventrodistal fold (distal extension of ostial flag) more developed.

Distribution
Known only from the type locality in China, Yunnan.

Bembidion (Bembidionetolitzky) cavazzutii n. sp. (Figs. 32, 37)

Diagnosis
A Bembidionetolitzky very similar to B. degeneae but with darker antennomeres 2 to 11, body slightly wider and slightly different endophallus (Fig. 32).

Type locality
China, Western Sichuan, Sertar - Garze, picea forest 3550m.

Type series
Holotype, δ, “Cina - Sichuan, Sertar-Garze, 3550m, pineta, VI.01" (CCVZ); paratype, δ, same collecting data as the holotype (CTVR).

Derivatio nominis
Amicably dedicated to Pier Franco Cavazzuti (Pag-
Description
Length 5.12 to 5.36 mm. Colours as in *B. ruffoi*.
Head normal with eyes relatively flat and frontal furrows parallel, smooth and relatively deep (bl/al = 1.66 to 1.67, pw/hw = 1.24 to 1.31).
Pronotum transverse (pw/pl = 1.44 to 1.50) with sides almost not sinuate before the obtruse hind angles. Posterior margin as long as the anterior one. Median line and anterior transverse impression rather deep, posterior transverse impression superficial. Basal foveae somewhat rectangular, not deep, rugose as the entire base and the anterior transverse impression. Laterobasal carina rudimentary. Hind pronotal seta slightly advanced in respect of the hind angle.
Metaventral process finely bordered.
Elytra (el/ew = 1.50 to 1.51) (ew/pw = 1.47 to 1.55) subovate with square shoulders. Elytral striae gently punctate-sulcate, stria 1 to 6 complete, 7 almost invisible in the anterior half, as deep almost as the others in the posterior half and connected with the apical stria. Parascutellar stria long. Two discal elytral pores in the third interval, adjoining stria 3.
Microsculpture as in *B. degereense*.
Male genitalia (Fig. 32). Phallus larger than in *B. degereense* but with endophallus very similar, differing mainly for the presence of a thin, almost triangular sclerite ventral in respect of the central sclerite. Diagonal sclerite of the *ruffoi* group very small, reduced to a small sclerotized point. Near this last, the apical end of the membrane surrounding the central sclerite from the left side is pointed and well sclerotized.

Distribution
Known only from the type locality in China, Sichuan Province.

*Bembidion (Bembidionetolitszkyia) nivicola*
Andrewes, 1923 (Figs. 46, 56)

Examined material
19♂♂, 12♀♀ E Tibet, Banda env., 4400m, 30°15′N, 97°16′E, grassland, 5.7.1997 (CTVR, CSRS); 2♂♂, China, S Qinghai, 32°40′N, 96°36′E, 3500m, 25 km S Daramarkog, left tributary Zi Qu river, 10.7.1995 (CTVR); 3♂♂, China, Tibet, Zhongba County (about 29°6′N, 84°1′E), 4500m, 13.8.1975 (IZAS, CTVR).

Systematic notes
*B. pluto*, *B. hingstoni* Andrewes, 1924 and *B. harrmanni* Schmidt, 2003 where formerly interpreted as three distinct species with allopatric distribution (Schmidt, 2003). The discovery of several new populations in Southern Tibet reveals a much wider distribution of this form without extensive gaps of distribution. Between these populations we can ascertain no significance of genitalic differentiation. Therefore we believe that they belong to the same specific taxon. However, between populations from different parts of Himalaya and Tibet, a remarkable high variability can be explained concerning colouration, shape of pronotum and punctuation of elytral striae. These characters seem to have a more strongly geographic significance, but we have to wait for additional material from further localities to be able for a more careful study to get our final opinion to the taxonomic status of the different populations. Momentary we conclude that *B. hingstoni* Andrewes, 1924 and *B. harrmanni* Schmidt, 2003 are subspecies of a polytypic species *B. pluto s.l.*

Intraspecific variation
*B. pluto pluto* Andrewes, 1924 (Fig. 38, 49): Populations from Southwestern Tibetan and uppermost Sudley Valley and Indus Valley. Pronotal laterobasal carina usually completely reduced. Inner elytral striae rather strongly punctate. Colouration of body surface dark brown to black, pronotum without greenish reflections, first antennomere and legs brown to black. Note: the populations from the type locality (Nima Mud) are much lighter in coloration and have a broader pronotal base than populations from Southwestern Tibet.

*B. pluto hingstoni* Andrewes, 1924: Populations from Southern Central Tibet. Pronotal laterobasal carina as a rule visible. Inner elytral striae not or only finely punctate. Colouration of elytra usually brown, pronotum slightly greenish metallic, first antennomere and legs light brown, sedum darkened.

*B. pluto harrmanni* Schmidt, 2003: Populations from Inner Himalaya of Central and Western Nepal. Pronotal laterobasal carina shortened or completely reduced. Inner elytral striae not punctate. Colouration of whole body dark brown to black, without metallic lustre (for further details see Schmidt, 2003).

Examined material
*B. pluto pluto*: Holotype of *B. pluto*, ♀”Type”, "Rukshu Nima Mud (Fronte Thibet)", "G.G. Babault Juill. 1914",
Figs. 38-48 - Phallus in left lateral view of: 38) Bembidion pluto Andrewes, 1924; 39) Bembidion jaroslavi n. sp.; 40) Bembidion golem n. sp.; 41) Bembidion persephone nangense n. sp.; 42) Bembidion persephone nangense n. sp. ("hand-like" sclerite); 43) Bembidion longirika n. sp.; 44) Bembidion bulirschianum n. sp.; 45) Bembidion ursecziokei n. sp.; 46) Bembidion nicasola Andrewes, 1923; 47) Bembidion hajeki n. sp.; 48) Bembidion pavesii n. sp.
"Bembidion Pluto Andr. Type H.E. Andrewes det.," “H.E. Andrewes Coll. B.M. 1945-97” (NHML). Paratypes of *B. pluto* 9♂ 1♀, same data as Holotype (CSRS, NHML, NHMW); 6♂ 2♀, Tibet South West, Himalaya Mts., Mandhatra Mt., 4600 - 5000m, 6.VII.1997 (CTVR, CSRS); 8♂ 1♀, 4♀, Tibet West, Himalaya Mts., 80 km NW of Kailash Mt., 4700m, 1.7.1997 (CTVR, CSRS); 2♂ 1♀, W Tibet, Nganglong Mts., Rabank 4800m, 1.3.1996 (CJPH, CTVR); India, N Kumaon, Sangcha, 14500 ft, 22 specimens (CSRS, NHML); India, Lada-kh, Shan Sumdo, 3700 m, 19.7.1995, 12 specimens (CMWT, CSRS).

B. Pluto hingstoni:

1♂, 2♀, China, Tibet, Lungmar valley, N 28°52'18", E 89°56'26", 22.6.2005 (CZPR, CTVR); 4♂ 1♀, China - SC. Tibet, Sachla, 4600-5000m, 38.VI-1.VII.1995 (CRNS, CTVR); 1♂, 1♀, South Central Tibet, Everest N-slope, Rongbuk Valley, 5000 m, 4.7.1993 (CSRS); 1♂ 2♀, Shigatse, 3900 mNN, 29°15'43.6N 88°32'09.3E, Tsapopgo, 31.7.1998, (CSRS); 1♂, Shigatse, Dongu La (Südseite), 4600-4800 m, 15.7.1996 (CSRS); 1♂, Lhakpa La s. Lhasse (N-Seite), 4500-4700 m, 14.7.1996 (CSRS); 1♀, Karo La (W-Seite), 4800-5000 m, 11.7.1996 (CSRS).

*Bembidion* (*Bembidionetolitzeika*) *jaroslavi* n. sp. (Figs. 39, 50)

*Diagnosis*
A relatively large *Bembidionetolitzeika* with oval elytra from Qinghai.

*Type Locality*
China, Southern Qinghai, 32°20'N, 96°33'E, pass 30 km N Nanqên, alpine meadow, 4200m.

*Type series*
Holotype, ♂, “China - S Qinghai, 7.7.1995, 32.20N, 96.35E, pass 30 km N Nanqên, alpine meadow, 4200m” (CTVR); paratypes: 3♂ 1♀, same collecting data as the holotype (CTVR, CSRS).

*Derivatio nominis*
Dedicated to Jaroslav Turna (Kostelec na Hane, Czech Republic) who kindly gave us the type material to describe.

*Description*
Length 5.56 to 5.64 mm. Head and pronotum black metallic with faint greenish reflections. Elytra brown-reddish. Antennomere 1 and base of antennomeres 2 to 4 red, rest of antennae infused. Legs and palpi dark red, except for penultimate maxillar palpomere, reddish at base, infused in the apical ¾.

Head wide with eyes relatively convex and short frontal furrows, parallel, smooth, not deep. Antennomeres long (bl/αi = 1.60 to 1.62, pw/hw = 1.31 to 1.36).

Pronotum transverse (pw/pl = 1.46 to 1.52) with sides poorly sinuate before the sharp and square small hind angles. Posterior margin wider than the anterior one. Median line and transverse impressions very shallow. Basal foveae not deep, somewhat square, gently rugged as the whole base and the basal half of the pronotal sides. Laterobasal carina practically absent. A very small fovea on each side of the pronotal disc on its anterior third.

Metaventral process with a fine border.
Elytra (el/εw = 1.44 to 1.45) wide, ovate, evidently wider than the pronotum (εw/pw = 1.62 to 1.63). Striae 1 to 5 gently punctate-sulcate, 6 only punctate and 7 practically absent. Intervals slightly convex. Parascutellar stria long, apical stria short, connected with the apex of stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture with narrow, flat and sculpticells evidently evident and transverse on elytra, less transverse on the pronotal sides, more shallow on the pronotal disk, isodiomatic but rather superficial on neck.

Male genitalia (Fig. 39). Endophallus showing, as in *B. nivicola*, *B. pluto* s.l. and the following species a complex of tubular sclerites, called here as “waved sclerites” (WS), covering near their basal origin the central sclerite from the left side and extending distally more or less sinuose in the different species. *B. jaroslavi* shows a well developed distal fold of WS and a highly sclerotized, diagonal fold covering from the left side the base of the ostial flag.

*Distribution*
Known only from the type locality in China, southern Qinghai.
Bembidion (Bembidionetolitzky) golem n. sp.  
(Figs. 40, 51)

Diagnosis
A large sized Bembidionetolitzky from Qinghai with large, almost parallel reddish-brown elytra and  
antennomere 1 red.

Type locality
China, Southern Qinghai, 32°40'N 96°36'E, 3500m, 25 km South of Doramarkog.

Type series
Holotype, δ., “China - S Qinghai, 10.7.1995, 32°40'N 96°36'E, 3500m, 25 km S Doramarkog, left. trib. Zi Qu  
riv.” (CTVR); paratypes: 36♂δ, 26♀, same collecting data as the holotype (CTVR, CSRS, MSNV); 3♂,  
“China SE Qinghai, r. Toramarkog - Nangqen, 30 km N Nangqen, 24.6.95, 3500m” (CFPI, CSMI).

Derivatio nominis
The name derives from the monster of the Pragogue Jewish mythology, because of its very large size and  
the brown colour, and because few years ago one of us (L.T.) have seen this species the first time in the famous  
Prague's entomological meeting.

Description
Length 6.12 to 6.76 mm. Head and pronotum black, with faint greenish metallic reflections. Elytra reddish- 
brown to brown with faint greenish metallic reflections mainly near elytral base and apex. In few specimens,  
mainly strongly microsculptured females, elytra almost dark green for the strong metallic reflections. Legs, an- 
tennomere 1, base of the remaining antennomeres and palpi except apex of penultimate maxillary palpomere  
red, rest of antennae and apex of penultimate maxillary palpomere infuscated. In some specimens, antennomeres  
2 to 11 and whole palps infuscated.

Head and eyes normal, frontal furrows very gently converging, almost parallel, not deep and gently ru- 
gose, antennomeres elongate (bl/αl = 1.67 to 1.70, pw/lh = 1.21 to 1.28).

Pronotum transverse (pw/pl = 1.39 to 1.40) with posterior margin wider than the anterior one. Sides  
poorly sinuate at the posterior fifth, before the square and sharp hind angles. Median line rather deep, ante- 
ier and posterior transverse impression rather superficial. Basal foveae somewhat square, very superficial,  
gently rugose as the whole basis. Laterobasal carina rudimentary, difficult to see in some specimens.

Metaventral process as a rule bordered (see below).

Elytra elongate (el/ew = 1.53 to 1.60), wide in respect to the pronotum (ew/pw = 1.59 to 1.63) with square  
shoulders, parallel sides and rounded apex. Striae 1 to 6 not deeply punctate and sulcate, stria 7 (sometimes also  
strias 6) more superficial, represented only by a row of fine punctures. Parascutellar stria long, apical stria rather  
dee, connected with stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture in convex sculpticells almost isodi- 
ametric on female elytra, slightly more transverse and  
flat in the elytra of the male specimens, slightly trans- 
verse, flat and very superficial on the pronotal disc,  
superficial, isodiagnostic on the neck and the pronot- 
al sides.

Male genitalia (Fig. 40). Phallus very large, with al- 
most the same external shape as B. persephone nan- 
genese n. ssp. Also the apical membranes are evidently  
sclerotized and wide as in B. persephone nanogenese n.  
ssp., while the basal sclerites are similar to those of B.  
jaroslavii. The peculiar endophallic character of B. golem  
is a diagonal, highly sclerotized falciform sclerite, in the  
same position as the peculiar sclerite of B. pavesii n. sp.

Intraspecific variability
The border of the metaventral process is variou-
sly developed in the members of the type series. While  
early in this species, in analogy with the other members of  
the subgenus, the normal status of this character seems  
to be the bordered one, actually few specimens show  
a metaventral process unbordered or with its anterior  
part raised but not distinctly separated by a border from  
the central part of the process.

Distribution
Known from two localities in Southern Qinghai.

Bembidion (Bembidionetolitzky) persephone  
nangenese n. ssp. (Figs. 41, 42, 52)

Diagnosis
A large sized Bembidionetolitzky with parallel elytra  
and antennomere 1 black from Qinghai with endophal- 
lus showing a reduced development of the "hand-like"  
sclerite typical of the Himalayan subspecies B. perse- 
phone persephone Andrews, 1926 and B. persephone  
yaniumae Schmidt, 2004 and an evident sclerotization  
of the apical membranes of the endophallus.

Type locality
China, Southern Qinghai, cultural steppe 20 km N  
Nanqen, ca 3300m, 32°16' N, 96°29' E.
Type series
Holotype, δ, “China - S Qinghai, ca 3300m, 32.16N, 96.29E, 5–6.7.1995, 20 km N Nanqen, cultural steppe” (CTVR); paratypes, 5 δ 5, 8 ζ 2, same collecting data as the holotype (CTVR, CSRS); 2 δ 3, 2 ζ 2, “China Qinghai east, Zhubgyugoin 4200 m, 6–7.7.1992” (CDMI, CTVR); 1 ζ, “China Qinghai, Zhubgyugoin, 6.7.92” (CRNS); 10 δ 3, 3 ζ 2, “China E Qinghai province, Zhubgyugoin, 4200 m, 6–7.7.1992” (CSMI, CTVR, CSRS); 3 δ 4, 2 ζ 3, “China - Qinghai, Dulan 10.7.1990” (CSMI, CTVR); 1 ζ, “China (Qinghai) Laji-shan Pass s. Xining, 3700–3900m, 13. - 15. VII. 1993” (CSRS).

Derivatio nominis
The name of the subspecies derives from the type locality in China, Qinghai.

Description
Length 5.60 to 6.64 mm. Head and pronotum black with faint greenish, metallic reflections. Elytra dark green with faint metallic reflections, in some specimens dark brown in the basal half. Antennae black, ventral surface of antennomere 1 slightly lighter, femora and knee infused, tibiae and tarsi reddish-brown, in some specimens dorsal surface of tarsi infused, with metallic reflections. Palpi dark brown to piceous, except for the last maxillar and labial palpmores, yellowish.

Head normal and eyes moderately convex, parallel, short frontal furrows, not deep. Antennomeres elongate (bl/al = 1.79 to 1.82, pw/hw = 1.28 to 1.35). Pronotum transverse (pw/pl = 1.44 to 1.48) with sides moderately sinuate before the sharp, square hind angles, median line deep, anterior transverse impression relatively deep and wide, posterior impression relatively not deep. Posterior margin slightly wider than the anterior one. Basal foveae extremely superficial, square, smooth or with some fine rugosities as the entire base, laterobasal carina reduced but visible.

Metaventral process anteriorly rebordered. In few specimens the border is smoothed and visible only as a relief not clearly delimited from the rest of the process.

Elytra (el/ew = 1.52 to 1.56) long and subparallel (ew/pw = 1.53 to 1.58) with square shoulders. Elytral striae 1 to 7 complete, punctate-sulcate, moderately deep. Parascutellar stria long, apical stria deep, connected with the apex of stria 7, more rarely with stria 5. Two discal elytral pores in the third interval, adjoin- ing stria 3.

Microsculpture: elytra in the males with transverse sculpticells, in the females with isodiametric microsculp- ture; in both sexes microsculpture very slightly transverse on the pronotum and isodiametric on the neck.

Male genitalia (Figs. 41, 42). As in B. persephone but endophallus showing more sclerotized apical membranes with evident scales, and a different development of the distal end of the WS. In most specimens this structure is apically undefined (Fig. 41) and ends fading in the apical membranes without evident limits. A single paratype, male, from the type locality shows a sharp, “hand-shaped” end (Fig. 42) similar to the sclerite of B. persephone (Schmidt 2003), but the apical membranes are highly sclerotized as in the other specimens of the type series.

Distribution
Known from China from Qinghai Province.

Bembidion (Bembidionetolitikya) longriba n. sp.
(Figs. 43, 53)

Diagnosis
A Bembidionetolitikya from Sichuan very similar to B. persephone but with more convex eyes, darker legs and elytra with phallus less angulated at base and endophallus showing a different development of the WS in the middle of the endophallus.

Type locality
China, Southern Qinghai, cultural steppe 20 km N Nanqen, ca 3300m, 32°16' N, 96°29' E.

Type series
Holotype, δ, “China, Sichuan, Longriba 3700m, 7.96” (CTVR); paratypes, 2 δ 2, 4 ζ 2, “China, Sichuan, Longriba 3700m, 7.96” (CFPI, CSMI, CSRS, CTVR).

Derivatio nominis
The name of the subspecies derives from the similarity with Bembidion persephone Andrewes, 1926.

Description
Length 5.66 to 6.02 mm. Dorsal surface black with metallic, faintly greenish reflections. Antennae black, ventral surface of antennomere 1 slightly lighter, legs darker than in B. persephone. Palpi piceous except for the last segment, yellowish.

Head normal, with eyes very convex, frontal furrows short and parallel, antennomeres shorter than in B. persephone (bl/al = 1.81 to 1.98, pw/hw = 1.21 to 1.24).
Pronotum (pw/pl = 1.43 to 1.44) as in B. persephone nanogenense.
Metaventral process bordered only at sides.
Elytra (el/ew = 1.51 to 1.57) rather long, (ew/pw = 1.56 to 1.58) with square humera and maximum width slightly behind the middle. Elytral striae 1 to 7 complete, punctate-sulcate, moderately deep. Parascutellar stria long, apical stria deep, connected with the apex of stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.
Microsculpture of elytra almost isodiametric in both sexes, very slightly transverse, superficial, on the pronotum and isodiametric on the neck.
Male genitalia (Fig. 43). Phallus strongly sclerotized in the basal half, central sclerite and WS as in B. persephone, but the last structure in B. longriba is shorter.
A simplified analog of the "hand-shaped" sclerite is present almost in the same position as in B. persephone.

Distribution
Known only from the type locality in China, Sichuan Province.

Bembidion (Bembidionetolitzky) bulirschianum n. sp. (Fig. 44, 54)

Diagnosis
A Bembidionetolitzky of nitivica group similar to B. pluto but distinguishable from the latter by the narrower pronotum and the phallus (Fig. 44).

Type locality
China, East Qinghai Province, Huashixia, Amne- maqen Mounts, 4400m.

Type series
Holotype, ♂, "China Qinghai or., Amnenaqen Mts., Huashixia, 23-30.VI.1998, 4400m" (CTVR); paratypes: 7 ♀♀, 3 ♂♂, same collecting data as the holotype (CBUL, CRNS, CSRS, CTVR).

Derivatio nominis
Dedicated to our friend Petr Bulirsch (Prague), accomplished specialist in Carabidae Scaratini who kindly gave us in study almost all the specimens of the type series.

Description
Length 5.34 to 5.70 mm. Head and pronotum black with metallic reflections. Elytra dark brown, darker in the basal half, with metallic reflections. Antennae pig- ceous, except for antennomere 1, dark brown. Femora and knees dark red-brown, tibiae and tarsi slightly lighter.

Head normal with eyes relatively flat and small. Frontal furrows short, parallel and very superficial (bl/al = 1.79 to 1.90, pw/hw = 1.29).
Pronotum transverse (pw/pl = 1.47 to 1.51) with sides gently sinuate before the hind angles which are in some specimens (including the holotype) right, in the others slightly obtuse. Median line moderately deep, anterior transverse impression superficial and posterior transverse impression relatively deep. Posterior margin slightly wider than the anterior one. Basal foveae somewhat triangular, rather superficial, rugose as the entire base. Laterobasal carina rudimentary.

Metaventral process bordered.
Elytra (el/ew = 1.50 to 1.53) (ew/pw = 1.58 to 1.60) relatively depressed, with maximum width slightly behind the middle, square humera and apex rounded. Sriae punctate-sulcate, rather deeply impressed in the males, more superficial in the females. Sria 7 evidently more superficial than the others. Parascutellar stria long, apical stria long and deep, connected with stria 5. Two discal elytral pores in the interval 3, adjoining stria 3.

Microsculpture of elytra in flat, narrow, markedly transverse sculpticells (male specimens) or in almost isodiametric, convex, small sculpticells (female specimens), poorly transverse, flat and superficial sculpticells on the pronotum and superficial, isodiametric on the neck and the frons.

Male genitalia (Fig. 44). Well developed WS, basal sclerites as in B. jaroslavi and B. pluto.

Distribution
Known only from the type locality in China, Qinghai.

Bembidion (Bembidionetolitzky) wrzeconkoi n. sp. (Figs. 45, 55)

Diagnosis
A small Bembidionetolitzky from Tibet with oval, depressed elytra rounded at shoulders and evident isodiametric microsculpture on the whole dorsal surface, similar to B. cymindulum but with endophallus showing WS sclerite.

Type locality
China, Central Tibet, Yungla, 5100m. 40km E of Gyantse.
Figs. 49-58 - Habitus of: 49) Bembidion pluto Andrewes, 1924; 50) Bembidion jaroslavi n. sp.; 51) Bembidion gelem n. sp.; 52) Bembidion persephone nanogenene n. sp.; 53) Bembidion lengiiba n. sp.; 54) Bembidion buliscianum n. sp.; 55) Bembidion waczionkozi n. sp.; 56) Bembidion niscola Andrewes, 1923; 57) Bembidion hojek n. sp.; 58) Bembidion pavesi n. sp.
Type series

Holotype, ♂, "China - C. Tibet, Yungla, 5100m, 40km E of Gyantse, 24.-26.5.1997" (CTVR); paratypes: 2♂ 2♀, same collecting data as the holotype (CTVR, CEEF, CSRS, CRNS, CWSC); 2♂ 2♀, "China - C. Tibet, Chakla, 5000m, 100 km N of Lhasa, 22.6.2001" (CTVR, CSRS); 1♀, "China-C Tibet, Karo-La 5121m, 30 km E of Nakarsue, 1.6.2005" (CWSC); 7♂ 2♀, "Tibet 4600m ca., Bibaxang (New Dive), 18.VI.1995" (CDMI, CTVR); 1♂, "Tibet S Of., Shela pass, Dongola La Pass, 28.6.95" (CSMI).

Derivatio nominis

Dedicated to Antonín Wrzecionko (Havtrov-Podlesť) who collected and kindly gave us in study most specimens of the type series of this species.

Description

Length 4.30 to 5.20 mm. Dorsal surface black with bronze-greenish metallic reflections, apical elytral third slightly lighter, dark brown. Antennomere 1 red, rest of antennae dark brown, legs dark red.

Head relatively large with small and depressed eyes. Fronto furrows short, parallel, wide and very superficial. Antennomeres short (bl/ai = 1.73 to 1.88, pw/hw = 1.22 to 1.23).

Pronotum transverse (pw/pl = 1.36 to 1.43) with sides evidently sinuate before the hind angles, square or slightly obtuse. Posterior margin slightly narrower than the anterior one. All the pronotal impressions not deep but evident. Basal foveae somewhat square, superficial, rugose as the entire base, laterally delimited by an evident, narrow laterobasal carina.

Metaventral process bordered at sides, in few specimens practically unbordered.

Elytra (el/ew = 1.50 to 1.51) (ew/pw = 1.57 to 1.61) oval, depressed, with rounded shoulders, evidently enlarged posteriorly, with maximum width slightly behind the middle. Sriae 1 to 6 gently punctate and shallowly sulcate, stria 7 extremely superficial, almost invisible. Parascutellar stria short, apical stria short and superficial, connected with the end of stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture isidimetric in small, convex sculpticells on the entire dorsal surface.

Male genitalia (Fig. 45). Median lobe elongated and relatively narrow; endophallus with long WS and a sclerotized ventral fold of the ostial flag, as in B. jaroslavi.

Intraspecific variability

The border of the metaventral process is variously developed in the members of the type series. While in this species, in analogy with the other members of the subgenus, the normal status of this character seems to be the bordered one, actually few specimens show a metaventral process unbordered.

Distribution

Known from Southern Central Tibet.

Bembidion (Bembidionetolitzkyi) bajeki n. sp. (Figs. 47, 57)

Diagnosis

A Bembidionetolitzkyi from Sichuan, Shaanxi, Qinghai and Eastern Tibet with very convex, suboval elytra with square shoulders and wide, convex pronotum, with endophallus showing the minimum development of the WS among the species with WS here investigated.

Type locality

China, Western Sichuan, road Luhuo-Sertar, pass 40 km North of Luhuo, 31°42'N, 100°47'E, ca 4200m, alpine meadow.

Type series

Holotype, ♂, "China - W Sichuan, road Luhuo-Sertar, pass 40 km N of Luhuo, 31°42'N, 100°47'E, ca 4200m, alpine meadow, 22.VII.1997" (CTVR); paratypes: 2♂ 2♀, same collecting data as the holotype (CTVR, CSRS, MSNV); 5♂ 3♀, "China, W Sichuan, 3800m, road Luhuo-Sertar, 20 km N Luhuo, 31°32'N, 100°42'E, mixed forest, 21.VII.1997" (CTVR); 8♂ 2♀, "CHINA W Sichuan (Ganzixi Tibet. Aut. Pref., Kangding Co.), Daxue Shan, brook bank W Tsheto La Pass, 3650 m, 20 km W Kangding, 30°04'N/101°46'E, 25.VI.1999" (CPUE, CTVR, CSRS); 59♂ 18♀, "CHINA W Sichuan (Ganzixi Tibet. Aut. Pref., Kangding Co.), Daxue Shan, brook bank W Tsheto La Pass, 3650 m, 20 km W Kangding, 30°04'N/101°46'E, 25.VI.1999" (CWBE, CSRS, CTVR); 3♂ 2♀, "Cina - Sichuan, Serxu, 4200m, VI.01" (CCVZ); 1♂, "C China, N-Sichuan, pass. Zhangla - Nanping, 22.6.1996, 4000m" (CJPH); 1♂, 1♀, "China - Shaanxi prov., Qing Ling Shan mts., track Hou Zen Zi vill. to Taibai Shan Mt., 2500 m, 27.-29.VI.1998, mixed forest" (CTVR); 1♀, "Cina - Quinling (sicl), din. Maqing m 4400, 2.VI.1998" (CSMI); 7♂ 1♀, "China, E Qinghai prov., ca 30 km N of Chumda, 4200m, 9.-12.-16.7.1992" (CSMI); 1♂, 1♀, "China, Dinghai (sicl), Laji Shan range, Shan-Hu villg., VII-97" (PIME, CTVR); 3♂ 3♀,
2♀♂, “China: E Qinghai (Gonghe) mts. 20 km N Datonghe, 36.32N/101.04E, ca. 4200m, alp. meadow/screst/grassland, 3.VI.1995” (CJPH, CTVR, CSRS); 5♂♂♀, “China Sichuan (Hongyuan) vall. 10 km SE Sanggarpar, 32.18N/102.35E, ca. 4200m, alpine meadow/screst, 19.VI.1995” (CJPH, CTVR, CSRS); 2♀♂, “China S Gansu (Labrang), valley E of Ponggar-tang, 35.14N/102.55E, ca.2700m, coniferous forest, 9.VII.1995” (CPH, CTVR); 1♀, “E Tibet, road to Toba - Jomda, pass 50 km E Toba, 31°19’N, 98°05’E, 4200 m, alpine meadow, 17.VII.1997” (CTVR).

**Derivatio nominis**

Dedicated to our friend Jiri Hajek, curator of Entomology of the Narodni Muzeum, Prague, who kindly always helps us loaning material of the very interesting Jedlicka Collection preserved in his Museum.

**Description**

Length 5.24 to 5.80 mm. Head and pronotum black and elytra dark brown to piceous, both showing faint greenish metallic reflections. Antennomere 1 red to brown, rest of antennae darker. Legs dark red to brown, with femora in general darker, in few paratypes of the same colour as the rest of the legs.

Head wide with normally convex eyes. Frontal furrows parallel, short, superficial (bl/al = 1.72 to 1.82, pw/hw = 1.25 to 1.29).

Pronotum transverse (pw/pl = 1.45 to 1.48), more convex and bigger than in most Chinese *Bembidionetolitzya* species (ew/pw = 1.52 to 1.60), with sides sinuate before the square hind angles. Posterior margin wider than the anterior one. All the pronotal impressions not deep but evident. Basal fovea somewhat square, superficial, rugose as the entire base, laterally delimited by an evident, narrow laterobasal carina.

Metaventral process faintly bordered only at sides.

Elytra (el/ew = 1.51 to 1.56) suboval, convex with square shoulders. Striae 1 to 7 gently punctate and very shallowly sulcate, stria 7 slightly less impressed than the inner ones. Parascutellar stria long, apical stria long and deep, connected with stria 5 or 7. Two discal elytral pores in the third interval, adjoining stria 3.

Microsculpture in flat, more or less transverse sculpticells irregularly aligned on elytra (as usual less transverse, almost isodiametric in the female specimens), almost isodiametric on pronotum and neck.

Male genitalia (Fig. 47). Endophallus showing the minimum development of the WS known to us. Remaining sclerites similar to those of *B. jaroslavi* and *B. werscicjkenos*, including the sclerotized basal fold of the ostial flag.

**Intraspecific variability**

Some small specimens from Sichuan (from road Luhuo-Sertar and from Serxu) show phallus more thick and with a dorsal gibbosity in the middle. We refrain from the description here of a subspecific taxon for these specimens because not all the specimens of the same population share this character, and because many other Chinese *Bembidionetolitzya* species dealt with in this study show a variability in the external shape of the male genitalia.

**Distribution**

Known from several localities in Western Sichuan, Shaanxi, Qinghai, Gansu and Eastern Tibet, is one of the species of the subgenus showing a wider distribution in China.

**Bembidion (Bembidionetolitzya) pavesii** n. sp.

(Figs. 48, 58)

**Diagnosis**

A relatively small, black Chinese *Bembidionetolitzya* with a large diagonal, very strongly sclerotized sclerite in the endophallus. In the habits it is extremely similar to *B. nivicola* Andrews, 1923, but its systematic position seems relatively isolated because among the species dealt with here this is the unique species showing a very sclerotized, elongate sclerite in the endophallus in addition to the main one. A structure somewhat similar is present in *B. golem* almost in the same point of the endophallus, but we are at present unable to state if it could be considered as an analog of the sclerite typical for *B. pavesii*.

**Type locality**

China - W Sichuan, road Luhuo-Sertar, pass 40 km North of Luhuo, 31°42’N, 100°47’E, ca 4200m, alpine meadow.

**Type series**

Holotype, ♂, “China - W Sichuan, road Luhuo-Sertar, pass 40 km N of Luhuo, 31°42’N, 100°47’E, ca 4200m, alpine meadow, 22.VII.1997” (CTVR); para-types: 2♂♂♂♀, 2♀♂, same collecting data as the holotype (CTVR, MSNV); 3♂♂♂, 1♀, “China, W Sichuan, 3800m, road Luhuo-Sertar, 20 km N Luhuo, 31°32’N, 100°42’E, mixed forest, 21.VII.1997” (CTVR, CSRS); 1♂, “China, NW Sichuan, 29 km S Qaqsa 4300m, 31.50N 98.25E, 15.VII.1998” (SMNS); 2♂♂♂♀, 4♀♂, “China: W Sichuan, 3500-4300m, Temple 35km N
Sabdé, 29°40N, 101°20E, 13-14.VII.1998" (CMWT, CTVR); 1♀, 2♂♀, "Ch. NW Sichuan, 14/7/1995, 33.09N 97.30E, pass 15 km E Xiwu, alpine meadow 4000m" (CTVR); 1♂, 3♂♀, "Ch. - NW Sichuan, 14-16.VII.1998, 32.30N, 98.25E, pass 20 km S Qagca, alpine meadows, cca 4300m" (CTVR); 1♂, 2♂♀, "Ch. NW Sichuan, 14.7.1995, 33.09N 97.30E, pass 15 km E Xiwu, alpine meadow 4000m" (CTVR); 1♂, 2♂♀, "China W. Sichuan (Ganzi Tibet. Aut. Pref., Kangding Co.), Daxue Shan, brook bank W Tsheto La Pass, 3650 m, 20 km W Kangding, 30°04'N/101°46'E, 25.VI.1999" (CWWB, CPUE, CTVR, CSRS); 5♂♂, 5♀♀, "China, Prov. Sichuan, Garze Tibetan Auton. Pref., Batang Co., Shalui Shan Pass 80 km NE Batang, 30.17.16N, 99.33.85E, 4750m, 1.VII.1999" (CWWB, CPUE, CTVR, CSRS); 4♂♂, 1♀, "China, E Qinghai prov., Qinghuai, 4200m, 1-5.7.1992" (CSMI); 2♂♂, "China Qinghai or. Amnemagen Mts., Huashixia, 23-30.VI.1998, 4400m" (CBUL); 1♂, 2♀♀, "China, Tangula Shankou m 5000, 50 km North of pass, Qinghai China, 1.-2.VII.1990" (CPMI); 1♂, 1♀, "China, Tangula pass, 12.7.1991, Qinghai 5200-5400m" (CRNS); 1♀, "China, Tangula pass, 12.7.1991, Qinghai 5200-5400m, (labelled as Bembidion (Plataphus) kuboni sp.n. Paratype, det. M. Fassati, 1987)" (CTVR); 1♂, "China - Shaanxi prov., Qing Ling Shan mts., track Hou Zen Zi vill. to Taibai Shan Mt., 2500 m, 27.-29.VI.1998, mixed forest" (CTVR).

Derivatio nominis
Dedicated to our friend Maurizio Pavesi (Milano), accomplished specialist in Coleoptera Carabidae, Odontota and Hymenoptera Chrysidae.

Description
Length 5.36 to 5.84 mm. Black with faint bronze, metallic reflections. Appendages piceous-black, except for apical ¾ of tibiae and tarsi, slightly lighter.

Head rather wide, with moderately convex eyes. Frontal furrows very superficial, parallel (bl/al = 1.70 to 1.75, pw/hw = 1.33 to 1.34).

Pronotum transverse (pw/pl = 1.44 to 1.48), depressed, gently sinuate before the square, sharp hind angles. Posterior margin wider than the anterior one. Impressions superficial, except for the basal one, relatively deep. Basal fossae square, superficial, smooth with a rudimentary laterobasal carina. Base, between the basal fossae very gently punctured. Hind pronotal setae in position slightly advanced in respect of the hind angle, as in B. jintangi.

Metasternal process rebordered.

Elytra (el/ew = 1.53 to 1.55) (ew/pw = 1.50 to 1.55) subparallel, with square shoulders and rounded apex. Striae 1 to 6 gently punctate-sulcate, stria 7 more superficial, almost absent in some paratypes. Parascutellar stria relatively long, apical stria connected with stria 5 or, more rarely, 7. Two discal elytral pores in the third interval.

Microstructure in transverse, superficial, flat, irregular sculpticells on elytra (less transverse, almost isodiametric and more convex in the females), less transverse on the pronotum, slightly more stretched near the disc, isodiametric on the neck.

Male genitalia (Fig. 48). Middle of endophallus showing an oblique, long, narrow, strongly sclerotized sclerite in ventral position.

Distribution
Known from Sichuan, Qinghai and Shaanxi. We are at present unable to state if some local forms from some localities in Qinghai characterized by different antennal length, and slight differences in the aedeagal shape could be intended as subspecific, due to the insufficient material at our disposal from these localities.

Undetermined specimens
Four female specimens have been labelled as "Bembidion subg. Bembidionetolitzky sp. det. L. Toledano & J. Schmidt, 2007" at present it is not possible to determine the specific status due to the unavailability of male, conspecific specimens from the same localities: 1♀, China, Gansu, 70 km W Wudu, 26.97, 1800-2600m (CFPJ), 1♂, SE Tibet (Xizang), Mr. Namjagbarwa Feng, 4400m; VI.1998" (CSRS); 2♀♀, China, N Sichuan province, Zhangla env., 4200-4700, 25.-29.7.1991 (CPMI, CWWB).

Conclusions
This work is another installment in the investigation of the Chinese fauna, and once again it emphasizes the incredible biodiversity present in the southwest of China. Here unique biogeographical conditions allowed a very large number of species to find places in which to isolate themselves and to survive, and allow us the opportunity to observe in nature a number of peculiar and unique character states. This contribution extends the known distribution of the subgenus in southwestern China and quintupled the number of its Chinese species.
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REFERENCES


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New records of *Bembidion (Ocydromus) irregularare* Netolitzky, 1934 and *Bembidion (Euperyphus) giganteum reinigi* Netolitzky, 1934 in China (Coleoptera Carabidae Bembidiina)

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**Abstract**

This work presents the redescription of *Bembidion irregularare* Netolitzky, 1934 from Northern Eastern Karakorum, usually ranked as species incertae sedis or, doubtfully attributed to *Bembidion subg. Bembidionetolitzky Strand*, 1929. Tentatively this species is attributed here to the subgenus *Ocydromus Clairville*, 1806 sensu Kryzhanovskij et al. (1995), i.e. a complex of species groups sharing several diagnostic characters in different combinations, often not allowing the separation into monophyletic groups which could lead to treat them as independent subgenera. *Bembidion (Euperyphus) giganteum reinigi* Netolitzky, 1934, described from Western Pamir, is reported for the first time for China. This is also the first citation for China of the subgenus *Euperyphus* Jeannel, 1941.

**Key words:** Coleoptera, Carabidae, Bembidiina, Bembidion, Ocydromus, Euperyphus, Palaeartic region, China, taxonomy, redescription.

**Materials and Methods**

This paper is based on the study of 20 specimens belonging to the species here investigated. Sources of material are the following collections:

- CBUL: Petr Bulirsch Collection, Praha, Czech Republic
- CNFO: Paolo Neri Collection, Forlì, Italy
- CSCR: Martin Slachra Collection, České Budejovice, Czech Republic
- CTVR: Luca Toledano Collection, Verona, Italy
- MSNM: Museo Civico di Storia Naturale di Milano (Dr. Fabrizio Rigato, Mr. Maurizio Pavesi)
- NHMHS: National Museum of Natural History, Bulgaria

NATIONAL HISTORICAL MUSEUM, Wien, Austria
(Dr. Heinrich Schönmann, Dr. Manfred Jäch, Dr. Harald Schillhammer)

Measurements, made with a Leica MZ12 stereomicroscope at 25 x (body) and 100 x (phallicus), are expressed in the text by these abbreviations:

- pw/pl: pronotum width / pronotum length ratio;
- pw/hw: pronotum width / head width ratio;
- el/ew: elytral length / elytral width ratio;
- ew/pw: elytral width / pronotum width ratio;
- bl/al: total body length / antennal length ratio.
Body length was measured for card-mounted specimens from the front margin of the clypeus to the apex of the elytra, and the antennal length from base of antennomere 1 to the apex of antennomere 11. Pronotal length is measured in the middle.

Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal, attached to label-size acetate sheets and mounted on the same pins as the specimens.

Photo of Fig. 1 was taken with a Nikon Coolpix 995 digital camera on a Leica MZ12 stereobinocular microscope. Drawings of the phallos were made by correcting images taken with the same digital camera on the same microscope with the Adobe Photoshop® Elements 3.0 program on a Macintosh Powerbook G4 computer.

The subgenus Ocydrorus Clairville, 1806 is intended here sensu Kryzhanovskij et al. (1995) because it is a complex of species-groups sharing several diagnostic characters in different combinations. This often does not allow the separation into monophyletic groups which could be treated as independent subgenera. In any case we still refrain here from a formal synonymization of the taxa downgraded to species groups waiting for more evidence.

_Bembidion (Ocydrorus) irregularare_ Netolitzky, 1934 (Figs. 1, 2, 3, 4, 5, 6)

**Diagnosis**

A large species (6.00 to 7.24 mm) from Northern Eastern Karakorum showing long, reddish-brown elytra, three discal elytral pores, flat and narrow pronotum, somewhat similar in habitus to _Bembidionetolitzky_ Strand, 1929 _pelioterum_ Chaudoir, 1850 species group, Schmidt, 2004; short, “S” shaped flagellum and “coffee sclerite” in the endophallus.

**Systematic notes**

Hitherto this species was classified as _Bembidion incertae sedis_ (Schmidt, 2004; Lorenz, 2005). Tentatively, based on the original description of the habitus, somewhat similar to the species of subg. _Bembidionetolitzkyae, pelioterum_ species-group (long species with depressed pronotum, flat and long reddish-brown elytra and complete elytral striation) it has been regarded also as a species of the subgenus _Bembidionetolitzkyae_ (Lorenz, 1998; Marggi et al. 2003). On the determinaton label of the type specimen Netolitzky himself wrote “Daniela 2” (note: the name _Bembidionetolitzkyae_ replaced the name _Daniela_ Netolitzky, 1910 fallen into homonymy with a Genus of Coelenterata). The study of the holotype and of the other specimens we had the chance to examine revealed that the species actually belongs to the subgenus _Ocydrorus_ Clairville, 1806, intended sensu lato (Kryzhanovskij et al., 1995; Toledano, 2000, 2008). More precisely, _Bembidion irregularare_ should be included within the “Peryphus species-group Stephens, 1828” sensu Kryzhanovskij et al. (1995), or, better, in an independent species group.

The localities “Gund” (Sind Tal), and “Tarimbeck in” (Netolitzky, 1934) (“Tarim basin, Shaksgan Valley”, Andrews, 1935) and the other localities of the new material we examined in this study (China, Qogir su Camp, K2, and Pakistan, Kande, Hushe valley), are near to one another, therefore the species seems to have a limited distribution.

The comparison with the holotype (Fig. 2) confirmed that the other examined specimens belong to the same taxon as the type. Unfortunately, the type lacks the phallus. Probably it was dissected, but on the same pin as the type there is no label with reference to any separate slide containing this phallus. Therefore we were unable to study the male genitalia of the holotype. On the other hand, the extreme similarity of the habitus and the vicinity to the known collecting localities allowed us to describe the male genitalia of this species on the males more recently collected.

The species herewith redescribed shows an interesting endophallic apomorphy which is unique within the _Ocydrorus_ complex. The “coffee sclerite” (see below) seems to be a particular development of a structure present in other species groups of the complex (“dorsal plate + flagellar sheet”, Maddison, 1993; “poche ventrale + fourreau ventral”, Coulon, 2002). On the other hand, the presence of a thin but evident tubular flagellum in a phallus with a “Peryphus - like” shape (subg. _Ocydrorus, “Peryphus_ Stephens, 1828 species group” sensu Kryzhanovskij et al., 1995), i.e. with subparallel ventral and dorsal margins and triangular apical fifth, suggests the inclusion within the subgenus _Ocydrorus_. The large size of _B. irregularare_ could suggest relationships with the subgenus _Euperyphus_ Jeannel, 1941 which, on the other hand, is excluded by the extreme homogeneity of the form of the endophallus of the _Euperyphus_ species, lacking any structure showing analogies with the apomorphy of the species herewith described. _Euperyphus_ species have a strong pronotal convexity, often a good indicator of phylogenetic relationships in the Bembidiina, certainly not shared by _B. irregularare_. Also the presence of three discal elytral pores does not suggest anything about its systematic position because, as already demonstrated (Toledano, 2000; Toledano & Sciaky, 2004; Toledano & Schmidt, 2008) the presence
Examination of the photographs and drawings suggests the following:

of supernumerary discal elytral pores should be in most cases ignored as superspecific indicator in the Bembidina. In any case we refrain from the description of a monospecific subgenus for this species.

The length of the holotype, according to the Netolitzky's (1934) original description is 5.5 mm, while the correct measurement of the specimen is 6.36 mm.

Examination of material

Holotype, ♂, 1) "Sind - Tal // Gund - m.2500 // 9-IV-1929," (handwritten); 2) "Typus" (red, handwritten); 3) "Holotypus" (red, printed); 4) "Daniela?" (handwritten) // irregulare Net. (handwritten) // Type (handwritten) // det. Netolitzky (printed)" (MSNM); 4♂♀, 6♀♀, N - Pakistan. Karakoram Mts., Baltistan pr., Hushe valley, Kande, 2940 ± 20m, N 35°21'45.7", E 076°22'07", 16.9.2001 Lgt.M Slachta (CSCR, CTVR, CNFO, CBUL); 1♂, 1♀, "China, Karakorum, river Shaksgam, 31.VIII.1988 Leg. P. Beron" (NHMS, CTVR); 1♂ "China, Karakorum, K2, Qogir Su Camp, 1.IX.1988 Leg. P. Beron" (CNFO).

Redescription

Length 6.00 to 7.24 mm. Head and pronotum pi-
ceous, except for frons, neck and anterior pronotal margin brownish. Elytra reddish-brown, sometimes with sides slightly darker, with very faint metallic reflections at sides. Antennomeres 1 and 2 red; antennomere 3 red, sometimes slightly infuscated in the apical half; the remaining antennomeres slightly infuscated. Palpi light brown, with penultimate maxillar palpomere slightly infuscated at apex. Legs light reddish.

Head (pw/hw = 1.17 to 1.22) with parallel and moderately impressed frontal furrows, eyes of normal convexity and antennomeres very long (bl/ai = 1.44 to 1.50).

Pronotum (Fig. 3) small (pw/pl = 1.28 to 1.35), depressed, cordiform, with sides evidently sinuate before the hind angles, median line and anterior transverse impression rather deep, posterior transverse impression slightly deeper, basal foveae flat and rugose as the entire base, hind angles sharp, of variable shape, obtuse in some specimens, right-angled in some others. Laterobasal carina rudimentary. Pronotum rugose near the margins, with long rugosities radially oriented from the middle of the pronotal disc.

Metaventral process bordered. Legs elongate.

Elytra (el/ew = 1.61 to 1.63) (ew/pw = 1.70 to 1.74), flat, elongate, with maximum width evidently behind the middle, shoulders narrow but marked, apex round. Elytral striae 1 to 6 almost complete, weakly punctate at the basal two thirds, weakly punctate-sulcate at the apical third. Stria 7 almost completely absent. Parasutellar stria long, apical stria long, connected with the apical trace of stria 7. Intervals flat. Three discal elytral pores in the third interval, in some cases adjoining stria 3, in some others more spaced from stria 3, evidently situated in the interval.

Microsculpture very superficial, isodiametric on neck, slightly more transverse on the pronotal sides; evident, isodiametric on the whole elytra.

Male genitalia (Fig. 4, 5). External shape of the median part of the phallosus subparallel, thick, with apical fifth triangular, as in the species of the subg. Euperyphus. External surface of the median lobe covered of very fine pores (Fig. 5). Endophallus showing a strongly sclerotized sclerite ("brush sclerite", (Maddison, 1993); "paquet squamigère" (Coulon, 2002)), slightly less homogeneous than in the other species of the Oecatosoma complex. The "coffee sclerite" is a strongly sclerotized "coffee-bean shaped" appendage situated on the dorsoapical margin of a flat, poorly sclerotized membraneous suboval sclerite situated about at the middle of the endophallus ("dorsal plate + flagellar sheet", (Maddison, 1993); "poche ventrale + fourreau ventral", (Coulon, 2002)). Apically to the dorsal plate there is a membrane, perhaps somewhat connected with the dorsal plate, showing an acute sclerotized ventrioproal border, extended from the middle of the median lobe to its apical quarter. A very thin, sinuate tubular flagellum ends at the anterior third of the phallus, near the ostial flag, partially covered by the sclerotized ventrioproal border mentioned above. Apex of phallus flat and rounded, relatively large. Parameres with three apical setae each.

Female genitalia. Spermaphetica (Fig. 6) with elongate reservoir and coiled duct; not visible a sclerified annulus receptaculi.

**Distribution**

Known from Northern Eastern Karakorum.

*Bembidion (Euperyphus) giganteum reinigi* Netolitzky, 1934

This is the first citation of the species and the subgenus for China, and extends toward South East the distribution of the species.

**Examined material**

Holotype, ♂, "West Pamir, VII.X.28, Leg. Reinig" (NHMW); paratype, ♀, same data as the holotype (NHMW): 1 ♂, 3 ♀, China, Karakorum, K2, 4000m, 2.IX.1988, leg. P. Beron (NHMHS, CNFO, CTVR).

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REFERENCES


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The genus *Sinechostictus* Motschulsky, 1864 in China: a revision (Coleoptera Carabidae Bembidiina)

LUCA TOLEDANO  
(*Museo Civico di Storia Naturale di Verona*)

**ABSTRACT**

The validity of *Sinechostictus* Motschulsky, 1864 as a genus is confirmed, and the oriental species of the genus are attributed to its subgenus *Pseudolimnaeum* Kraatz, 1888. A key for the Chinese species of the genus is provided.

Nomenclatorial acts proposed in this paper:  
New taxa: *Sinechostictus* (Pseudolimnaeum) cameroni andreasquetzi n. sp. (China); *Sinechostictus* (Pseudolimnaeum) emeishanicus n. sp. (China); *Sinechostictus* (Pseudolimnaeum) muryungsi n. sp. (China); *Sinechostictus* (Pseudolimnaeum) alesmetana n. sp. (China); *Sinechostictus* (Pseudolimnaeum) wernermarggi n. sp. (China).

Changes of status: *Sinechostictus* (Pseudolimnaeum) exaratus aeneoviridicans (Netolitzky, 1938) stat. n. (downgraded from *Sinechostictus* aeneoviridicans (Netolitzky, 1938)).

**Key words:** Coleoptera, Carabidae, Bembidiina, Sinechostictus, Pseudolimnaeum, Palaeartic region, taxonomy, key for species.

**RIASSUNTO**

Il genere *Sinechostictus* Motschulsky, 1864 in Cina: una revisione (Coleoptera Carabidae Bembidiina). *La validità di Sinechostictus Motschulsky, 1864 come genere è confermata, e le specie orientali del genere sono attribuite al suo sottogenere Pseudolimnaeum Kraatz, 1888. Viene fornita una chiave per le specie cinesi del genere.*

**Nuovi taxa:** *Sinechostictus* (Pseudolimnaeum) cameroni andreasquetzi n. sp. (Cina); *Sinechostictus* (Pseudolimnaeum) emeishanicus n. sp. (Cina); *Sinechostictus* (Pseudolimnaeum) muryungsi n. sp. (Cina); *Sinechostictus* (Pseudolimnaeum) alesmetana n. sp. (Cina); *Sinechostictus* (Pseudolimnaeum) wernermarggi n. sp. (Cina).

**Cambi di status:** *Sinechostictus* (Pseudolimnaeum) exaratus aeneoviridicans (Netolitzky, 1938) stat. n. (da *Sinechostictus* aeneoviridicans (Netolitzky, 1938)).

**Parole chiave:** Coleoptera, Carabidae, Bembidiina, Sinechostictus, Pseudolimnaeum, regione palaeartic, tassonomia, chiave per specie.

**MATERIALS AND METHODS**

This paper is based on the study of about 200 specimens belonging to Genus *Sinechostictus* Motschulsky, 1864.

Sources of material are the collections of the following institutions and persons:

- CSMI: Riccardo Sciaky Collection, Milano, Italy
- CTVR: Luca Toledano Collection, Verona, Italy
- CWBE: David W. Wrase Collection, Berlin, Germany
- IZAS: Institute of Zoology, The Chinese Academy of Sciences, Beijing, (Prof. Yu Peiyu, Dr. Hongbin Liang)
- NHMW: Naturhistorisches Museum, Wien (Dr. Manfred Jäch, Dr. Heinrich Schönmann, Dr. Harald Schillhammer)
- SMNS: Staatliches Museum für Naturkunde, Stuttgart (Dr. Wolfgang Schawaller)

For the following collections, I use the standard codes provided in Arnert et al. (1993):

- CASO: Ales Smetana Collection, Ottawa, Canada
- CJP: Miroslav Janata Collection, Praha, Czech Republic
- CMWT: Werner Marggi Collection, Thun, Switzerland
- CPUE: Andreas Pütz Collection, Eisenhüttenteich, Germany
- CRNS: Karel Rébl Collection, Nové Straseci, Czech Republic

Measurements, made with a Leica MZ12 stereobin-
ocular microscope at 25 x (body) and 100 x (phallus), are expressed in the text by these abbreviations:

\[ \text{pw/pl} \quad \text{pronotum width / pronotum length ratio;} \]
\[ \text{pw/hw} \quad \text{pronotum width / head width ratio;} \]
\[ \text{el/ew} \quad \text{elytral length / elytral width ratio;} \]
\[ \text{ew/pw} \quad \text{elytral width / pronotum width ratio;} \]

The body length was measured for card-mounted specimens from the front margin of the clypeus to the apex of the elytra. The pronotal length in the species with lateral ends of anterior pronotal margin anteriorly protruding is measured in the middle.

Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal, attached to label-size acetate sheets and mounted on the same pins as the specimens.

Photographs were taken with a Nikon Coolpix 995 digital camera on a Leica MZ12 stereobinocular microscope. Drawings of the phalli were made by correcting images taken with a Nikon Coolpix 995 digital camera on the same microscope with the Adobe Photoshop® Elements 3.0 program on a Macintosh Powerbook G4 computer.

Genus *Sinechostictus* Motschulsky, 1864
(Type species: *Sinechostictus rugicornis* (Sturm, 1825))

*Sinechostictus* subgen. *Pseudolimnaeus* Kraatz, 1888
(Type species: *Sinechostictus inustus* (Duval, 1857))
*gen. Pseudolimnaeus* Kraatz (Vigna Taglianti 1993)

Systematic notes
As for most other superspecific groups of Bembidiina, the ranking of *Sinechostictus* according to different authors was inspired by Jeannel's (1941) tendency to split, or by Netolitzky's (1942-43) tendency to lump. Therefore, in the past, this group has been dealt with in at least two different principal ways: as a subgenus of *Bembidion* (Kryzhanovskij et al., 1995, Müller-Motzfeld, 1995, Toledano, 2000, Marggi et al., 2003, Lorenz, 1998, 2005) or as a separate genus (Jeannel, 1941, Vigna Taglianti, 1993, Ortuño & Toribio, 2005). Now, I agree with the latter decision, seemingly confirmed also by chromosome studies (Serrano & Galian, 1998), by DNA analysis (David Maddison, personal communication) and by a study on the larval morphology (Grebenikov & Maddison, 2005). Only Antoine (1955) ranked *Sinechostictus* as a subgenus of *Ocydromus*, but this decision is unacceptable. Vigna Taglianti (1993) ranked also *Pseudolimnaeus* as a genus.
Marggi et al. (2003) combined *Pseudolimnaeus* and *Sinechostictus* in a single genus, not recognizing subgenera. The shared characters in the male genitalia (basal opening on the dorsal surface of phallus, absence of the central sclerotized brush in the endophallus) and the shared punctate ventral prothoracic surface, led me also to include *Sinechostictus* and *Pseudolimnaeus* in a single genus, but in my opinion a subgeneric ranking of these groups is necessary. In fact, the pronotal base with a deep sulcus at middle, the main external apomorphy of *Pseudolimnaeus*, is a character lacking from most *Sinechostictus* species, but seems to have a systematic importance, as have many other characters of the pronotal base in the Bembidiina (shape and depth of the basal foveae, corrugation, punctuation, presence or absence of a laterobasal carina, shape of the basal margin, etc.). As mentioned above, more recently Ortuño & Toribio (2005) in a general settlement of the Bembidiina based on the "lumping way", ranked *Sinechostictus* as a genus, and attributed to it *Pseudolimnaeus*, which they ranked as a subgenus. This systematic treatment is followed here.

The Oriental species of the group seem to be more closely related to the subgenus *Pseudolimnaeus* than to *Sinechostictus* (sensu stricto); therefore, while awaiting a better knowledge of the group, known from Northern India to Japan, the new species described here are attributed to *Pseudolimnaeus*, rather than proposing a new subgenus for the Oriental species.

Even though the absence of the central sclerotized brush in the endophallus of the *Sinechostictus* species probably could not be on itself a valid reason to demonstrate their generic independence, as declared by Lindroth (1976) for some South American subgenera of *Bembidion* Latreille, 1802, probably the sharing of this character in all the *Sinechostictus* species is an element which confirms its monophyly.

**KEY TO THE CHINESE SPECIES OF SINECHOSTICTUS SUBGENUS PSEUDOLIMNAEUS**

1 Head without frontal punctures, or with a single median frontal puncture; elytra very broad compared to pronotum (ew/pw = 1.73 to 1.84) with
clearly marked humeri; size variable (4.72 to 5.84 mm, large specimens more frequent than small ones) (Fig. 1) .........................

... exaratus sp. aeneoviridimicans Netolitzky, 1938
- Head with a single, median frontal puncture or several frontal punctures, elytra narrower compared to pronotum (ew/pw = 1.48 to 1.68) with relatively rounded humeri (Figs. 2, 3, 4, 5, 6) .................. 2

2 Head with several frontal punctures, Sichuan and Hubei ........................................... 3
- Head with single, median puncture, Yunnan

3 Eyes flatter; elytral microsculpture evident (at least in females) ........................................... emetianicus n. sp.
- Eyes prominent; without elytral microsculpture .. 4

4 Larger in size (length 4.96 to 5.38 mm); elytral apex rounded; Sichuan............. wernermargii n. sp.
- Smaller in size (length 4.50 to 4.75 mm); elytra more or less pointed at apex; Hubei and Sichuan ...

5 Elytral apex moderately pointed, striae sulcate; phallos as in Fig. 11; Sichuan

.............................. cameroni andreaspruetzi n. sp.
- Elytra pointed at apex, striae punctate; phallos as in Fig. 10; Hubei

.............................. mahunining n. sp.

S. (Pseudolimnaeum) exaratus aeneoviridimicans
Netolitzky, 1938 new status
(Figs. 1, 7)

Bembidion (Pseudolimnaeum) aeneoviridimicans
Netolitzky, 1938

Systematic notes
The description of this species was based on a single female from China. The abundant material I examined reveals that S. aeneoviridimicans is almost identical in habitus to S. exaratus Andrews, 1924 except for a slight difference in the pronotum (narrower in S. aeneoviridimicans), which leads me to rank this taxon as subspecies of S. exaratus. The endophallus is identical in both taxa.

Examined material
Holotype, 2, China, Szechuan mer., Mrs. Kingfishan, 2000 m pr. flum. Sung-Kanho (NHMW); 7 exx., China: SE Sichuan, Jinfo Shan, 29°01′N, 107°14′E, 1700-1950m, 24-29.VI.1998 (CMWT, CTVR); 5 exx., China, W Sichuan (Ya’an Pref. Tianquon Co.) E Erlang Shan Pass 2900m, 9 km SE Luding, 29°52′N / 102°18′E (brook bank), 20-22.VI.1999 (CWBE, CTVR); 1 ex., China, Sichuan, Daxue Shan, Gongga Shan Mt. Hai-lo-gou Glacier Park, 102°04′E, 29°36′N, river valley ca. 7 km above Camp 1, 2100m, 28./31.V.1997 (CWBE); 2 exx., China: Sichuan, Gongga Shan, Hallougou, above Camp 2, 29°35′N 102°06′E, 2600-2750m, 3-6.VII.1998 (CMWT, CTVR); 2 exx., China, Tibet, Bomí (=Zhamo) County, 29.8°N, 95.7°E (IZAS, CTVR); 39 exx., China (W-Hubei) Daba Shan, creek vall. 8 km NW Muyuping, 31°29′N/110°22′E, 1540m (mix.fot./shady meadow, slopes/moss-sifted, 18.VII.2001” (CWBE, CTVR); 12 exx., China: W-Hubei Daba Shan crk. valley 8 km NW Muyuping 31°29′N, 110°22′E, 1550-1650m, 18.VII.2001 (CASO, CTVR); 3 exx., China (S Shaxn) Qinling Shan, river bank above Houzenzi, 115 km WSW Xi’an, 2500m, 33°50′N / 107°47′E (coarse gravel bank, floating). 4.VII.2001”(CWBE); 1 ex., China: Shaxn Qiulin Shan above Houzenzi, 115 km WSW Xi’an, 1450m 33°50′N, 107°47′E 5.VII.2001 (CTVR); 1 ex., C China: SW Shaxn, Qinling Mt., 2600m, Houzenzi, 7.7.1996 (CJPH); 23 exx., China, Guizhou, Leishan Co., SE Kaili, NE Leishan, Leigong Shan, E - slope 26°23.59′N 108°13.33′E (NHMW, CTVR); 1 δ, China, Nuijiang Lisu Aut. Pref., Gongshan Co., Gaolianggong Shan, sidevalley at 3000-3050m, 27°47′90′N, 98°30′19′E, (Coniferous forest with Rhododendron and other broad leaved bushes, litter, moss / dead wood, sifted along creek and snowfields) 21.VI.2005 (CWBE).

S. (Pseudolimnaeum) alesmetana n. sp.
(Figs. 2, 8)

Diagnosis
A small Sincheoticus from Yunnan similar to S. cameroni Andrews, 1922 showing head with a single median frontal puncture and apex of phallus longer and thinner than in S. cameroni.

Type locality
China: Yunnan, above Dali, 2500-2700m.

Type series
Holotype, δ, “China: Yunnan, above Dali, 2500-2700m, 8.-18.IV.1999” (SMNS); paratypes: 2 δ, 1 Σ, same date and locality as the holotype (SMNS, CTVR); 1 δ, “China (N Yunnan) Dali Bai Nat. Aut. Pref. Diancang Shan, 3 km W Dali old town, creek valley and pine forest at “cloud road” right upper chairlift station, 25°41.1′N/100°06.8′E, 2650-2750m, (litter, pine needles, dry and wet moss), 29.VII.2003 (CWBE); 2 δ, “China, N Yunnan Dali Bai Nat. Aut. Pref. Diancang Shan 3 km W Dali 25°41.1′N, 100°06.8′E, 2650-
Figs. 1-6 - Habitus of: 1) Sinochrostus (Pseudolimnaeum) ecaratus aeneoviridescens Netolitzky, specimen from China, Sichuan, Ya'an Pref., Tianquan Co., Jiajin Shan valley, 30°03'N 102°27'E (CWBE); 2) S. (P) aleometana n. sp., paratype from China: Yunnan, above Dali, 2500-2700m, 8.-18.IV.1999° (SMNS); 3) S. (P) emeljanicus n. sp., Holotype (CSM); 4) S. (P) wernermargitt n. sp., Holotype (CMWT); 5) S. (P) masyupingi n. sp., Holotype (CTVR); 6) S. (P) cameroni andreaspucetti n. sp., Holotype (CPUE). Scale = 1mm.
2750 m, 29.8.03° (CASO, CTVR); 1♂, “China, Nujiang Lisu Aut. Pref., Gongshan Co., Gaoligong Shan, sidevalley at 3000-3050 m, 27°47.90'N, 98°30.19'E, (Coniferous forest with Rhododendron and other broad leaved bushes, litter, moss / dead wood, sifted along creek and snowfields) 21.VI.2005” (CWBE); 1f♀, “China, N-W Yunnan, 3300m, Hengduan Shan - Yanmen N 28°00'48.4", E 098°50'20.1", 15.6.2005” (CJPH).

Derisatio nominis
The name derives from the fusion of the given and family names of my friend Ales Smetana, a distinguished Canadian staphylinid specialist who gave me two specimens of S. alesmetana, for study. The name is given in apposition.

Description
Length 4.54 to 4.88 mm

Head wide, with frontal furrows deep and parallel throughout length, extended anteriorly to the wideclypeus; a single frontal puncture at middle. Eyes prominent.

Pronotum narrow, (pw/pl = 1.17 to 1.18) disc markedly convex (ew/pw = 1.60 to 1.68), lateral margins rounded anteriorly, then evidently sinuate, posterior fourth of lateral margin rectilinear anterior to the right posterolateral angles. Lateral seta at anterior third, basal one at posterolateral angle. Lateral channel narrow, basal margin rectilinear, wider than the anterior margin. Basal foveae round and deep and punctate as whole base, laterally delimited by an evident laterobasal carina; anterior transverse impression shallow, median longitudinal impression deep, very deep in basal 3/5, extended posteriorly to basal margin.

Metaventral process unbordered.

Elytra (el/ew = 1.53 to 1.57) ovate, with maximum width posterior to middle, humeri and apex rounded. Elytral stria punctate, 1-6 deep, 7 shallower, all absent from about apical fourth to apex, except stria 1, extended to apex. Discal setigerous punctures two on interval 3, rather close to stria 3. Parascutellar stria short, sulcate-punctate, apical stria absent, apical setigerous puncture isolated.

Male genitalia (Fig. 8). Phallus arcuate, with narrow and long apex. Endophallus with four sclerites. One, oval, if seen from the left side of the phallus covers another one, elongate and pointed in its anterior end. A small, flat sclerite ventrally to the others mentioned above. Fourth sclerite, flat, relatively wide, in vertical position near base.

Female genitalia. Spermatheca simple with long, coiled duct, annulus receptacular not sclerotized and reservoir almost cylindrical, narrow, slightly curved, represented by a widening of the duct, slightly sclerotized.

Geographical distribution
Known from the southwestern Chinese Provinces of Yunnan.

Intraspecific variability?
A female paratype from Yanmen, Yunnan (CJPH), differs from the others in the larger and wider body (length 5.04 mm), in the shorter and thicker antennomeres and in the slightly darker colour of antennae and legs. In the case of the following species, I decided to describe S. emeishanicus n. sp. on a single female specimen. In the case of the specimen from Yanmen I prefer to refrain from the description of another new species because at present I am unable to state if these differences have a specific, subspecific or individual value, waiting for the availability of new material.

S. (Pseudolimniaeum) emeishanicus n. sp. (Fig. 3)

Diagnosis
The only Sinechosticus species from China showing flat eyes, narrow elytra and extensive elytral microsculpture.

Type locality
China, W Sichuan, Emei Shan 2800m.

Type series
Holotype, ♀, “Cina - W Sichuan, Emei Shan 2800m, 25.31.VI.92” (CSMD).

Derisatio nominis
The specific epithet derives from the type locality of this species.

Description
Length 4.78 mm.
Colour. Body piceous-black, elytra slightly paler than in the other species of the group. Antennae bicoloured: antennomeres 1, 2, basal half of 3 and 4, and apex of 11 red; remaining surfaces dark. Maxillary palpi with penultimate articles dark. Legs red.
Head with frons finely punctate over entire surface, frontal furrows parallel and deep. Eyes rather flat.

Pronotum relatively transverse (pw/pl = 1.22) relatively small compared to elytra (ew/pw = 1.48), lateral margins rounded anteriorly, then evidently sinuate, posterior fourth of lateral margins rectilinear anterior to the right posterolateral angles. Lateral seta at anterior third, basal one at posterolateral angle. Lateral channel narrow, basal margin rectilinear, wider than anterior margin. Basal foveae round and deep and punctate as entire base, laterally delimitated by an evident laterobasal carina, anterior transverse impression shallow, median longitudinal impression deep, very deep in the basal 3/5, extended to basal margin.

Metaventral process unbordered.

Elytra with rounded humeri and pointed apex, narrower than in the other species (el/ew = 1.66). Elytral striae punctate, 1-6 deep, 7 shallow. Parascutellar stria long, punctate. Apical stria absent, apical setigerous puncture isolated. Discal setigerous punctures two on interval 3, near stria 3.

Microsculpture: mesh pattern isodiametric, evident on entire dorsal surface, although less evident on a few portions of the pronotal disc.

Male genitalia. Unknown.

Female genitalia. Spermatheca simple with long duct, annulus receptaculi not sclerotized and reservoir almost cylindrical, narrow, slightly curved, represented by a widening of the duct, slightly sclerotized.

Geographical distribution

Known only from the type locality in the southwestern Chinese Province of Sichuan.

S. (Pseudolimnaeum) wernermarggii n. sp.

(Figs. 4, 9)

Diagnosis

A relatively large Sinechostictus species from Sichuan with broad pronotum, head coarsely punctate and prominent eyes.

Type locality

China, SE Sichuan, Jinfo Shan, 29°01N, 107°14E, 1700-1950m.

Type series

Holotype, ♂, “China: SE Sichuan, Jinfo Shan, 29°01N, 107°14E, 1700-1950m, 24-29.VI.98” (CMWT); paratypes, 1 ♂, 1 ♀, same date and locality as the holotype (CMWT, CTVR).

Derivatio nominis

The specific epithet is a patronym, based on the name of my friend Werner Marggii, well known Swiss specialist on Bembidina and co-author of the Checklist of the Palearctic Bembidion species (2003), who kindly gave me for study the type series of this species, which is dedicated to him.

Description

Length 4.96 to 5.38 mm.


Head relatively wide, with frons coarsely punctate over entire surface; frontal furrows parallel and deep, almost not extended to clypeus. Eyes prominent.

Pronotum relatively transverse (pw/pl = 1.20 to 1.22) relatively small compared to elytra (ew/pw = 1.55 to 1.57), lateral margins rounded anteriorly, then evidently sinuate, posterior fourth of lateral margin rectilinear anterior to the right posterolateral angles. Lateral seta at anterior third, basal one at posterolateral angle. Lateral channel narrow, basal margin rectilinear, wider than anterior margin. Basal foveae round and deep and punctate as entire base, laterally delimitated each side by an evident laterobasal carina; anterior transverse impression shallow, median longitudinal impression deep, very deep in the basal 3/5, extended posteriorly to basal margin.

Metaventral process unbordered.

Elytra (el/ew = 1.62) ovate, with maximum width slightly posterior to middle, humeri and apex rounded. Elytral striae punctate, 1-6 deep, 7 shallow, all disappeared at about apical fourth, except stria 1 which is extended to apex. Discal setigerous punctures two on interval 3, rather near stria 3. Parascutellar stria short, sulcate-punctate, apical stria absent, apical setigerous puncture isolated.

Male genitalia (Fig. 9). Phallus larger than in S. alemetana, less arcuate, with apex less elongate. Basal flat sclerite evidently smaller than in S. alemetana.

Female genitalia. Spermatheca simple with long duct, annulus receptaculi not sclerotized and reservoir almost cylindrical, narrow, slightly curved, represented by a widening of the duct, slightly sclerotized.

Geographical distribution

Known only from the type locality in Southeastern Sichuan Province, southwestern China.

Affinities

See under S. musupingi n. sp.
S. (Pseudolinnaeum) muyupingi n. sp.
(Figs. 5, 10)

Diagnosis
A Sinechostictus species from Hubei similar to S. cameroni with phallus showing the basal part more prominent.

Type locality
China: W-Hubei, Daba Shan mountains range NE Muyuping, valley 4 km N Muyuping, 1700m.

Type series
Holotype, ♂, “China: W-Hubei, Daba Shan mtn. range NE Muyuping, crk., valley 4 km N Muyuping, 1700m 21.7.01 (C116)” (CTVR); paratype, ♂, “China W Hubei, 31.5N 110.3E, 2.3km Dashiannongxia mts., 22.6.2001” (CRNS).

Descriptio nominis
The subspecific epithet derives from the type locality in Yunnan Province, China.

Description
Length 4.50 to 4.76 mm.
Head narrower than pronotum, with frontal furrows deep and parallel, and with several frontal punctures. Eyes relatively small.

Pronotum narrow (pw/pl = 1.18 to 1.21), relatively small compared to elytra (ew/pw = 1.55 to 1.67), lateral margins rounded anteriorly, then moderately sinuate, posterior fourth of lateral margin rectilinear anterior to the right posteroventral angles. Lateral seta at anterior third, basal one at posteroventral angle. Lateral channel narrow, basal margin rectilinear, wider than anterior margin. Basal foveae round and deep and punctate as entire base, laterally delimited by an evident laterobasal carina; anterior transverse impression shallow, median longitudinal impression extended to basal margin, deep, very deep in basal 3/5.
Metaventral process unbordered.

Elytra (el/ew = 1.62 to 1.67) ovate, with relatively rounded humeri and apex pointed. Elytral striae 1-7 evidently punctate, disappeared at about apical fourth to apex, except stria 1 which is extended to apex. Discal setigerous punctures two on interval 3, rather near stria 3. Parascutellar stria short, punctate, apical stria absent, apical setigerous puncture isolated.

Microsculpture absent from dorsal surface, except very shallow isodiometric sculpticells here and there on the neck.

Male genitalia (Fig. 10). Almost identical to those of S. wernermargii.
Female genitalia. Unknown.

Geographical distribution
Known from Hubei Province, southern China.
Affinities
Because of the marked similarity in male genitalia, this species seems to be closely related to S. wernermarggi.

*S. (Pseudolimnaeum) cameroni andreaspuetzii* n. ssp.
(Figs. 6, 11)

Diagnosis
A member of *S. cameroni* from Sichuan with elytra sulcate-punctate.

Type locality
China, Sichuan, Daxue Shan, Gongga Shan Mt. Haigolou Glacier Park, 2650m.

Type series

Derivatio nominis
The subspecies is dedicated to my friend Andreas Pütz, Eisenhüttenstadt, Germany, who kindly gave me the type specimen for study.

Description
Length 4.52 mm.


Head slightly narrower than pronotum, with deep and parallel frontal furrows and several small frontal punctures. Eyes relatively small.

Pronotum narrow (pw/pl = 1.21), relatively small compared to elytra (ew/pw = 1.78), lateral margins rounded anteriorly, then evidently sinuate, posterior fourth of side rectilinear before the right posterolateral angles. Lateral seta at anterior third, basal one at posterolateral angle. Lateral channel narrow, basal margin rectilinear, wider than anterior margin. Basal foveae round and deep and punctate as entire base, laterally delimited by an evident laterobasal carina; anterior transverse impression shallow, median longitudinal impression extended to basal margin, deep in the basal 3/5.

Metaventral process unbordered.

Elytra (el/ew = 1.58) ovate, with relatively rounded humeri and apex less pointed than in *S. mayupinigi*. Elytral striae 1-5 evidently sulcate-punctate, 6 and 7 punctate, 7 shallow; all striae disappeared at about apical fourth to apex, except stria 1 which is extended to apex. Discal setigerous punctures two on interval 3, rather near stria 3. Parascutellar stria short, punctate, apical stria absent, apical setigerous puncture isolated.

Microsculpture absent from entire dorsal surface.

Male genitalia (Fig. 11). Peculiar shape of the phallosome, almost rectilinear with very short base. Apex elongate, with rather thick end. Basal sclerite of endophallus with some undulations on the margins.

Geographical distribution
Known from the type locality in Sichuan Province, southwestern China.

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REFERENCES


ADDRESS OF THE AUTHOR

LUCA TOLEDANO - Museo Civico di Storia Naturale, Lungadige Porta Vittoria 9, I-37129 Verona, Italy; e-mail: lucatole2@libero.it
Checklist of the Bembidiina of China (Coleoptera Carabidae)

LUCA TOLEDANO
(Museo Civico di Storia Naturale di Verona)

ABSTRACT

Presented here is a checklist of the Chinese Bembidiina that includes valid names for four genera and 216 species and subspecies. The names of the genera and subgenera are listed in systematic order, the names of species and subspecies are listed in alphabetical order, while the synonyms are listed in chronological order.

Key words: Coleoptera, Carabidae, Bembidiina, Asaphidion, Bembidion, Sinechostictus, Amerizius, Palaearctic region, China, checklist.

RIASSUNTO

Checklist dei Bembidiina di Cina (Coleoptera Carabidae). Viene qui proposta una checklist dei Bembidiina cinesi che comprende quattro generi validi e 216 specie e sottospecie. I nomi dei generi e dei sottogeneri sono elencati in ordine sistematico, i nomi delle specie e sottospecie sono elencati in ordine alfabetico, mentre i sinonimi sono elencati in ordine cronologico.

Parole chiave. Coleoptera, Carabidae, Bembidiina, Asaphidion, Bembidion, Sinechostictus, Amerizius, regione palaartica, Cina, checklist.

genus Asaphidion Gozis, 1886
  = Tachys Dejean, 1821
  = Pseudodelphrus Acloque, 1896
  = Asaphidion Jacobson, 1906
  = Bembidion Netolitzky, 1935
A. championi Andrews, 1924
  = Isotomus Andrews, 1935
A. cupreum Andrews, 1925
A. fragile Andrews, 1925
A. granulatum Andrews, 1925
A. semilucidum Motschulsky, 1862
  = subferrum Morawitz, 1862
A. trancaespicium Semenov, 1889

B. (Desarmatocillenus) Netolitzky, 1942
B. fochohense Lindroth, 1980

Odontium LeConte, 1848 sensu latissimo complex

B. (Odontium) LeConte, 1848
  = Ocys Gistel, 1848 nec Stephens, 1828
  = Cylindrobacronym Netolitzky, 1939
B. aeneipes Bates, 1883
B. gebieni Netolitzky, 1928
B. persimile Morawitz, 1862

B. (Bracteon) Bedel, 1879
  = Parabracteon Notman, 1929
  = Argyrobracteon Netolitzky, 1939
  = Chrysobracteon Netolitzky, 1939
  = Conicobracteon Netolitzky, 1939
  = Foveobracteon Netolitzky, 1939
  = Litobracteon Netolitzky, 1939
  = Stylobracteon Netolitzky, 1939
B. conicolle Motschulsky, 1844
  = Conicicolle Motschulsky, 1850
  = baikaloussurico Netolitzky, 1942
B. stenoderum ssp. mukdense Kirschennhofer, 1984
B. veloc Linneé, 1761
  = impressum Panzer, 1797
  = striatum Paykull, 1798 nec Fabricius, 1792, nec

Cillenus Samouelle, 1819 complex

B. (Chinocillenus) Netolitzky, 1942
B. sinicum Andrews, 1938
Duftschild, 1812 nec Jacquelin du Val, 1851
=lapponicum Thomson, 1859
=evanescens Dalla Torre, 1877
=palmnorum Dalla Torre, 1877
=guentheri Seidlitz, 1887
=semenianum Meier, 1899
=bimaculatum Uyttenboogaart, 1904
=nigrescens Kuhnt, 1913
=everstsi Csiki, 1928
=moestum Csiki, 1928

B. (Euryphyllus) Motschulsky, 1846
=Eudromus Kirby, 1837
=Platyphyllus Motschulsky, 1844
=Trachyphyllus Motschulsky, 1844
=Pogonidium Ganglbauer, 1892

B. pogonoides Bates, 1883
B. rufotibialum Fairmaire, 1888

B. (Metallina) Motschulsky, 1850
=B. mundatum Netolitzky, 1920

B. (Neja) Motschulsky, 1864
=gnanseuse Jedlička, 1965

B. (Chlorodinium) Motschulsky, 1864
=B. albim ssp. protaluminum Netolitzky, 1933

B. (Pekininium) Csiki, 1901 subgenus incertae sedis
B. chinense Csiki, 1901 species inquirenda

B. (Hugulla) Müller-Motzfeld, 1988
B. ciki Jedlička, 1982

B. (Andrewesia) Netolitzky, 1931
B. incisum Andrews, 1921

complex?

B. (Princidium) Motschulsky, 1864
=B. coreanum Jedlička, 1946
=davidi Schuler, 1955

Bembidion Latreille, 1802 complex

B. (Notaphus) Stephens, 1828
=Austronotaphus Jeannel, 1962
=Notaphidius Jeannel, 1962
B. obliquum Sturm, 1825
=ustulatum Gyllenhal, 1810 nec Linné, 1761
=fasciatum Motschulsky, 1844
=immaculatum J. Sahlberg, 1874
=freymushi Wagner, 1915
B. semipunctatum ssp. elegantulum Sahlberg, 1844
B. variatum Olivier, 1795
=ustulatum Linné, 1761 nec Gyllenhal, 1810, nec Duftschild, 1812
=flammatum Duftschild, 1812 nec Clairville 1806
=majum Gyllenhal, 1827
=bifasciatum Stephens, 1828
=nebulosum Stephens, 1828 nec Rossi, 1792
=teonebrosum Motschulsky, 1844
=infuscatus Schilling, 1847 nec Dejean, 1831
=marginicolle Wollaston, 1864
=apicale Dalla Torre, 1877 nec Ménétrier, 1832 not available
=basale Dalla Torre, 1877 nec Ménétrier, 1832 not available
=bifasciatum Dalla Torre, 1877 not available
=heptapotamicum Tschitschérine, 1895
=amoensium Péringuey, 1896
=rumelicum Apfelbeck, 1902
=mendacissimum J. Sahlberg, 1912-13
=nicnocyaneum Neresheimer & Wagner, 1916
=fulgifer Netolitzky, 1929
=dyrrhachii De Monte, 1947

B. (Notaphocampa) Netolitzky, 1914
=Notaphominus Netolitzky, 1931
B. niloticum ssp. batesi Purzycki, 1875
B. foveolatum Dejean, 1831
=sobrinum Boheman, 1848
=opulentum Nieter, 1858
=europes H. W. Bates, 1886
=niloticum Alluaud, 1933 nec Dejean, 1831

B. (Microsinica) Toledano, 1998
B. barkamense Toledano, 1998
B. daxuense Toledano, 1998
B. fachenii Toledano, 1998
B. herberfranzii Toledano, 1998
B. janii Toledano, 1998
B. luhrquoise Toledano, 1998
B. qinghaicum Toledano, 1998
B. rebecca Toledano, 1998
B. schillhammeri Toledano, 1998
B. schuelkei Toledano, 2000
B. turnai Toledano, 1998
B. wraeceanum Toledano, 1998
B. (Pseudosinocya) Toledano, 2005
B. shoedli Toledano, 2005

B. (Josefinia) Toledano, 2000
B. belousovii Toledano, 2000
B. luisae Toledano, 2000
B. pieroi Toledano, 2000
B. shugela Toledano, 2000
B. taguense Toledano, 2000

B. (Bembidion) Latreille, 1802
= Tachys Schönher, 1806 nec Dejean, 1821
= Bembidium Gyllenhal, 1810
= Lophia Dejean, 1821
= Bembecidium Agassiz, 1847
= Taractus Gistel, 1856
= Bembecidium Gemminger & Harold, 1868

B. quadriramusculatum ssp. quadriramusculatum Linné, 1761
= quadrigrattatum Fabricius, 1775 nec Olivier, 1795; nec Pontoppidan, 1763
= subglobosum Rossi, 1792
= pulchellum Panzer, 1797
= quadrigrattatum Serville, 1821
= coarctatum C. R. Sahlberg, 1834
= formosum C. R. Sahlberg, 1834
= sibiricum Motschulsky, 1850
= arragonsis H. Wagner 1926
= roubaui Kult, 1944 not available
B. quadriramusculatum ssp. mandli Netolitzky, 1932
B. quadriramusculatum ssp. quadriramusculatum Serville, 1821
= quadrigrattatum Olivier, 1795 nec Fabricius, 1775
= antiguorum Crotch, 1866
= olivieri Crotch, 1866
= albomaculatum Sahlberg, 1900
= conjunctum Jedlička, 1956 not available
B. sciakyi Toledano, 1999
B. sciakyi ssp. luguneae Toledano, 1999
B. sciakyi ssp. rinaldi Toledano, 1999

B. (Emphane) Motschulsky, 1850
= Omala Motschulsky, 1844
B. articulatoideis Jedlička, 1932
B. bulgani Jedlička, 1968
B. gobiensi Jedlička, 1964
B. tenellum ssp. pseudoplaga Netolitzky, 1943

B. (Semicampus) Netolitzky, 1910
B. mandarin Netolitzky, 1939
B. (Diplocampus) Bedel, 1896

B. fumigatum Duftschmid, 1812
= stictum Stephens, 1828
= dejani Putzeys, 1846
= terminale Motschulsky, 1850
= terminans Gemminger & Harold, 1868
= variolosum Dalla Torre, 1877
B. transparentis ssp. prostratum Motschulsky, 1844

B. (Trepane) Motschulsky, 1864
B. articulaturn Panzer, 1791

B. (Philochromes) Netolitzky, 1942
B. brancausi Toledano, 2000
B. daliangii Toledano, 2000
B. exquisitus Andrews, 1923
B. goetzii Jedlička, 1965c (uncertain attribution to Philochromes)
B. hansii Jedlička, 1932
B. leptaleum Andrews, 1922
B. perditum Netolitzky, 1920
= tienmuhshanense Kirschenhofer, 1984

Plataphus complex

B. (Plataphus) Motschulsky, 1864
= Micromelomalus Casey, 1918
= Trachelonephra Casey, 1918
B. gebrleri ssp. persusum Netolitzky, 1938
B. bebeicum Toledano, 2007
B. janatai Toledano, 2007
B. janatae yamnense Toledano, 2007
B. nerii Toledano, 2007
B. pietschenai Toledano, 2007
B. rebeccanum Toledano, 2007
B. rebli Toledano, 2007

B. (Plataphodes) Ganglbauer, 1892
B. elatum Andrews, 1924
B. farkaci Toledano & Sciaky, 1998
B. fellmanni Mannerheim, 1823

B. (Blepharoplataphus) Netolitzky, 1920
B. davaai Jedlička, 1968
B. huyrovskyi Jedlička, 1932

B. (Trichoplataphus) Netolitzky, 1914
= Triporus Andrews, 1921
B. hysteron Netolitzky, 1943
B. infans Andrews, 1930
B. kara Andrews, 1921
B. lissunnotoides Kirschenhofer, 1989
B. proteron Netolitzky, 1920
B. tambilra Andrewes, 1923

B. (Aureoplataphus) Netolitzky, 1942
B. jaechi Toledano, 2000

B. (Bembidromus) Toledano, 2000
B. panda Toledano, 2000

B. (Hirmocelatum) Netolitzky, 1943
B. hirmocelatum Chaudoir, 1850
= Punctatostriatum Motschulsky, 1844 nec Say, 1823
= Parvicolle J. Sahlgberg, 1880

B. (Jedlickion) Toledano, 2007
B. speciense Jedlička, 1932

B. (Bembidionetolitzkya) Strand, 1929
= Daniela Netolitzky, 1910
= Tibetoplataphus Schmidt, 2003
B. bulirschianum Toledano & Schmidt, 2007
B. cavazzutii Toledano & Schmidt, 2007
B. cookeri Toledano & Schmidt, 2007
B. cymindulum Andrewes, 1930
B. degense Toledano & Schmidt, 2007
B. golam Toledano & Schmidt, 2007
B. hajeki Toledano & Schmidt, 2007
B. hamanense Jedlička, 1933
B. hetszeli Toledano & Schmidt, 2007
B. jaroslavi Toledano & Schmidt, 2007
B. jintangi Toledano & Schmidt, 2007
B. liangi Toledano & Schmidt, 2007
B. livens Andrewes, 1930
B. longribe Toledano & Schmidt, 2007
B. mibyskai Toledano & Schmidt, 2007
B. nivicola Andrewes, 1923
B. pavesii Toledano & Schmidt, 2007
B. persephone nangenense Toledano & Schmidt, 2007
B. piceocyaneum Solsky, 1874
B. pluto pluto Andrewes, 1924
B. pluto hingstoni Andrewes, 1930
B. pluto hartmanni Schmidt, 2003
B. rilong Toledano & Schmidt, 2007
B. ruffoi Toledano & Schmidt, 2007
B. smetanai Toledano & Schmidt, 2007
B. toledano Toledano, 2004
B. toledanoi rauwense Toledano & Schmidt, 2007
B. toledanoi sertarens Toledano & Schmidt, 2007
B. toledanoi tobanum Toledano & Schmidt, 2007
B. toledanoi zhongdianicum Toledano & Schmidt, 2007
B. wrzecionkoi Toledano & Schmidt, 2007

Ocydromus sensu lato complex
B. (Ocydromus) Clairville, 1806 sensu Kryzhanovskij et al. 1995

group B. tetracolum Say, 1823
subgenus Peryphus Stephens, 1828 auct.
B. abbreviatum sp. uvidum Andrewes, 1924
= chiral Andrewes, 1935
B. andrewesi Jedlička, 1932
B. captivorum Netolitzky, 1943
B. inidiosum Solsky, 1874
B. morawitzi Csiki, 1928
= cognatum Morawitz, 1862 nec Dejean, 1831
= consentaneum Gemminger & Harold, 1868 nec
LeConte, 1852
B. obscurellum sp. thibeticum Patti, 1957
B. olemartini Kirschenhofer, 1984
B. poppis spp. eugenios Jedlička, 1933
B. poppis spp. pohrai Kirschenhofer, 1984
B. tayyuense Kirschenhofer, 1984

group B. petrosus Gyllenhal, 1827
subgenus Peryphus Dejean, 1821 auct.
B. petrosus Gyllenhal, 1827
= lucidum LeConte, 1848 nec Faldermann, 1835
= substrictum LeConte, 1848
= subinflatum Motschulsky, 1859
= wagneri Tschitscherine, 1893
= siekei Sparre-Schneider, 1910
= castalium Casey, 1918
= lepuculum Casey, 1918
= exiguceps Casey, 1924
= rubidum Andrewes, 1924
= wenatchee Hatch, 1950
= dolorosum Lindroth, 1962 nec Motschulsky, 1850

group B. irregularus Netolitzky, 1934
B. irregularus Netolitzky, 1934

group B. lunatum Dufschmid, 1812
subgenus Asioeryphus Vysoky, 1986 auct.
subgenus Chinoperyphus Vysoky, 1986
B. alestriatum Netolitzky, 1934
= bajani Jedlička, 1966
B. alestriatum sp. semiferrugineum Kirschenhofer, 1984
B. collutum Bates, 1873
B. exornatum Andrewes, 1930
B. infuscatum Dejean, 1831
= transbaicalicum Motschulsky, 1844
= postae Csiki, 1901
B. obenbergeri Lutschnik, 1928
B. oculum Jedlička, 1933
B. pamiricola sp. kunlunshanicum Toledano, 2007
B. pseudovalle Toledano, 2007
B. semilunium sp. serorum Netolitzky, 1934
B. wolfgangi Toledano, 2007

group B. lenae Csiki, 1928
B. chloroecus Bates, 1873
B. kucerai Toledano, 2007
B. nonaginta Toledano, 2007
B. peleum Jedlička, 1933
=nanpingense Kirschchenhofer, 1984
B. schoenmanni Toledano, 2000
B. sterbai Jedlička, 1965
B. wutaishanense Kirschchenhofer, 1984

group B. phaedrum Andrewes, 1923
B. phaedrum Andrewes, 1923
=parkyneri Jedlička, 1932
B. polites Andrewes, 1935

group B. decorum Zenker (1801)
subgenus Ocydromus Clairville, 1806 s.str. auct.
=Protoperyphus Alluaud, 1926
=Synchoperyphus, Netolitzky, 1942
=Perigonium De Monte, 1947
B. merum Jedlička, 1933
=kinefjansum Jedlička, 1958

group B. saxatile Gyllenhal, 1827
subgenus Ocydromus Clairville, 1806 s.str. auct.
=Protoperyphus Alluaud, 1926
=Synchoperyphus, Netolitzky, 1942
=Perigonium De Monte, 1947
B. saxatile ssp. fuscocomutatum Motschulsky, 1844
B. saxatile ssp. vaillanti Schuler, 1955

group B. modestum Fabricius, 1801
subgenus Ocydromus Clairville, 1806 s.str. auct.
=Protoperyphus Alluaud, 1926
=Synchoperyphus, Netolitzky, 1942
=Perigonium De Monte, 1947
B. scopulinum Kirby, 1837
=obliguelunatum Motschulsky, 1844
=thermarum Motschulsky, 1844
=gelidum LeConte, 1848
=bellulum Casey, 1918
=mongolicum Jedlička, 1967
B. yunnanum yunnanum Andrewes, 1923
=niedli Jedlička, 1965

B. yunnanum spectans Jedlička, 1933

B. parepum Jedlička, 1933

B. straussi Netolitzky, 1910
=straussi ssp. gurwani Jedlička, 1968

B. baehr Toledano, 2000
B. baehr Toledano, 2000
B. echarouxi Toledano, 2000
B. maddisoni Toledano, 2000

group B. marginipenne Solsky, 1874
subgenus Octuranus Müller-Motzfeld, 1986 auct.
B. babaulti Andrewes, 1924
B. kareli Toledano, 2007

B. (Ocydromus) sensu lato incertae sedis
B. klapperichi Jedlička, 1953
B. sjolanderi Jedlička, 1965

B. (Euperyphus) Jeanel, 1941
B. giganteum reinigi Netolitzky, 1933

subgenus Ocydromus gr. terminale Heer, 1841 auct.
B. muellermonzfeldi Toledano, 2000
B. ovalipes Solsky, 1874
B. pseudoconsummatum Kirschchenhofer, 1984
B. roberti Toledano, 2000
B. zierits Toledano, 2007

B. (Testediolum) Ganglbauer, 1892
=Peryphidium Tschitscherine, 1895

B. gogates Andrewes, 1924
=gogates ab. chinensis Jedlička, 1953
B. (Pamirium) Nerolitzky, 1920
B. himalayanum Andrewes, 1924
B. roborovskii Mikhailov, 1988

Genus Sinechostictus Motschulsky, 1864
Bembidion subgenus Sinechostictus Motschulsky, 1864 auct.
Synechostictus Bedel, 1879

S. (Pseudolimnaeum) (Kraatz, 1888)
Bembidion subgenus Pseudolimnaeum Kraatz, 1888 auct.
Bembidion subgenus Sinechostictus Motschulsky, 1864 (Marggi et al. 2003)
Genus Pseudolimnaeum Kraatz, 1888 (Vigna Taglianti 1993)

S. alesmetana Toledano, 2007
S. cameroni ssp. andreaspuetzi Toledano, 2007
S. emeishanicus Toledano, 2007
S. exaratus ssp. aeneviridimicans (Nerolitzky, 1938)
S. mwupingi Toledano, 2007
S. wernermarggii Toledano, 2007

Genus Amerizus Chaudoir, 1868

A. (Tiruka) (Andrewes, 1935)
A. barkamensis Deuve, 1998
A. barkamensis ssp. minisingensis Deuve, 2004
A. barkamensis ssp. zhangleensis Deuve, 2002
A. baxiensis Deuve, 1998
A. davidae Sciaky & Toledano, 2007
A. farkaci Sciaky & Toledano, 2007
A. gologensis Deuve, 2004
A. gongga Deuve, 1998
A. hubetensis Deuve, 2002
A. lama Sciaky & Toledano, 2007
A. maquensis Deuve, 2004
A. markamensis Deuve, 1998
A. mourzinei Deuve, 1998
A. panda Sciaky & Toledano, 2007
A. perraulti Deuve, 1998
A. pugeti Sciaky & Toledano, 2007
A. quinmeci Deuve, 1998
A. schmidtii Sciaky & Toledano, 2007
A. shatanicus Deuve, 2004
A. songpanensis Deuve, 1998
A. tsani Deuve, 2004
A. turnai Deuve, 1998
A. wulongensis Deuve, 2002
A. urzecionkoi Deuve, 1998

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