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Revision of *Pterostichus* BONELLI, 1810 subg. *Pseudohaptoderus* TSCHITSCHERINE, 1888 and description of new taxa (Coleoptera: Carabidae, Pterostichinae)

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Abstract

The subgenus TSCHITSCHERINE, 1888 of the genus *Pterostichus* BONELLI is redescribed and revised. Two new taxa (*P. aemiliae* sp.n. and *P. semenovi bicoloripalpis* ssp.n., both from Sichuan) are described and the male genitalia of all the species are illustrated. The relationships of this subgenus are discussed.

Key words: Coleoptera, Carabidae, *Pterostichus*, *Pseudohaptoderus*, new species, new subspecies, China, faunistics.

Introduction

Continuing the studies on *Pterostichus* BONELLI, 1810 from China, we found ourselves confronted by a large number of small specimens collected in many localities of several regions. These specimens seemed to fit with the description of the subgenus *Pseudohaptoderus* TSCHITSCHERINE, 1888, that contained only two species, *P. semenovi* TSCHITSCHERINE, 1888 and *P. jugivagus* TSCHITSCHERINE, 1898, both of which were known only from the type series. A thorough study of all the available material (about 250 specimens) enabled us to redescribe the subgenus, and the two species known previously, to describe two new taxa, and to discuss the distribution of all the taxa in comparison with the other known genera and subgenera of Chinese Pterostichinae.

Material and Methods

Material. This work is based upon study of almost 300 specimens of *Pterostichus* subg. *Pseudohaptoderus* and some hundreds of specimens of other species belonging to almost all the Chinese subgenera used for comparison. Study material is preserved in the following institutions or private collections, each of which is coded by an acronym used in this publication.

CF Coll. Facchini, Piacenza
CS Coll. Sciaky, Milano
MHNP Muséum national d'Histoire naturelle, Paris
MSNM Museo Civico di Storia Naturale, Milano
NMP Národní Muzeum, Praha
ZISP Zoological Institute, Saint Petersburg

Methods. Descriptions. Since the species are extremely similar to each other, we have decided not to give complete descriptions of all of them, but to give a complete description only for the new species. The main distinguishing characters are given in the key.

Measurements. The measurements of all species have been made with an ocular micrometer in a stereoscopic binocular microscope at 40 x. The total length was measured from apex of mandibles to apex of elytra. Measurements of body parts and abbreviations used for them in the text are:

El length of elytra from base of scutellum to apex
Ew maximum width of elytra
Pl length of pronotum along median line
Pw maximum width of pronotum

Indices used in this publication are the following: Pw/Pl, El/Pl, Ew/Pw, El/Ew. These indices have been calculated upon samples of 20 specimens (when available) of each taxon. Under the taxonomic treatment the average value for each taxon is reported.

Borrowed holotypes were returned to the lending institutions and specialists.

Dissections were made using standard techniques; genitalia and small parts were preserved glued on paper labels or included in Euparal on an acetate label fixed on the same pin with the specimen.

Illustrations. Line drawings of the aedeagi were prepared redrawing photographs taken through a Leitz Laborlux biological microscope at 58 x.

Diagnostic characters. Since the external characters in this subgenus are very scarcely reliable, the only diagnostic characters are usually those of the male genital apparatus; the shape and length of the median lobe of the aedeagus and of the right paramere are most important. The criteria for deciding that some of the material available represented taxa not known previously were based upon these characters, but the extent of the differences and the observation of the known area of all the taxa helped us decide whether we were in front of an undescribed species or subspecies.

Pseudohaptoderus TSCHITSCHERINE, 1888

Type species: *Pterostichus semenovi* TSCHITSCHERINE, 1888, by monotypy.

Description: color black or dark brown. Head convex, smooth, with frontal sulci rather long and superficial, divergent posteriorly. Eyes large and convex. Last segment of both maxillary and labial palpi narrow. Antennae with antennomeres 4-11 pubescent.

Pronotum slightly convex, markedly constricted and lateral margins slightly sinuate basad; median sulcus distinct and deep. Only one basal impression each side, rather indistinctly delimited, short and smooth or sparsely punctate in few specimens.

Antennae and legs rather short and robust. Protarsomeres 1-3 in male markedly dilated and transverse. Onychium ventrally with several pairs of thin setae.

Elytra rather short, oval, with small humeral tooth. Striae punctate, internal ones more distinctly impressed, progressively shallower laterally; only stria 1 extended to apex, striae 2-8 obsolete subapically. Scutellary stria confluent with stria 1. Interval three with two setigerous punctures adjoining stria 2, one just before middle, the other in posterior third. Umbilicate series markedly reduced, in most specimens of 3+6 setigerous punctures, with a wide gap between humeral and apical series. Preapical internal plica small but evident, determining a visible "crossing" of the epipleuron. Metepisternum very short, anterior margin almost as long as external margin. Hind

wings reduced to short stubs. Abdominal sterna smooth; sternum VII of male without secondary sexual characters. Microsculpture with microlines shallow in male, evidently deeper and more distinct in female, giving a less shiny appearance.

Aedeagus large, with prebasal portion relatively short and narrow and with apical portion quite long, juncture in form of an obtuse angle; ostium very large and placed on the left as in typical Pterostichini; right paramere short to medium-sized and variously bent at middle, according to the species. Internal sac with an s-shaped sclerite very slightly sclerotized and very difficult to distinguish.

Species included. This subgenus includes two previously described species (*P. semenovi* and *P. jugivagus*) and one species described below (*P. aemiliae*).

Systematic position. The systematic position of *Pseudohaptoderus* is, as often happens with the Chinese fauna, not particularly easy to decide, although this group seems less isolated than most Chinese subgenera. The taxonomic characters of this subgenus, both external and aedeagal, seem to agree rather well with those of the Holarctic subgenus *Cryobius* CHAUDOIR, 1838, which is widely distributed in all circumpolar regions, but with some species ranging westward to the mountains of Central Europe.

The non-genital characters that in combination distinguish *Pseudohaptoderus* from *Cryobius* are: base of pronotum with a single impression, impunctate in most specimens, onychium ventrally with several pairs of setae, legs and antennae shorter and stouter, external striae obsolete. These are certainly not characters of a high phylogenetic value, but allow an easy distinction and, at least provisionally, persuade us to keep these two groups separate, as subgenera. Among the genital characters we can mention the very scarce sclerotization of the internal sclerites of the internal sac, while in *Cryobius* (and *Haptoderus*) there are two or three sclerites (see BALL 1966)

From the other Chinese subgenera of *Pterostichus* containing species of small size, *Pseudohaptoderus* can be distinguished as follows: from *Morphohaptoderus* TSCHITSCHERINE, 1898 and *Tschitscherinea* BERG, 1898 by the convex body, the shallow external striae and the pronotum distinctly constricted before base; from *Neohaptoderus* TSCHITSCHERINE, 1898 by the shallow external striae, the strong elytral microsculpture of the female and the black integument; from *Sinosteropus* SCIAKY, 1994 by the distinct basal angles of pronotum and the black integument. The key provided by JEDLIČKA (1962) can be of some use for distinction of this subgenus from the other subgenera in the Far East.

Key to the Chinese species and subspecies of subgenus *Pseudohaptoderus*

1 Right paramere long and slender, not enlarged but markedly curved before apex (Figs. 3, 5, 7, 9) 2

- Right paramere short and stout, evidently enlarged before apex (Figs. 11, 13). Body length 7.4 - 9.8 mm. W and NW Sichuan, S Gansu, NW Yunnan, E Tibet ..... *jugivagus* TSCHITSCHERINE

2 Right paramere very long and bent at right angle (Figs. 3, 5, 7). Median lobe of aedeagus bent at right or acute angle (Figs. 2, 4, 6) 3

- Right paramere much shorter than in the preceding case and bent at obtuse angle (Fig. 9). Median lobe of aedeagus bent at obtuse angle (Fig. 8). Body size 7.2 - 8.2 mm. Sichuan..... ..... *aemiliae* sp.n.

3 Median lobe of aedeagus rectilinear at apex (Fig. 2). Last article of all palpi uniformly light brown and size smaller (7.3 - 8.3 mm). Tibet, Qinghai.....*semenovi* ssp. *semenovi* TSCHITSCHERINE

- Median lobe of aedeagus evidently curved downward at apex (Figs. 4, 6). Last article of all palpi evidently bicolored (proximal half black, distal half light brown) or size evidently larger (8.5 - 9.0 mm). N and W Sichuan ..... *semenovi* ssp. *bicoloripalpis* ssp.n.

Pterostichus (*Pseudohaptoderus*) *semenovi* TSCHITSCHERINE, 1888

Pterostichus (*Pseudohaptoderus*) *Semenovi* TSCHITSCHERINE, 1888: 5
Feronia (*Pseudohaptoderus*) *semenowi* TSCHITSCHERINE, 1898: 188
Pterostichus (*Pseudohaptoderus*) *semenowi* JEDLIČKA, 1962: 231

Type-locality: "Chine, Plateau d'Amdo".

The original description was based on 60 specimens collected in several localities of south-western China by the expedition of Przewalski. The very few subsequent mentions of this species (TSCHITSCHERINE 1898, JEDLIČKA 1962) only refer to the original data, and it seems that until very recently additional material has not been collected. Among the pterostichines collected in recent years we have examined many specimens that allowed us to better define its geographical distribution and to discover that the population samples of this species can be grouped as two subspecies: the nominotypical one, widely distributed in Tibet and Qinghai and a new subspecies known from few localities in W and N Sichuan.

Pterostichus (*Pseudohaptoderus*) *semenovi* ssp. *semenovi* TSCHITSCHERINE, 1888

Type material. Of this subspecies we have examined several syntypes in MHNP, MSNM, NMP.

Diagnosis. The most important characters permitting its distinction from the other taxa are: shape of the right paramere (very long and narrow, Fig. 3) and of the aedeagal apex (almost rectilinear, Fig. 2). The paramere is almost identical in *P. semenovi* ssp. *bicoloripalpis*, while it is much shorter in all the other species. On the other hand, the aedeagal apex is not so different in the other species, but it is markedly bent ventrad in the ssp. *bicoloripalpis*. Moreover, the maxillary and labial palpi are constantly reddish in all the known populations of *P. semenovi* ssp. *semenovi*. The main morphometric data are: Pw/Pl = 1.27, El/Pl = 2.21, Ew/Pw = 1.23, El/Ew = 1.41.

Geographical distribution. This subspecies occupies a wide portion of the Tibetan plateau, between 4000 and 5200 m, extending from central Tibet to S Qinghai, almost until the Qinghai Lake (= Koku-Nor). It is mainly distributed in the hydrographic right bank of the Mekong river, but we know four localities in Qinghai in the orographic left bank of it, two between the Mekong and the Yangtze Jiang and two in the orographic left bank of the Yangtze Jiang. In Tibet this species is still unknown in the area between the Mekong and the Yangtze Jiang, where *P. jugivagus* is known from several localities. The other subspecies is distributed only in Sichuan in the hydrographic left bank of the Yangtze Jiang river.

Material examined (128 specimens):

QINGHAI: road Yushu - Toramarkog, pass 25 km SW Yushu, 4500 m, alpine region: 8 exs.; road Toramarkog - Nangqen, pass 20 km N Nangqen, 4500 m: 5 exs.; 10 km E Toramarkog, pass 4200 m, 32°53'N 96°41'E, alpine meadow: 5 exs.; Chalaxung, 4000 m: 2 exs.; Anyemaqen Shan, Huashixia, 4600 m: 2 exs.; Zhubgyugoin, 4200 m: 5 exs.; Qingshuie, 4200 m: 3 exs.; Huashixia, 4200 m: 4 exs.; Chalaxung, 4000 m: 1 ex.; from Little Maduo to the south source of the Yellow River, 4000 - 4600 m: 1 ex.; pass 30 km N Nangqen, 4200 m: 3 exs.; Amnemaqen Shan, Huashixia, 4400 m: 18 exs.

TIBET: Shela pass: 22 exs.; Anjula pass: 5 exs.; Djosola pass env., 4700 m: 1 ex.; Lhasa env., Tsurpu: 1 ex.; Tsurpu: 6 exs.; Tuntala Shan pass, road Markam - Zogang, 20 km NE Zogang, 29°43'N 98°02'E, alpine meadow, 5000 m: 2 exs.; road Soila - Gyitang, pass 4500 m, 30°40'N 97°14'E, alpine meadow: 1 ex.; Chegarla, 20 km E of Rioche, 4800 m: 1 ex.; Mila, 15 km S of Bangda, 4700 m: 7 exs.; Agenla, 45 km W of Bachen, 5000 m: 7 exs.; 75 km E of Nakchu, 5000 m: 10 exs.; Tangula Shan, Tangula pass, 5200 m: 5 exs.; Droma, Nantso, 5000 m: 2 exs.; Dongola Pass, 5000 m: 7 exs.

Pterostichus (*Pseudohaptoderus*) *semenovi bicoloripalpis* ssp.n.

Holotypus: ♂ China, N Sichuan, Sangarpar, VII.1996 (CF). Paratypes: same data as holotype: 10 ♂♂♀♀; China, N Sichuan, pass Zhangla - Nanping, 22.VI.1996: 2 ♂♀ (CF, CS); China, N Sichuan, Zhangla, VII.1996: 2 ♂♀ (CF, CS); China, NW Sichuan, Maniganggo env., Chola Shan reg., Chola pass, 18.VII.1996: 1 ♂ (CS); China, W Sichuan, road Litang - Batang, pass 70 km WNW Litang, alpine region, 4675 m, 22.VII.1994: 2 ♂♂ (CF, CS).

Diagnosis. Aedeagal apex bent ventrad rather than straight and maxillary and labial palpi clearly bicolored, with black proximal half and reddish distal half.

Although the genital differences are quite evident, we have been doubtful whether it was more appropriate to describe it as a new species or subspecies, but the similarity in shape of the right paramere with *P. semenovi* and the fact that the two are never sympatric prompted that it was better to describe it as a subspecies.

Geographical distribution. The easternmost populations of this subspecies (N and W Sichuan) show some constant features, that permit recognition of this new subspecies, which is apparently less widely distributed than the nominotypical subspecies. In two stations it is sympatric with *P. jugivagus* and not far from the area known for *P. aemiliae*, while in the two easternmost stations it is the only *Pseudohaptoderus* known.

Pterostichus (*Pseudohaptoderus*) *aemiliae* sp.n.

Holotype: ♂ China, SW Sichuan, road Daocheng - Gaqag, pass 15 km S Daocheng (60 km NNE Gaqag), 3500 m, 18.VII.1994 (CF). Paratypes: same data as holotype: 11 ♂♂♀♀ (CF, CS); China, SW Sichuan, road Litang-Sumdo, pass 50 km SSW Litang, 4600 m, 5.VII.1994: 5 ♂♂♀♀ (CF, CS); China, SW Sichuan, road Litang - Yajiang, pass 20 km W Yajiang, alpine region and *Picea* forest, 3200 - 3500 m, 24.VII.1994: 2 ♂♂ (CF, CS).

Derivatio nominis. We are pleased to dedicate this species to Emilia Facchini, wife of the second author, as a modest expression of appreciation for her continuous help and encouragement.

Diagnosis. A *Pterostichus* (*Pseudohaptoderus*) of 7.2 - 8.2 mm, extremely similar to the two known species of the subgenus, but different in the shape of the aedeagus and the left paramere, which is rather short and dilated in preapical portion.

Description - Total length 7.2 - 8.2 mm; body black; mouth parts, antennae and legs dark reddish-brown.

Head large, smooth, much narrower than pronotum; eyes large and convex, occupying almost all of the ocular convexity. Frontal sulci rather long, superficial and markedly diverging behind. Tempora very short and oblique, collar constriction indistinct.

Pronotum large, lateral margins rounded, markedly constricted in basal half, almost equally constricted at frontal margin and at base, widest almost in anterior third. Anterolateral seta almost in the anterior fourth, basilateral seta in the posterior angle. Anterior angles very slightly projected forward, obtuse, hind angles obtuse. Sides almost uniformly rounded until basal third, then slightly but evidently sinuate. Lateral groove each side narrow all along its length; base slightly arcuate. Only one basal impression each side, short, deep, almost rectilinear, only sparsely punctate. Pro-, meso- and metasternum rather densely punctate. Pw/Pl = 1.37, El/Pl = 2.52, Ew/Pw = 1.26.

Elytra rather wide (El/Ew = 1.58) and convex, markedly enlarged in middle; striae shallow and punctate; intervals flat. Humeri completely rounded, basal margin perpendicular to suture, forming an obtuse angle with the lateral one. Umbilicate series of 3+6 setigerous punctures, with a wide gap between the humeral and apical series. Interval 3 with two small pore-punctures in the middle of the interval or adjoining stria 2; anterior one usually slightly anteriad the middle,

posterior in posterior third or fourth. Abdomen almost smooth, sternum VII of male smooth, without apophysis or pits. Microsculpture with microlines more shallow in male than in female, latter with surface dull, or opaque.

Legs short and stout; onychium glabrous ventrally. Meso- and metatibiae markedly crenulate in males, smooth in females.

Genitalia. Aedeagus long, with ostium markedly on left side; in lateral view slightly swollen before apex. Apex short, in lateral view bent ventrad (Fig. 8). Left paramere short, almost rectilinear, pointed at tip, with simple apex (Fig. 9).

Affinities. This species is extremely closely related to both other species of the subgenus. From *P. semenovi* it is distinguished by the shorter and more markedly dilated right paramere and the median lobe of aedeagus more dilated in the preapical portion (in lateral view); from *P. jugivagus*, by the longer and narrower right paramere and the median lobe of aedeagus bent at obtuse (instead of acute) angle.

Geographical distribution. *Pterostichus aemiliae* is known only from three localities in western Sichuan; in two of these it is sympatric (and probably syntopic) with *P. jugivagus*. It also lives not so far from the known localities of *P. semenovi* ssp. *bicoloripalpis*, but the two distribution areas do not overlap (Fig. 14).

Pterostichus (*Pseudohaptoderus*) *jugivagus* (TSCHITSCHERINE, 1898)

Feronia (*Pseudohaptoderus*) *jugivaga* TSCHITSCHERINE, 1898: 189
Pterostichus (*Pseudohaptoderus*) *jugivagus* JEDLIČKA, 1862: 231

Type-locality: China, Sichuan, Tschan-da-din pass, between Ta-tsien-lu and Batang.

Type-material - We have examined the single type specimen of this species, in ZISP, ascertaining its perfect correspondence with our previous species concept. The body length of the holotype is 8.7 mm (TSCHITSCHERINE (1898) indicated as size "9.1/4" (= 9.25) mm, JEDLIČKA (1962) gave 9 mm).

Taxonomic notes. The populations from N Sichuan are similar to the few known from Gansu and Yunnan and have a body length that varies from 7.4 - 8.9 mm. Habitus as in Fig. 1. On the other hand, some populations from the area around Litang (W and SW Sichuan) are much larger in body size, measuring 8.8 - 9.8 mm, and have a shape that is on the average more slender. Initially we thought these samples could represent a distinct subspecies, but since: 1) there is a scarce but evident overlapping in the body size, 2) these populations are almost in the middle of the distribution area of the species, and 3) the aedeagus is extremely similar in all these populations, we decided to regard them as simple local variations without systematic value.

Geographical distribution. This species is known from four different administrative regions of China at altitudes between 2700 and 4800 m: Sichuan, Gansu, Tibet and Yunnan, but its distribution area is centered around the Sichuan Plain, extending only marginally beyond it. In Tibet it is distributed only in the small area between the Yangtze Jiang and the Mekong river, while on the hydrographic right bank of the Mekong it is replaced by *P. semenovi*.

Material examined (118 specimens):
SICHUAN: 30 km W Kangding: 2 exs.; Serxu env., 32°59'N 98°06'E, 3700 m, alpine meadow: 27 exs.; Chola Pass, 4600 m, Chola Shan, 31°56'N 98°53'E: 16 exs.; Maniganggo, Chola Shan, 4200 m: 6 exx; road Barong - Garzé, 30 km SW Garzé, 3500 m: 6 exs.; road Barong - Garzé, pass 25 km S Garzé, 4000 - 4500 m: 4 exs.; Ganzi (Garzé), Sulunzuguayshan mt. range, Mt. Zhuotala, 4800 m: 1 ex.; road Zogqen - Qagca, 60 km NW Zogqen, 4000 m: 1 ex.; pass 20 km S Qagca, 32° 30' N 98° 25' E, 4100 m, alpine meadow: 3 exs.; road Sertar - Darcang, 20 km SSE Darcang, 4000 m.: 1 ex.; road Litang - Batang, pass 70 km WNW Litang, 4675 m: 9 exs.; road Litang - Sumdo, pass 60 km SSW Litang, 4600 m, alpine region: 21 exs.; Litang env., 3000 m: 1 ex.; Litang env., 5000 m: 1 ex.

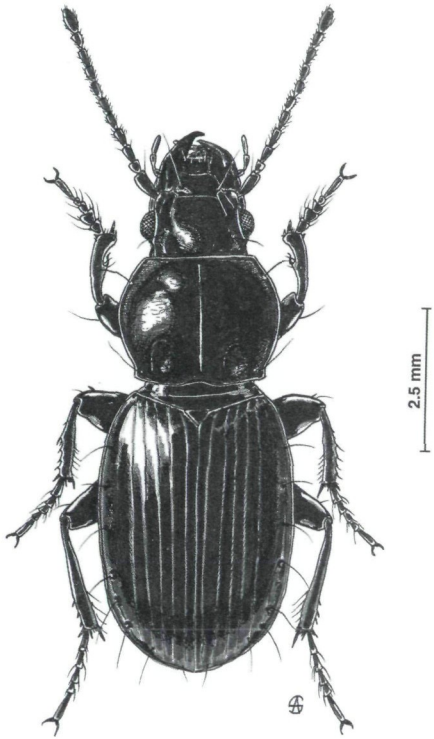


Fig. 1: *Pterostichus jugivagus* from pass 80 km W of Litang.

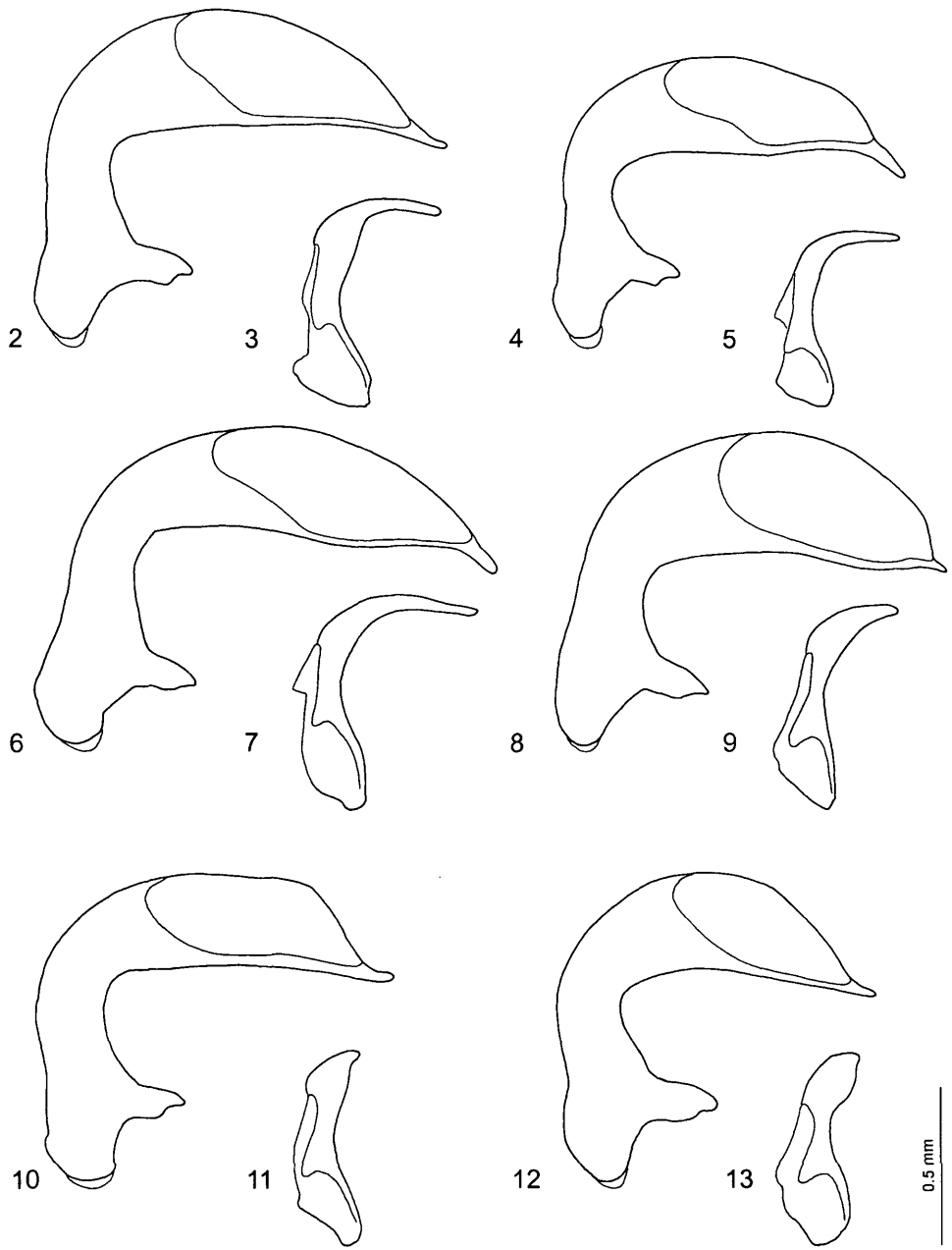
GANSU: Labrang, valley E of Ponggartang, 35°13'N 102°56'E, coniferous forest and alpine meadows, 2700 - 3300 m: 4 exs.

TIBET: Lao Shan pass, road Markam-Zogang, 10 km W Markam, 29°42'N 98°32'E, 4300 m: 4 exs.; road Jomda-Dege, pass 40 km NE Jomda, 31°38'N 98°28'E, alpine meadow, 4250 m: 1 ex.; road Toba - Jomda, pass 50 km E Jomda, 31°19'N 98°05'E, alpine meadow, 4200 m: 1 ex.; Tamala Shan pass, road Qamdo - Toba, 20 km NE Qamdo, 31°16'N 97°18'E, alpine meadow, 4800 m: 1 ex.

YUNNAN: Baimaxueshan pass, 4900 m: 2 exs.; Deqen, 3900 m: 5 exs.

Historical biogeography

This subgenus has a distribution area that is centered around the Chinese province of Sichuan, but it extends over five provinces: Sichuan, Gansu, Yunnan, Qinghai and Tibet. Unlike some other subgenera of *Pterostichus* known from China (e.g. *Morphohaptoderus*, see SCIAKY 1994), *Pseudohaptoderus* does not seem to show a marked tendency to speciate. On the other hand, two of the three known species range very widely. This is rather curious, but could be a further proof of the relationship of *Pseudohaptoderus* with the subgenus *Cryobius*, typically cold-adapted, some of whose numerous species have very extensive geographical ranges. The relationships of *Cryobius* have been studied by BALL (1966), and probably are with *Haptoderus* CHAUDOIR, 1838, *Pyreneorites* JEANNEL, 1937 and *Oreoplatysma* JACOBSON, 1907. Its geographical range extends over most of northern North America (BOUSQUET & LAROCHELLE 1993) in the Nearctic region, and most of northern Asia, westward to the Kola Peninsula (KRYZHANOVSKIJ et al. 1994) in the Palaearctic region. Moreover some relict species are in some mountain systems in Europe.



Figs. 2 - 13: Median lobe of aedeagus in lateral view and right paramere of: 2 - 3: *P. semenovi semenovi* from Tibet, Shela pass; 4 - 5: *P. semenovi bicoloripalpis* ssp.n. from Sichuan, Sanggarpar; 6 - 7: *P. semenovi bicoloripalpis* ssp.n. from Sichuan, pass 70 km WNW Litang; 8 - 9: *P. aemiliae* sp.n. from Sichuan, pass 35 km S Daocheng; 10 - 11: *P. jugivagus* from Sichuan, pass 70 km WNW Litang; 12 - 13: *P. jugivagus* from Yunnan, Baimaxueshan.

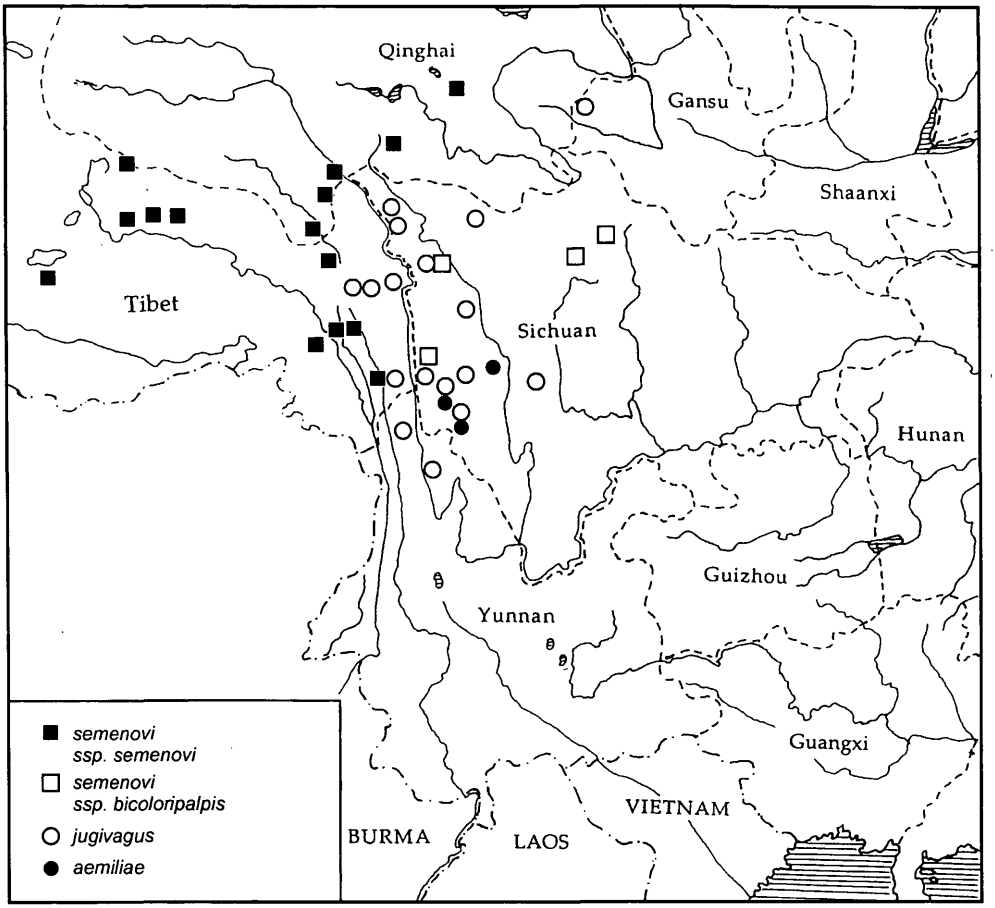


Fig. 14: Distribution map of the known taxa of *Pterostichus* subgen. *Pseudohaptoderus*

The occurrence of a group of species related to *Cryobius* on the Chinese mountains may be interpreted as follows, keeping in mind BALL's (1966) hypotheses on the evolution of *Cryobius*: during the late Pliocene, with the deterioration of climate that allowed the artic-alpine biota to become widespread in the north at low elevation, a stock of *Cryobius* emigrated far south from the main geographical range of the subgenus; then, as the climate became warmer and drier, the descendants of this group could survive only at high altitude, becoming extinct over a vast area extending from the mountains of southern China to Siberia, where now live the southernmost present-day *Cryobius*. Although we have no proofs yet, that *Pseudohaptoderus* represents the sister-group of *Cryobius*, it seems to present more apomorphic character states than *Cryobius*.

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Zusammenfassung

In dieser Arbeit wird die Untergattung *Pseudohaptoderus* TSCHITSCHERINE, 1888 der Gattung *Pterostichus* taxonomisch revidiert. Zwei neue Taxa (*P. aemiliae* sp.n. und *P. semenovi bicoloripalpis* ssp.n.) werden aus Sichuan beschrieben. Die männlichen Genitalien aller Arten sind abgebildet. Die verwandtschaftlichen Beziehungen dieser Untergattung werden diskutiert.

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