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## Twenty-nine new taxa of Pterostichinae from Shaanxi (Coleoptera, Carabidae)

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**Abstract:** 24 new species and 5 new subspecies of Carabidae Pterostichinae from the Chinese province of Shaanxi are here described: *Pterostichus* (*Sinosteropus*) *latitemporis* sp.n., *Pterostichus* (*Sinosteropus*) *latitemporis inflaticeps* ssp.n., *Pterostichus* (*Neohaptoderus*) *catei* sp.n., *Pterostichus* (*Neohaptoderus*) *catei rotundithorax* ssp.n., *Pterostichus* (*Neohaptoderus*) *kleinfeldianus* sp.n., *Pterostichus* (*Morphohaptoderus*) *ming* sp.n., *Pterostichus* (*Morphohaptoderus*) *confucius* sp.n., *Pterostichus* (*Morphohaptoderus*) *miroslavi* sp.n., *Pterostichus* (*Morphohaptoderus*) *lingshanus* sp.n., *Pterostichus* (*Morphohaptoderus*) *janatai* sp.n., *Pterostichus* (*Morphohaptoderus*) *geberti* sp.n., *Pterostichus* (*Morphohaptoderus*) *parvicollis* sp.n., *Pterostichus* (*Circinatus*) *schuelkei* sp.n., *Pterostichus* (*Sinoreophilus*) *scalptus* sp.n., *Pterostichus* (*Sinoreophilus*) *strigosus* sp.n., *Pterostichus* (subg.?) *gallopavo* sp.n., *Pterostichus* (subg.?) *clepsydra* sp.n., *Straneostichus* *puetzi* sp.n., *Straneostichus* *haeckeli* sp.n., *Straneostichus* *vignai violaceus* ssp.n., *Trigonognatha* *schuetzei* sp.n., *Trigonognatha* *kutsherae* sp.n., *Trigonognatha* *straneoi* sp.n., *Trigonognatha* *cordicollis* sp.n., *Trigonognatha* *latibasis* sp.n., *Aristochroa* *militaris* sp.n., *Stomis* *exilis* sp.n., *Stomis* *deuvei shaanxianus* ssp.n., *Aristochroodes* *reginae orientalis* ssp.n. A new combination is proposed: *Straneostichus rotundatus* (YU 1992) comb.n. (= *Aristochroa rotundata* YU 1992).

**Key words:** New species, new subspecies, new combination, *Pterostichus*, *Straneostichus*, *Trigonognatha*, *Aristochroa*, *Stomis*, *Aristochroodes*, Shaanxi, China.

### Material, Methods and Acknowledgements

This paper is based on specimens coming from the following museum and private collections:

NHMW .... Naturhistorisches Museum, Vienna (H. Schönmann, E. Kirschenhofer).

cBU ..... Coll. P. Bulirsch, Lovosice, Czech Republik

cJA ..... Coll. M. Janata, Prague, Czech Republik

cKU ..... Coll. E. Kučera, Sobeslav, Czech Republik

cPZ ..... Coll. A. Pütz, Eisenhüttenstadt, Germany

cTE ..... Coll. M. Tedeschi, Milano, Italia

cSC ..... Coll. R. Sciaky, Milano, Italia

cWR ..... Coll. D.W. Wrase, Berlin, Germany

Indexes used in this publication, are as follows:

Pw/Pl = maximum width of pronotum / length of pronotum along median line;

El/Pl = length of elytra from base of scutellum to apex / length of pronotum along median line;

Ew/Pw = maximum width of elytra / maximum width of pronotum;

El/Ew = length of elytra from base of scutellum to apex / maximum width of elytra.

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## Introduction

During a successful expedition in Shaanxi, one of us has collected many species of Pterostichinae, several of which new to science. In this paper we describe these species, together with others collected in the same region by various researchers, inserting them in the framework of what is already known about the Chinese fauna, which keeps providing us with new and many interesting data.

## Results

### *Pterostichus (Sinosteropus) latitemporis* sp.n.

**Diagnosis:** A *Pterostichus (Sinosteropus)* of small size (9.0-9.8 mm), very isolated within the subgenus by the small eyes, swollen tempora, short right paramere and very long and narrow aedeagus with ventrally angulose dilatation and with apex bent upwards.

**Type locality:** China, SW Shaanxi, Qinling mts., Houzhenzi env., 3300 m.

**Type material:** Holotypus ♂, VII.1996, leg. M. Häckel (cSC). 9 paratypes ♂ ♀ with same data as holotype (cSC, cWR). 2 paratypes ♂ ♂ from China, SW Shaanxi, Qinling mts., NW Houzhenzi, VI. 1997, leg. M. Häckel (cBU). 1 paratype ♂ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3300 m, VII.1996, leg. M. Häckel (cSC). 1 paratype ♀ with same data, but VI.1997 (cBU). 2 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Houzhenzi env., 2600 m, VII.1996, leg. M. Häckel (cSC, cWR). 4 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3100 m, VII.1996, leg. M. Häckel (cSC, cWR). 15 Paratypes ♂ ♀ from Shaanxi, Qinling mts., Houzhenzi, 2600 m, 7.VII.1996, leg. M. Janata (cJA, cSC).

**Derivatio nominis:** The specific epithet means „wide tempora“ (lat. *latus* and *tempus*, *temporis*) and alludes to the large size of the tempora of the species.

**Description:** Total length 9.0-9.8 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 25.

Head large, smooth, a little narrower than pronotum; eyes strongly reduced, occupying only the anterior portion of the ocular convexity. Last palpomere narrow. Frontal sulci short, parallel and deep; vertex and neck superficially but densely punctate. Tempora swollen and oblique, collar constriction rather deep but evident. Antennae pubescent from antennomere 4.

Pronotum large, rounded, strongly constricted in the basal half, wider at frontal margin than at base. Fore angles not projecting forward, obtuse, hind angles largely rounded. Lateral gutter narrow all along its development and punctate; base strongly concave. Basal impressions unique, short, deep, linear, densely punctate. Pro-, meso- and metasternum strongly and densely punctate.  $Pw/Pl = 1.13$ ,  $El/Pl = 2.10$ ,  $Ew/Pw = 1.15$ .

Elytra narrow ( $El/Ew = 1.62$ ) and convex, weakly enlarged in the middle; striae deep and strongly punctate; intervals flat. Interval 3 with two setigerous punctures in the apical half, adjoining stria 2, one just after the middle, the other near the apex. Shoulders rounded, basal margin perpendicular to suture, forming a curve with the lateral one. Umbilicate series composed by 6+8 setigerous punctures, with a wide gap between the humeral and apical series. Abdomen almost smooth, the last sternite of male smooth, without apophysis or pits.

Legs very short and stout; onychium with two pairs of thin setae. Meso- and metatibiae strongly crenulate in the males, smooth in the females.

Medianlobus long, with ostium strongly displaced to the left side; in the preapical portion it shows an angulate dilatation. Apex long, in lateral view bent upwards (Fig. 1a), in dorsal view weakly twisted to the left (Fig. 1b). Left paramere short, almost rectilinear, pointed at tip, with simple apex (Fig. 1c).

**Comparisons:** This species is the second of the subgenus *Sinosteropus* SCIAKY 1994 from Shaanxi, the first, *P. cathaicus* SCIAKY 1994 was described from Hua Shan. The two share the strong ocular reduction and the character of the aedeagal apex bent upward, but differ strongly in the slenderer body shape and the much narrower aedeagus of *P. latitemporis*.

**Geographical notes:** The subgenus is known only from Sichuan, Yunnan and Shaanxi with six described (including this one) and many more undescribed species. The two species from Shaanxi seem to form a small group quite isolated from the rest of the subgenus, opposite to what has been observed in other subgenera (e.g. *Morphohaptoderus*), where the species from Shaanxi are closely related to those from Sichuan (SCIAKY 1994a).

***Pterostichus (Sinosteropus) latitemporis inflaticeps* sp.n.**

**Diagnosis:** A *Pterostichus (Sinosteropus)* of small size (9.2-9.3 mm), very similar to *latitemporis* s. str., but with tempora even more strongly swollen and different medianlobus.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cWR) 3 paratypes ♂ ♀ with same data as holotype (cSC, cWR).

**Derivatio nominis:** The subspecific epithet means „inflated head“ and alludes to the shape of the head.

**Description:** Total length 9.2-9.3 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 26.

This subspecies is so similar to the nominate form that we think that a complete description is unnecessary. The only external difference is the shape of the tempora that are even more swollen than in *latitemporis* s. str., but the aedeagus is markedly different (Figs. 2a-c).

Medianlobus long, with ostium strongly displaced to the left side; in the preapical portion it shows an angulate dilatation. Apex long, in lateral view bent upwards (Fig. 2a), in dorsal view weakly twisted to the left (Fig. 2b). Left paramere short, almost rectilinear, pointed at tip, with simple apex (Fig. 2c).

**Comparisons:** This subspecies is very similar in external look to *latitemporis latitemporis*, but differs markedly from it in the shape of the aedeagal apex.

**Geographical notes:** This subspecies was collected on a mountain rather near that of *latitemporis*, but the aedeagal apex is very distinctive.

***Pterostichus (Neohaptoderus) catei* sp.n.**

**Diagnosis:** A *Pterostichus (Neohaptoderus)* of medium size (11.9-12.1 mm), stout and convex, with the pronotum strongly constricted at base and with basal angles almost completely rounded, the elytra wide but parallel-sided and the apex of aedeagus simple, weakly bent downward in lateral view (fig. 3a).

**Type locality:** China, Shaanxi, Qin Ling Shan, 110.06 E 34.27 N, Hua Shan Mt. N Valley, 1200-1400 m, 118 km E Xian.

**Type material:** Holotypus ♂, 18./20.VII.1995, leg. Wrase (cWR). 19 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 25 paratypes ♂ ♀ with the same data but sifted, leg. A. Pütz (cPZ, cSC, cWR).

**Derivatio nominis:** This species is very cordially dedicated to the specialist in Elateridae, our colleague and friend Dr. Peter C. Cate (Vienna), who is already willing to check our manuscripts in regard of linguistic aspects.

**Description:** Total length 11.1-12.1 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 36.

Head small, completely smooth, not very convex, much narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction completely obsolete. Antennae pubescent from antennomere 4.

Pronotum wide, strongly transverse, weakly constricted towards the base, which is larger than the anterior margin. Anterior angles strongly and acutely projecting forward; sides strongly curved towards base, basal angles almost completely rounded. Lateral gutter rather large, not explanate towards base, completely punctate. Two basal impressions almost completely smooth, the internal one long, well-defined, deep; the external one very short, almost punctiform, both isolated from basal margin. Prosternum almost smooth, meso- and metasternum strongly and densely punctate.  $Pw/Pl = 1.24$ ,  $El/Pl = 1.98$ ,  $Ew/Pw = 1.06$ ,  $El/Ew = 1.51$ .

Elytra short and wide ( $El/Ew = 1.51$ ) but almost parallel-sided; striae deep but not punctate; intervals convex. Interval 3 with only one setigerous puncture just after the middle, adjoining stria 2. Shoulders well marked and with minute tooth, hardly distinguishable, basal margin perpendicular to suture, forming a distinct angle with lateral one. Abdomen strongly and densely punctate, last abdominal sternite of male with a wide, superficial and triangular pit.

Legs quite short and stout; onychium glabrous underneath. Metatibiae internally quite strongly crenulate in the males, smooth in the females.

Medianlobus large, in lateral view strongly bent almost at middle and weakly bent downward at apex (Fig. 3a); in dorsal view with apex almost straight and right margin sinuate before apex (Fig. 3b). Right paramere relatively long and rectilinear, only weakly bent near apex (Fig. 3c).

**Comparisons:** The rounded pronotal shape first suggested that the species belongs to the subgenus *Sinosteropus*, but the aedeagal structure is extremely close to that of several other species of *Neohaptoderus* and proves that it belongs here. One of us has already proposed a redefinition of this subgenus (SCIACKY 1994), which contains many more species than supposed by JEDLIČKA (1962), since many species attributed to *Morphohaptoderus* by this author have been transferred hereto. The species definitely belonging to *Neohaptoderus* in the new sense are: *Pterostichus diversus* (FAIRMAIRE 1886), *P. stictopleurus* (FAIRMAIRE 1888), *P. oreophilus* (TSCHITSCHÉRINE 1898), *P. berezowskyi* (TSCHITSCHÉRINE 1898), *P. mundus* JEDLIČKA 1938, *P. maderi* JEDLIČKA 1938, *P. molopsoides* JEDLIČKA 1934, *P. orestes* JEDLIČKA 1936, *P. komalus* JEDLIČKA 1936, *P. ignavus* (TSCHITSCHÉRINE 1896), *P. haesitatus* (FAIRMAIRE 1888), *P. sinicus* (TSCHITSCHÉRINE 1896) and *P. yunnanensis* JEDLIČKA 1934. The new species described here has a pronotal shape which resembles only that of *P. molopsoides* from Yunnan, while all the others look much more different morphologically. As far as the aedeagal shape is concerned, preliminary studies have shown much more limited interspecific variations in this subgenus than those observed, for instance, in the subgenus *Morphohaptoderus*. The right paramere, on the other hand, seems to vary much more according to the species and can vary from a very short and stout shape to an extremely long and narrow one.

**Geographical notes:** This species is the one of the two first of this

subgenus known from Shaanxi and looks indeed different from most of the others known of the subgenus in general look. It lives in the Hua Shan mountains, a massif fairly isolated from the main chain of the Qin Ling Shan.

***Pterostichus (Neohaptoderus) catei rotundithorax* ssp.n.**

**Diagnosis:** A *Pterostichus (Neohaptoderus)* very similar to *P. catei catei*, from which it mainly differs in the shape of pronotum and the smaller humeral tooth.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 35.31 N, Mt. W pass autoroute km 70, 47 km S Xian, 2350-2500 m.

**Type material:** Holotypus ♂, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR). 7 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 1 paratype ♂ with the same data but 26.-29.VIII.1995, leg. Wrase (cWR).

**Derivatio nominis:** The name of this subspecies derives from the Latin words *rotundus* (= rounded) and *thorax*, and alludes to the strongly rounded shape of its pronotum.

**Description:** This subspecies is so similar to the nominotypical form that a complete description is in our opinion unnecessary. The only differences are: pronotum more restricted towards base, with gutter less distinctly punctate and evidently narrower than in *P. catei catei*, elytra more convex, with humeral tooth much bigger, clearly distinguishable. Habitus as in fig. 35.  $Pw/Pl = 1.24$ ,  $El/Pl = 1.98$ ,  $Ew/Pw = 1.06$ .

Median lobe and parameres almost identical to those of *P. catei catei*.

This subspecies is evidently strictly related to the nominotypical one, but the external characters are quite different, so that at first glance we had not realized that they were so close to each other.

**Geographical notes:** This subspecies lives in an area in the central part of the Qin Ling Shan, which is fairly far and isolated from the mountain massif of the Hua Shan, where *P. catei catei* was collected, but at much higher altitude. It is possible that some of the differences are due to life in different habitats.

***Pterostichus (Neohaptoderus) kleinfeldianus* sp.n.**

**Diagnosis:** A *Pterostichus (Neohaptoderus)* of large size (12.1-12.3 mm), elongate and slender, with the pronotum strongly constricted at base, the elytra narrow and parallel-sided (fig. 32).

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian.

**Type material:** Holotypus ♂, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR). 8 paratypes ♂ ♀ from the same locality (cSC, cWR). 4 paratypes ♂ ♀ from the same locality but 26.-29.VIII.1995, 2300-2500 m leg. Wrase (cSC, cWR). 5 paratypes ♂ ♀ from Shaanxi, Qin Ling mts., 2600 m, Houzhenzi, 7.VII.1996, leg. Janata (cJA, cSC).

**Derivatio nominis:** This species is cordially dedicated to our estimated colleague, specialist of Carabini, Dr. F. Kleinfeld (Fürth), who generously donated us all the material of Pterostichinae collected by him in Shaanxi.

**Description:** Total length 12.1-12.3 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 32.

Head large, completely smooth, rather convex, a little narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum wide, strongly transverse, weakly constricted towards base. Anterior angles weakly and acutely projecting forward; sides almost rectilinearly towards base, then projecting in a small acute tooth. Lateral gutter very narrow, not explanate towards base, almost smooth. Base almost completely punctate, without punctuation only in the middle, but with deep longitudinal wrinkles. Two basal impressions, the internal one long, well-defined, deep; the external one very short, almost punctiform, both isolated from basal margin. Pro-, meso- and metasternum strongly and densely punctate.  $Pw/Pl = 1.12$ ,  $El/Pl = 2.14$ ,  $Ew/Pw = 1.17$ .

Elytra long and narrow ( $El/Ew = 1.62$ ), weakly dilated in apical half; striae deep and weakly punctate; intervals convex. Interval 3 with only one setigerous puncture almost at three-quarters, adjoining stria 2. Shoulders well marked and with small but distinct tooth, basal margin oblique, forming an acute angle with lateral one. Abdomen with punctuation sparse and superficial, last abdominal sternite of male with a wide, superficial and triangular pit.

Legs quite short and stout; onychium glabrous underneath. Metatibiae internally quite strongly crenulate in the males, smooth in the females.

Apex of Medianlobus in lateral view bent downward (Fig. 4a). Right paramere quite short, weakly bent near apex (Fig. 4c).

**Comparisons:** This species is quite similar in body shape to some *Neohaptoderus* from Sichuan and Gansu, namely *P. oreophilus* (TSCHITSCHÉRINE 1898) and *P. berezowskyi* (TSCHITSCHÉRINE 1898), from which it can be recognized only through the examination of the aedeagus. A detailed analysis of all species in the subgenus will clarify all relations among them (SCIÁKY, in prep.).

**Geographical notes:** This is the second species in this subgenus known from Shaanxi and, unlike the preceding one, is extremely close to some species from other regions. This proves once more that some groups of *Pterostichus* have undergone a recent speciation in the mountainous areas of China while some others, probably older, have been separated so recently that they are still very closely allied to species geographically rather distant.

***Pterostichus (Morphohaptoderus) ming* sp.n.**

**Diagnosis:** A *Pterostichus (Morphohaptoderus)* of small size (5.1-5.3 mm), with the pronotum hardly constricted towards base, the elytra parallel-sided and the apex of aedeagus strongly hooked.

**Type locality:** China, Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount. forest, 1650 m.

**Type material:** Holotypus ♂, 1.-2.IX.1995, leg. Wrase (cSC). 1 paratype ♀ with the same data as holotype (cWR). 5 paratypes ♀ ♀ with the same data as holotype, leg. M. Schülke (cSC, cWR).

**Derivatio nominis:** The specific epithet is based upon the name of the dynasty that ruled over China from 1368 to 1644.

**Description:** Total length 5.3-6.1 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 28.

Head large, not very convex, much narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from apical half of antennomere 3.

Pronotum large, strongly transverse, very weakly constricted in basal half. Anterior angles distinctly projecting forward, anterior margin strongly emarginate at middle; sides weakly curved towards base, then forming a small blunt tooth. Lateral gutter narrow, not explanate towards base. Two basal impressions almost impunctate, external one very short, less than one half length of internal one. Prosternum almost smooth, mesosternum strongly and densely, metasternum sparsely punctate.  $Pw/Pl = 1.37$ ,  $El/Pl = 2.27$ ,  $Ew/Pw = 1.15$ .

Elytra very short ( $El/Ew = 1.45$ ) but almost parallel-sided; striae rather superficial and impunctate; intervals almost flat. Interval 3 with three setigerous punctures, one at anterior third, one just after the middle and one on posterior third, the anterior two adjoining stria 3, the third adjoining stria 2. Shoulders angulate but not dentate, basal margin forming an acute angle with lateral one. Elytral microsculpture similar in both sexes. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Legs long and slender; onychium with two pairs of thin setae. Meso- and metatibiae not crenulate in the male.

Median lobe short, with apex strongly hooked (Fig. 5a, b). Right paramere short and with button-shaped apex (Fig. 5c).

**Comparisons:** This species is undoubtedly related to *P. huashanus* SCIAKY 1994 and to some of the species here described, from which it can easily be distinguished by the different number of the elytral pore-punctures and the different shape of the median lobe.



**Geographical notes:** Many of the species of *Morphohaptoderus* known to date from Shaanxi are quite homogeneous in the shape of the median lobe. Although both *P. ming* and *P. confucius* live on the same mountain massif, they have not been found in syntopy, but at very different altitudes.

***Pterostichus (Morphohaptoderus) confucius* sp.n.**

**Diagnosis:** A *Pterostichus (Morphohaptoderus)* of small size (5.1-5.3 mm), with the pronotum hardly constricted towards base, the elytra parallel-sided and the apex of median lobe strongly hooked (Fig. 6a).

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cSC). 5 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 4 paratype ♂ ♀ as with the same data holotype, leg. A. Pütz (cPZ, cSC, cWR). 1 paratype ♀ with the same data, leg. M. Schülke (cWR). 1 paratype ♂ from Shaanxi, Qin Ling mts., 2600 m, NW of Houzhenzi, VI.1996, leg. M. Häckel (cBU).

**Derivatio nominis:** The name of this species derives from that of the famous philosopher Confucius, who lived in China from 551 to 479 b. C.

**Description:** Total length 5.3-5.8 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 27.

Head large, not very convex, much narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from apical half of antennomere 3.

Pronotum large, strongly transverse, quite strongly constricted in basal half. Anterior angles distinctly projecting forward, anterior margin strongly emarginate at middle; sides weakly curved towards base, then forming a small tooth. Lateral gutter narrow, not explanate towards base. Two basal impressions more or less densely punctate, external one very short, less than one half length of internal one. Prosternum almost smooth, mesosternum strongly and densely, metasternum sparsely punctate.  $Pw/Pl = 1.29$ ,  $El/Pl = 2.29$ ,  $Ew/Pw = 1.17$ .

Elytra rather long ( $El/Ew = 1.52$ ) and weakly arcuate at sides; striae deep but not punctate; intervals convex. Interval 3 with four setigerous punctures, one at anterior fourth, two around the middle and one on posterior third, the first three adjoining stria 3, the fourth adjoining stria 2. Shoulders angulate but not dentate, basal margin forming a right or obtuse angle with lateral one. Elytral microsculpture similar in both sexes. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Legs long and slender; onychium with two pairs of thin setae. Meso- and metatibiae not crenulate in the male.

Median lobe short, with apex strongly hooked (Fig. 6a, b). Right paramere short and with button-shaped apex (Fig. 6c).

**Comparisons:** This species is related to *P. huashanus* SCIAKY 1994, *P. ming* and to *P. miroslavi* both described here. From the two species first mentioned it can be easily distinguished by its smaller size, presence of 4 punctures on interval 3 and the shape of the aedeagus; from the latter it mainly differs by the aedeagal shape.

**Geographical notes:** As has been expressed previously, this species, in spite of apparently similar look, is quite distinct from *P. ming*, which lives in the same area. The different altitudes at which these two species have been collected probably imply that they occupy very different ecological niches.

***Pterostichus (Morphohaptoderus) miroslavi* sp.n.**

**Diagnosis:** A *Pterostichus* of small size (5.9-6.7 mm), with pronotum weakly transverse and with rectangular basal angles, elytra short and weakly dilated at sides, with four pore-punctures on interval 3.

**Type locality:** China, Shaanxi, Qin Ling mts., 2600 m, Houzhenzi.

**Type material:** Holotypus ♂, 7.VII.1996, leg. Janata (cJA). 11 paratypes ♂ ♀ with the same data as holotypus (cJA, cSC, cWR).

**Derivatio nominis:** This species is cordially dedicated to our friend Miroslav Janata (Prague), who has often left us study interesting material collected during his entomological expeditions.

**Description:** Total length 5.9-6.7 mm; body dark brown, appendages dark reddish-brown, except femora, that are blackish. Habitus as in fig. 29.

Head large, not very convex, much narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from apical half of antennomere 3.

Pronotum large, strongly transverse, quite strongly constricted in basal half. Anterior angles hardly projecting forward, anterior margin straight; sides rectilinearly restricted towards base, then forming a very small tooth. Lateral gutter narrow, not explanate towards base. Two basal impressions very sparsely and superficially punctate, external one very short, almost one half length of internal one. Prosternum almost smooth, meso- and metasternum sparsely punctate.  $Pw/Pl = 1.27$ ,  $El/Pl = 2.15$ ,  $Ew/Pw = 1.12$ .

Elytra rather short ( $El/Ew = 1.51$ ) and weakly arcuate at sides; striae deep and weakly punctate; intervals convex. Interval 3 with four setigerous punctures, one at anterior fourth, two around the middle and one on posterior third, the two first adjoining stria 3, the fourth adjoining stria 2. Shoulders with very small tooth, basal

margin forming a rectangular or obtuse angle with lateral one. Elytral microsculpture similar in both sexes. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Legs long and slender; onychium with some pairs of thin setae. Meso- and metatibiae not crenulate in the male.

Median lobe short, with apex not hooked but only slightly curved downwards in lateral view (Fig. 8a), evidently bent to the right in dorsal view (Fig. 8b). Right paramere short and with button-shaped apex (Fig. 8c).

**Comparisons:** This species is related to *P. confucius* described here, from which it can be distinguished mainly by its aedeagal shape.

**Geographical notes:** This species was found on a mountain not far from that where the two preceding species live, but it seems evidently different by small but constant characters. It seems that the mountains of Shaanxi are a place with a marked diversification in the fauna of Pterostichinae.

***Pterostichus (Morphohaptoderus) lingshanus* sp.n.**

**Diagnosis:** A *Pterostichus (Morphohaptoderus)* of intermediate size (8.1-8.4 mm), elongate and slender, with the pronotum strongly constricted at base, the elytra narrow and parallel-sided and the apex of median lobe strongly hooked (Fig. 7a).

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cSC). 34 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 11 paratypes ♂ ♀ from the same locality as holotype but 2300-2500 m. 16 paratypes ♂ ♀ from the same locality as holotype but 2300-2500 m, sifted, 26-30.VIII.1995, leg. A. Pütz (cPZ, cSC). 1 paratype ♀ with the same data but 2350-2500 m, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR). 13 paratypes ♂ ♀ from Shaanxi, Qin Ling mts., 2600 m, Houzhenzi, 7.VII.1996, leg. Janata (cJA, cSC). 5 paratypes ♂ ♀ from Shaanxi, Qin Ling mts., 2600 m, NW of Houzhenzi, VI.1996, leg. M. Häckel (cBU). 1 paratype ♂ from Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount. forest, 1650 m, leg. Wrase (cWR).

**Derivatio nominis:** The specific epithet derives from the name of the mountains where the species was collected.

**Description:** Total length 8.1-8.4 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 30.

Head large, not very convex, much narrower than pronotum; eyes feebly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, transverse, markedly constricted towards base. Anterior angles weakly projecting forward; sides strongly curved towards base, then abruptly projecting into small acute tooth. Lateral gutter narrow, not explanate towards base.

Two basal impressions sparsely punctate, external one very short, less than one half length of internal one. Prosternum almost smooth, mesosternum strongly and densely, metasternum sparsely punctate.  $Pw/Pl = 1.15$ ,  $El/Pl = 2.23$ ,  $Ew/Pw = 1.17$ .

Elytra very long ( $El/Ew = 1.67$ ) and parallel-sided; striae deep but not punctate; intervals convex. Interval 3 with two setigerous punctures, one almost at the middle and one at posterior fourth, both adjoining stria 2. Shoulders well marked and with small tooth, basal margin forming a distinct angle with lateral one. Elytra of females with much stronger microsculpture and therefore much more opaque than those of males. Abdomen almost smooth, last abdominal sternite of female with 4 setae, that of male with 2 setae and with a large but superficial pit. This pit is strongly asymmetrical and is evidently displaced to the right side of the last sternite.

Legs long and slender; onychium with two pairs of thin setae. Meso- and metatibiae not crenulate in the male.

Median lobe with apical portion much longer than basal one, with ostium very large and reaching partially on the ventral side; apex in lateral view strongly hooked (Fig. 7a); in dorsal view strongly bent towards the right (Fig. 7b). Right paramere short and with button-shaped apex (Fig. 7c).

**Comparisons:** This species is externally similar to *P. dundai* SCIAKY 1994, from which it can be distinguished by the smaller size, the pronotum more rounded at sides, the shape of the aedeagus and the shorter and stouter right paramere. As far as the aedeagal shape is concerned, the most similar species is probably *P. maximus* TSCHITSCHÉRINE 1888, from Gansu, which is much larger and more robust than *P. lingshanus*.

**Geographical notes:** It is one of the nine known species of this subgenus from Shaanxi and belongs, as most of others in this region, to the group of species with aedeagal apex strongly hooked.

***Pterostichus (Morphohaptoderus) janatai* sp.n.**

**Diagnosis:** A *Pterostichus* of medium size (8.1 mm), with pronotum weakly transverse and with rectangular basal angles, elytra long and weakly dilated at sides, with two pore-punctures on interval 3.

**Type locality:** Shaanxi, Qin Ling mts., 2600 m, Houzhenzi.

**Type series:** Holotypus ♂, 7.VII.1996, leg. M. Janata (cJA).

**Derivatio nominis:** This species is cordially dedicated to our friend Miroslav Janata (Prague) for his friendly collaboration.

**Description:** Total length 8.1 mm; body and femora black, buccal parts, antennae, tibiae and tarsi dark brown. Habitus as in fig. 31.

Head small, not very convex, much narrower than pronotum; eyes strongly convex.

Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, weakly transverse, very scarcely constricted towards base. Anterior angles almost not projecting forward, anterior margin straight; sides uniformly rounded towards base, then shortly but evidently sinuate just before basal angles, that are rectangular. Lateral gutter narrow, not explanate towards base. Internal basal impression linear, deep and impunctate; external one very small and superficial, impunctate. Base almost completely smooth, only with very few scattered points. Pro-, meso- and metasternum sparsely but deeply punctate.  $Pw/Pl = 1.12$ ,  $El/Pl = 2.09$ ,  $Ew/Pw = 1.24$ .

Elytra rather short ( $El/Ew = 1.46$ ) and weakly dilated at sides; striae deep and impunctate, intervals convex. Scutellar stria rudimental, very short. Interval 3 with two setigerous punctures, the anterior one, adjoining stria 3, almost in the middle, the posterior one, adjoining stria 2, at the posterior fourth. Shoulders angulate but without tooth, basal margin forming a right angle with lateral one. Abdomen completely smooth, last abdominal sternite with 2 setae in the only known specimen (♂).

Legs long and slender; onychium glabrous underneath. Meso- and metatibiae not crenulate.

Median lobe rather short and stout, with a large carina near base, with apical portion longer than basal one and ostium strongly moved to the left side; apex, in lateral view, weakly curved ventrally (Fig. 9a); in dorsal view it is wide, rounded, symmetrical (Fig. 9b). Right paramere extremely short and dilated at apex (Fig. 9c).

**Comparisons:** This species forms, together with the following two and with another one still undescribed we know from Sichuan, a small group within the subgenus *Morphohaptoderus* characterized by the median lobe of the aedeagus inferiorly crenate. Although this aedeagal shape is quite unusual within this subgenus, we think that this is the correct systematic placement.

**Geographical notes:** The peculiar aedeagal shape of this species allows to range it in a group of species including also two more species from Shaanxi and another one from Sichuan, with a pattern that is proving more and more frequent as the carabidological fauna of these two regions becomes better known.

***Pterostichus (Morphohaptoderus) geberti* sp.n.**

**Diagnosis:** A *Pterostichus* of middle size (11.0-11.2 mm), with pronotum weakly transverse and with right-angled basal angles, elytra long and weakly dilated at sides, with two pore-punctures on interval 3.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2350-2500 m.

**Type material:** Holotypus ♂, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR). 9 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 1 paratype ♂ from China, Chin Ling Shan, ca. 34° N 108° E, 12.VI.1936, Eigin Suenson leg. (NHMW); 1 paratype ♂ from same locality and collector, 14.VII.1936 (NHMW).

**Derivatio nominis:** This species is cordially dedicated to our friend J. Gebert (Rohne), a well known specialist of Coleoptera Cicindelidae, for often helping us during the completion of this work.

**Description:** Total length 11.0-11.2 mm; body and femora black, buccal parts, antennae, tibiae and tarsi dark brown. Habitus as in fig. 33.

Head small, not very convex, much narrower than pronotum; eyes strongly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, weakly transverse, markedly constricted towards base. Anterior angles hardly projecting forward, anterior margin straight; sides uniformly rounded towards base, then shortly but distinctly sinuate just before basal angles, which are right-angled. Lateral gutter narrow, not explanate towards base. Only one basal impression linear, deep and impunctate. Base almost completely smooth, with only very few scattered points. Pro- meso- and metasternum smooth and impunctate.  $Pw/Pl = 1.02$ ,  $El/Pl = 1.97$ ,  $Ew/Pw = 1.24$ .

Elytra rather long ( $El/Ew = 1.56$ ) and weakly dilated at sides; striae deep and weakly punctate, intervals convex. Scutellar stria completely absent. Interval 3 with two setigerous punctures, the anterior one, adjoining stria 3, almost in the middle, the posterior one, adjoining stria 2, at the posterior fourth. Shoulders angulate but without tooth, basal margin forming a very wide angle with lateral one. Abdomen completely smooth, last abdominal sternite with 2 setae in the male, 4 setae in the female.

Legs long and slender; onychium glabrous underneath. Meso- and metatibiae not crenulate.

Median lobe rather short and stout, with a large carina near base, with apical portion longer than basal one and ostium strongly displaced to the left side; apex, in lateral view, weakly curved ventrally (Fig. 13a); in dorsal view it is wide, rounded, with a small hook on the left (Fig. 13b). Right paramere extremely short and dilated at apex (Fig. 13c).

**Comparisons:** This species is very peculiar among the *Morphohaptoderus* in the pronotal shape very narrowed posteriorly. Actually only the fact that the structure of the aedeagus is very close to that of the preceding species, that in body shape is much more similar to the common form in this subgenus, has persuaded us to range it in this group.

**Geographical notes:** The few species certainly belonging to this subgroup of *Morphohaptoderus* are diffused in Shaanxi and in Sichuan, following a well-defined and frequent scheme. The only one from Sichuan is still undescribed, but it is more strictly related to *P. geberti* than to the others.

***Pterostichus (Morphohaptoderus) parvicollis* sp.n.**

**Diagnosis:** A *Pterostichus* of small size (7.8 mm), similar to *P. geberti*, but distinctly smaller, with pronotum weakly transverse and with rectangular basal angles, elytra long and weakly dilated at sides, with one pore-puncture on interval 3.

**Type locality:** China, Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount. forest, 1650 m.

**Type material:** Holotypus ♀, 18-20.VIII.1995, leg. M. Schülke (cWR).

**Derivatio nominis:** The specific epithet derives from the Latin words *parvus* (= small) and *collum* (= neck, prothorax) and alludes to the small size of its pronotum.

**Description:** Total length 7.8 mm; body dark brown, appendages dark reddish-brown. Habitus as in fig. 34.

Head large, not very convex, much narrower than pronotum; eyes weakly convex. Last segment of labial palps narrow. Frontal sulci short, superficial, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, weakly transverse, very slightly constricted towards base. Anterior angles not projecting forward; sides almost rectilinearly constricted towards base, basal angles almost right-angled. Lateral gutter narrow, not explanate towards base. External basal impression almost completely obsolete, the internal long, linear, deep, sparsely punctate. Pro-, Meso- and Metasternum sparsely punctate.  $Pw/Pl = 1.02$ ,  $El/Pl = 2.21$ ,  $Ew/Pw = 1.40$ .

Elytra quite short ( $El/Ew = 1.55$ ) and weakly rounded at sides; striae deep but not punctate; intervals convex. Scutellar stria rudimentary, reduced to a small pit between striae 1 and 2. Interval 3 with only one setigerous puncture at the posterior third, adjoining stria 2. Shoulders well marked, angulate but without tooth, basal margin forming an obtuse angle with lateral one.

Legs short and rather stout; onychium glabrous underneath.

**Comparisons:** This species is similar to *P. geberti*, herewith described, but evidently smaller and more slender. Although the male is not known yet, we are persuaded that the two are closely related.

**Geographical notes:** This species, being related to the preceding one, also has relationships with species from Shaanxi and from Sichuan.

***Pterostichus (Circinatus) schuelkei* sp.n.**

**Diagnosis:** A *Pterostichus (Circinatus)* of relatively large size (11.1 mm), with sides of pronotum completely rounded and sides of elytra rounded instead of parallel-sided.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♀, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR).

**Derivatio nominis:** This species is dedicated to our colleague and friend M. Schülke, specialist of Staphylinidae, and companion of the second author on many successful entomological expeditions.

**Description:** Total length 11.1 mm; body and femora black, buccal parts, tibiae and tarsi dark brown. Elytra very smooth, with strong iridescence. Habitus as in fig. 37.

Head small, not very convex, much narrower than pronotum; eyes strongly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, strongly transverse, markedly constricted towards base. Anterior angles hardly projecting forward, anterior margin straight; sides uniformly rounded towards base, basal angles completely rounded. Lateral gutter narrow, posteriorly explanate and vanishing. Only one basal impression linear, deep and impunctate. Base completely smooth. Pro- meso- and metasternum smooth and impunctate.  $Pw/Pl = 1.24$ ,  $El/Pl = 2.33$ ,  $Ew/Pw = 1.24$ .

Elytra quite short ( $El/Ew = 1.52$ ) and weakly dilated at sides; striae deep but not punctate, intervals convex. Interval 3 with two setigerous punctures adjoining stria 2, the first almost in the middle, the second at the posterior fourth. Shoulders completely rounded, without tooth, basal margin forming a very wide angle with lateral one. Abdomen completely smooth, last abdominal sternite with 4 setae in the only known femal specimen.

Legs long and slender; onychium with a few pairs of thin setae. Meso- and metatibiae not crenulate.

**Comparisons:** This species is quite similar to *P. (C.) baenningeri* JEDLIČKA 1931, from western Sichuan, from which it can immediately be distinguished by the more rounded elytra. Even though the six known species in this subgenus are very similar in body shape, they all have very distinctive male genitalia (SCIANKY 1996b), but the male of *P. schuelkei* is not yet known, it is impossible to ascertain if the aedeagal differences in this case are also as strong as in the other species.

**Geographical notes:** The subgenus *Circinatus* SCIANKY 1996, recently



described, included six species to date, five of which are from Sichuan and one from Yunnan. The occurrence of another species in Shaanxi demonstrates renewed the faunistic connections existing between the north of Sichuan and Shaanxi.

***Pterostichus (Sinoreophilus) scalptus* sp.n.**

**Diagnosis:** A *Pterostichus (Sinoreophilus)* of intermediate size (13.4-14.9 mm), with sides of pronotum strongly sinuate before hind angles and elytral intervals with dense irregular punctuation on all surface.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cWR). 47 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 2 paratypes ♀ ♀ with the same data but 2300-2500 m (cWR). 4 paratypes ♂ ♀ with the same data but 26.-27.VIII.1995, 2300-2500 m, leg. A. Pütz (cPZ 8 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., 33.35 N, 107.43 E, NW of Houzhenzi 2600 m, VII.1996, leg. M. Häckel (cSC, cWR). 1 paratype ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3100 m, VII.1996, leg. M. Häckel (cSC). 2 paratypes ♂ ♂ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3300 m, VII.1996, leg. M. Häckel (cSC). 2 paratypes ♂ ♂ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., NW of Houzhenzi 3100 m, VII.1996, leg. M. Häckel (cSC). 17 paratypes ♂ ♀ from Shaanxi, Qin Ling mts., 2600 m, Houzhenzi, 7.VII.1996, leg. M. Janata (cJA, cSC).

**Derivatio nominis:** The specific epithet is a latin adjective derived from the verb *scalpere* (= to chisel) and alludes to the peculiar elytral sculpture of this species.

**Description:** Total length 13.4-14.9 mm; body and appendages black, only the tip of palpi reddish-brown. Habitus as in fig. 39.

Head large, not very convex, not much narrower than pronotum; eyes strongly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora short and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, strongly transverse, markedly constricted towards base. Anterior angles weakly projecting forward, anterior margin strongly emarginate at middle; sides distinctly sinuate towards base, basal angles almost rectangular. Lateral gutter narrow, not explanate towards base. Two basal impressions densely punctate, external one very short, little more than one half as long as internal one. Base almost completely punctate, without punctuation only in the middle but with deep longitudinal sulci. Pro- meso- and metasternum wrinkled but not punctate.  $Pw/Pl = 1.30$ ,  $El/Pl = 2.70$ ,  $Ew/Pw = 1.27$ .

Elytra quite long ( $El/Ew = 1.63$ ) and weakly dilated at sides; striae deep but not punctate; intervals convex, all interrupted by irregular pits. Interval 3 with three setigerous punctures, the first at the anterior fourth, the second around the middle and the last at the posterior fourth, the anterior adjoining stria 3, the two posterior adjoining stria 2. Shoulders well marked but rounded, without tooth, basal margin forming a curve with lateral one. Elytra of females with much stronger

microsculpture and therefore much more opaque than males. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Legs long and slender; onychium glabrous underneath. Meso- and metatibiae not crenulate in the male.

Aedeagus very long and slender, with apical portion longer than the basal one and ostium weakly displaced to the left side; apex, in lateral view, weakly curved dorsally (Fig. 10a); in dorsal view it is wide, rounded, with no hook and weakly bent towards the left (Fig. 10b). Right paramere relatively short and weakly bent at apex (Fig. 10c).

**Comparisons:** *P. scalptus* can easily be distinguished from all other known species of *Sinoreophilus* SCIAKY 1996 by the simultaneous occurrence of three characters: sides of pronotum strongly sinuate before hind angles, absence of a hook at the aedeagal apex and short and stout right paramere. However, the irregular elytral sculpture is more similar to that of *P. validior* TSCHITSCHÉRINE 1888 than to that of other species (SCIAKY 1996c).

**Geographical notes:** The subgenus *Sinoreophilus* SCIAKY 1996, recently described, contains three very closely related species known to date only from northern Sichuan and southern Gansu, *P. potanini* TSCHITSCHÉRINE 1888, *P. przewalskii* TSCHITSCHÉRINE 1888 and *P. validior* TSCHITSCHÉRINE 1888. The new species, together with the following, is extremely interesting from a biogeographical point of view, since it extends the distribution of the subgenus to a Chinese region quite remote from the others.

***Pterostichus (Sinoreophilus) strigosus* sp.n.**

**Diagnosis:** A *Pterostichus (Sinoreophilus)* of large size (16.9-17.1 mm), with sides of pronotum strongly constricted and sinuate before hind angles and elytral intervals without irregular punctuation on entire surface.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cWR). 4 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 101 paratypes ♀ ♀ from the same locality as holotype, 2350-2500 m, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cPZ, cSC, cWR). 3 paratypes ♂ ♂ from Shaanxi, Qin Ling mts., 2600 m, Houzhenzi, 7.VII.1996, leg. M. Janata (cJA, cSC).

**Derivatio nominis:** The name of this species derives from the Latin adjective *strigosus*, meaning thin, narrow.

**Description:** Total length 16.9-17.1 mm; body and appendages blackish, only mouth parts and tarsi reddish-brown. Habitus as in fig. 40.

Head large, not very convex, not much narrower than pronotum; eyes very large and

strongly convex. Last palpomere narrow. Frontal sulci short, deep, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, hardly transverse, markedly constricted towards base, its surface completely covered with transverse wrinkles. Anterior angles weakly projecting forward, anterior margin strongly emarginate; sides strongly sinuate towards base, basal angles acute. Lateral gutter narrow, not explanate towards base. Two basal impressions ill-defined, smooth or sparsely punctate.  $Pw/Pl = 1.23$ ,  $El/Pl = 2.56$ ,  $Ew/Pw = 1.35$ .

Elytra quite long ( $El/Ew = 1.55$ ) and markedly dilated behind, widest after the middle; striae deep but not punctate; intervals convex. Interval 3 with two setigerous punctures, one on anterior third and one on posterior third, the anterior adjoining stria 3, the posterior adjoining stria 2. Shoulders rounded and without tooth, basal margin forming a curve with lateral one. Elytra of females with stronger microsculpture and therefore slightly more opaque than those of males. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Legs long and slender; onychium glabrous underneath. Meso- and metatibiae not crenulate in the male.

Median lobe very long and slender, with apical portion longer than the basal one and ostium weakly displaced to the left side; apex, in lateral view, weakly curved dorsally (Fig. 11a); in dorsal view it is wide, rounded, with no hook and weakly bent towards the left (Fig. 11b). Right paramere relatively short but bent at obtuse angle at two thirds of its length (Fig. 11c).

**Comparisons:** In spite of strong differences with the other species of *Sinoreophilus* known to date, we believe that this species belongs to this subgenus. In fact, the aedeagus shows the same general structure and only the shape of pronotum and elytra is different, but we have seen a specimen of a *Pterostichus* from Sichuan, probably representing the mysterious species *P. militaris* TSCHITSCHÉRINE 1893. This specimen has a structure that is almost intermediate between *P. potanini* and *P. strigosus*, with the pronotum strongly but shortly sinuate before the rectangular hind angles and the elytra more convex than in *P. strigosus* but flatter than in *P. potanini*. For this reason we consider it correct to insert *P. strigosus* in the subgenus *Sinoreophilus*.

**Geographical notes:** This species seems to be related with a species from Sichuan, probably forming with it a small group within the subgenus. It therefore belongs to that large group of species which show a relationships with species from Sichuan.

***Pterostichus* (subg.?) *gallopavo* sp.n.**

**Diagnosis:** A *Pterostichus* of the *pratti*-group of large size (16.9-17.1 mm), with pronotum weakly constricted towards base and elytra dilated at sides. Median lobe very large and strongly twisted at tip.

**Type locality:** China, Shaanxi, Hua Shan.

**Type material:** Holotypus ♂, 28.VII.1990 (cSC). 1 paratype ♀ with the same data as holotype (cTE). 3 paratypes ♂ ♀ from Shaanxi, Qin Ling Shan, 110.06 E, 34.27 N, Hua Shan, 118 km E Xian, N valley, 1200-1400 m, 18.-20.VIII.1995. (cWR). 2 paratypes ♂ ♀ with the same data as holotype but leg. A. Pütz (cPZ). 1 paratype ♂ from Shaanxi, Qin Ling Shan, 110.04 E, 34.30 N, Hua Shan, 100 km E Xian, 7.-14.VII.1996, leg. Kleinfeld & Schütze (cWR).

**Derivatio nominis:** The specific epithet derives from the latin name of the turkey and it alludes to the large size of this species.

**Description:** Total length 17.6-19.8 mm; body black, appendages dark reddish-brown. Habitus as in fig. 38.

Head large, not very convex, much narrower than pronotum; eyes strongly convex. Last segment of labial palps distinctly dilated towards tip. Frontal sulci short, superficial, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4.

Pronotum large, strongly transverse, weakly constricted towards base. Anterior angles weakly projecting forward; sides weakly curved towards base, basal angles obtuse. Lateral gutter narrow, not explanate towards base. Two basal impressions smooth, external one quite long, more than one half as long as internal one.  $Pw/Pl = 1.31$ ,  $El/Pl = 2.33$ ,  $Ew/Pw = 1.22$ .

Elytra quite short ( $El/Ew = 1.46$ ) and rounded at sides; striae deep but not punctate; intervals convex. Interval 3 with only one setigerous puncture at the posterior third, adjoining stria 2. Shoulders well marked, angulate but without tooth, basal margin forming an obtuse angle with lateral one. Elytra of females as shiny as those of males.

Legs long and slender; onychium glabrous underneath. Meso- and metatibiae not crenulate in the male.

Median lobe very long and slender, with apical portion longer than the basal one and ostium strongly displaced to the left side; apex, in lateral view, weakly curved dorsally (Fig. 12a); in dorsal view it is wide, rounded, with no hook and weakly bent towards the left (Fig. 12b). Right paramere relatively short and weakly bent at apex (fig. 12c).

**Comparisons:** This species fits in the group of *P. pratti*, as defined by JEDLIČKA (1962), which has never been formally inserted in any subgenus. From the other species of the *pratti*-group, *P. gallopavo* can be distinguished by the large size and very stout body, while the other species are either much smaller (e. g. *P. curtatus*

FAIRMAIRE 1886, *P. davidi* TSCHITSCHÉRINE 1897) or large but very elongate (e. g. *P. pratti* BATES 1890).

**Geographical notes:** This species is the first known of this group from Shaanxi, representing another instance of groups distributed in all regions surrounding the Sichuan plains.

***Pterostichus* (subg.?) *clepsydra* sp.n.**

**Diagnosis:** A *Pterostichus* of uncertain systematic position and quite large size (12.8 mm), with pronotum strongly restricted towards base and elytra dilated at sides. Hind trochanters very long and pointed at tip.

**Type locality:** China, Shaanxi, Qin Ling mts., 2600 m, Houzhenzi.

**Type series:** Holotypus ♀, 7.VII.1996 (cSc).

**Derivatio nominis:** The name of this species derives from the latin name *clepsydra* (= sand-glass) and alludes to its shape, showing a strong constriction between pronotum and elytra.

**Description:** Total length 12.8 mm; body blackish, appendages dark reddish-brown, except the black femora. Habitus as in fig. 41.

Head large, not very convex, much narrower than pronotum; eyes weakly convex. Last segment of labial palps narrow at tip. Frontal sulci short, superficial, linear and diverging behind. Tempora long and oblique, collar constriction hardly distinct dorsally. Antennae pubescent from antennomere 4 on.

Pronotum large, strongly transverse, anteriorly very wide and strongly constricted towards base. Anterior angles weakly projecting forward; sides weakly curved towards base, basal angles with small but acute tooth projecting laterally. Lateral gutter narrow, not explanate towards base. Base completely smooth, with two basal impressions; internal one long, linear, deep, almost extending to the middle of pronotum; external one extremely short, rudimental, much more superficial than internal one. Pro-, meso- and metasternum densely but superficially punctate.  $Pw/Pl = 1.33$ ,  $El/Pl = 2.23$ ,  $Ew/Pw = 1.10$ .

Elytra quite long ( $El/Ew = 1.52$ ) and rounded at sides; striae deep and punctate; intervals convex. Interval 3 with two setigerous pore-punctures adjoining stria 2, the anterior at anterior third, the posterior at posterior third. Shoulders well marked, with a small tooth, basal margin forming a rectangular angle with lateral one. Elytra strongly microsculptured, with a very opaque shine in the only known specimen (♀).

Legs long and slender; onychium with a few couples of thin setae underneath. Hind trochanters very long and pointed at tip.

**Comparisons:** This species is very curious in the occurrence of some characters: The pronotal shape and the strong microsculpture of the elytra could

show some relationships with the group of *P. andrewesi*, which is under revision by one of us (R.S.). This group is composed of six species distributed from northern Burma to Sichuan. The only species known from Sichuan, *P. andrewesi* JEDLIČKA 1931, shows some characters in common with *P. clepsydra*, i.e. the general body shape, with pronotum and elytra strongly rounded at sides, the strong elytral microsculpture of the female, but has normal hind trochanters. We think that the aedeagal characters will be necessary to ascertain its systematic position.

**Geographical notes:** As we have framed a hypothesis that this species belongs to the group of *P. andrewesi*, its distribution is another instance of a distribution reaching from Yunnan to Shaanxi, sometimes excluding Gansu, which may be due to insufficient investigations.

***Straneostichus puetzi* sp.n.**

**Diagnosis:** A *Straneostichus* of the *fischeri*-group of 11.2-12.1 mm, bronze-green, with punctate head, strongly transverse pronotum with a single lateral seta on each side and basal angles rectangular. Elytra short and wide, regularly rounded at sides.

**Type locality:** China, Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, autoroute km 93 S Zhouzhi, 106 km SW Xian, mountain forest, 1650 m.

**Type material:** Holotypus ♂, 1-2.IX.1995, leg. A. Pütz (cWR). 1 paratype ♂ with the same data as holotype (cSC). 1 paratype ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3100 m, VII.1996, leg. M. Häckel (cSC). 3 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Houzhenzi, 2600 m, VII.1996, leg. M. Janata (cJA, cSC, cWR).

**Derivatio nominis:** We are pleased to name this new species in honor of our friend A. Pütz (Eisenhüttenstadt), a well known specialist in Byrrhidae and Coccinellidae, who participated in the collecting expedition in Shaanxi with one of us (D.W.W.).

**Description:** Total length 11.2-12.1 mm. Colour green, sometimes with bronze hue on head, pronotum and elytra. Habitus as in fig. 43.

Frons covered with sparse punctuation, frontal sulci moderately deep, eyes very large and convex. Mouth parts dark brown.

Pronotum transverse; sides constricted in the anterior half, markedly sinuate towards the base. Anterior angles hardly projecting forward, basal angles rectangular. Anterior margin almost straight, base weakly bisinuate. Basal impressions double, deep and punctate; lateral gutter narrow and well-defined up to the hind angles. One setigerous puncture in the anterior half.  $Pw/Pl = 1.30$ ,  $El/Pl = 2.45$ ,  $Ew/Pw = 1.32$ .

Elytra rather wide ( $El/Ew = 1.43$ ), regularly rounded at the sides, widest in the middle or just before, with rounded shoulders. Basal margin forming an obtuse angle with the lateral one. Striae superficial but punctate, intervals flat. Legs moderately long and slender, dark brown or blackish, but never clearly black.

Aedeagus long and slender; apex, in lateral view, distinctly pointing downward, not dilated in preapical portion (Figs. 14a); in dorsal view almost rectilinear, not curved towards the left (Figs. 14b). Left paramere (Fig. 14c) quite long, bent at an obtuse angle almost in the middle.

**Comparisons:** This species is certainly more allied to *S. fischeri* and *S. ovipennis* than to the other three species known in the genus (SCIAKY 1994c, 1996a). They share two main characters, i. e. the punctuation on head and the occurrence of a single lateral seta of pronotum, but differ in the shape of pronotum and the proportion of elytra. The aedeagus is also rather similar to that of the following species.

**Geographical notes:** This species is known only from four specimens from southern Shaanxi, an area whose fauna is often similar to that of Sichuan. As an example we refer to the species of *Pterostichus* subg. *Morphohaptoderus*, ten of which are endemic to Sichuan, one to Gansu and one lives in both regions (SCIAKY 1994a).

### ***Straneostichus haeckeli* sp.n.**

**Diagnosis:** A *Straneostichus* of the *fischeri*-group of 9.7-9.9 mm, dark green, with punctate head, strongly transverse pronotum with a single lateral seta on each side and basal angles rectangular. Elytra short and wide, regularly rounded at sides.

**Type locality:** China, SW Shaanxi, Qinling mts., Houzhenzi env., 3300 m.

**Type material:** Holotypus ♂, VII.1996, leg. M. Häckel (cSC). 11 paratypes ♂ ♀ with same data as holotype (cSC, cWR). 2 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3300 m, VII.1996, leg. M. Häckel (cSC, cWR). 11 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Houzhenzi, 2600 m, VII.1996, leg. M. Janata (cJA, cSC).

**Derivatio nominis:** We are pleased to name this new species in honor of Dr. Martin Häckel, who collected the typical series of this species during an expedition in Shaanxi.

**Description:** Total length 9.7-9.9 mm. Colour dark green on head, pronotum and elytra. Habitus as in fig. 44.

Frons covered with sparse punctuation, frontal sulci moderately deep, eyes very large and convex. Mouth parts dark brown.

Pronotum transverse; sides constricted in the anterior half, markedly sinuate towards the base. Anterior angles hardly projecting forward, basal angles rectangular. Anterior margin almost straight, base weakly bisinuate. Basal impressions confluent, deep and punctate; lateral gutter narrow and well-defined up to the hind angles. One setigerous puncture in the anterior half.  $Pw/Pl = 1.27$ ,  $El/Pl = 2.44$ ,  $Ew/Pw = 1.42$ .

Elytra rather wide ( $El/Ew = 1.36$ ), regularly rounded at the sides, widest after the middle, with rounded shoulders. Basal margin forming an obtuse angle with the

lateral one. Striae superficial but punctate, deeper near base, then gradually more superficial; intervals flat. Legs rather short and stout, dark brown or blackish, but never clearly black.

Median lobe long and slender; apex, in lateral view, distinctly pointing downward, not dilated in preapical portion (Figs. 15a); in dorsal view strongly curved towards the left (Fig. 15b). Left paramere (Fig. 15c) quite short, bent at obtuse angle almost in the middle.

**Comparisons:** This species is clearly related to *S. fischeri* SCIAKY 1994, from southern Gansu, and *S. ovipennis* SCIAKY 1994, from northern Sichuan, but differs from both in the much smaller and stouter shape of the body. This is now the smallest known species of the *fischeri*-group. In spite of the distinct external differences in size, shape and length of appendages, the aedeagus of this species is quite similar to that of *S. puetzi*, described above and sympatric on Qin Ling Shan.

**Geographical notes:** This species is known from several specimens from two localities in southern Shaanxi.

***Straneostichus vignai violaceus* ssp.n.**

**Diagnosis:** A *Straneostichus* allied to *vignai* and in particular to the nominate subspecies, of 13.1-13.8 mm, violet, with impunctate head, weakly transverse pronotum with 3-4 lateral setae on each side and rectangular basal angles. Elytra short and wide, regularly rounded at sides.

**Type locality:** China, SW Shaanxi, Qinling mts., 33°35'N, 107°43' E, NW of Houzhenzi, 2600 m.

**Type material:** Holotypus ♂, VII.1996, leg. M. Häckel (cSC). 1 paratype ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3100 m, VII.1996, leg. M. Häckel (cWR); 2 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 2600 m, VII.1996, leg. M. Häckel (cSC, cWR). 10 paratypes ♂ ♀ from Shaanxi, Qin Ling mts., 2600 m, Houzhenzi, 7.VII.1996, leg. M. Janata (cJA, cSC).

**Derivatio nominis:** The name of this subspecies derives from the violet color of the dorsal surface.

**Description:** Total length 13.1-13.8 mm. Colour violet on head, pronotum and elytra. Habitus as in fig. 42.

This subspecies is so close to the nominate subspecies in all external features that a complete description is, in our opinion, unnecessary. The only diagnostic characters are in the aedeagus.

Aedeagus long and slender; apex, in lateral view, distinctly pointing downward, not dilated in preapical portion (Fig. 16a); in dorsal view strongly curved towards the left (Fig. 16b). Left paramere (Fig. 16c) quite short, bent at an obtuse angle almost in the middle.



**Comparisons:** This subspecies is the third one known for the species *S. vignai*. The nominate subspecies is known from northern Sichuan, the ssp. *romani* is based upon only three specimens from western Sichuan. The ssp. *violaceus* is much more closely related to the ssp. *vignai*, from which it can be distinguished only by the shape of the aedeagus. The apex of the median lobe, in fact, is more dilated in dorsal view.

**Geographical notes:** This subspecies is known from specimens collected on the same mountain in southern Shaanxi, but at slightly different altitudes. Although the distance from northern Sichuan is quite great, the differences between *S. vignai vignai* and *violaceus* are not so strong, suggesting that the differentiation between the two must have been quite recent. This species is the third known from Shaanxi, all three of which are known from very limited areas each.

Here we would like to point out an error in the description of *S. farkaci* SCIAKY 1996: While it was described as lacking the basal pore-puncture of the pronotum, a careful re-examination of the type series has revealed that this pore-puncture does exist, even though the seta is very fragile and is almost invariably rubbed off.

Furthermore we have discovered that another species of this genus from Yunnan had previously been described as *Aristochroa rotundata* YU 1992. The drawings that accompany the revision of the genus *Aristochroa* (XIE & YU 1993) clearly show that it is a species similar to *S. farkaci* but of even smaller size (9.0-9.5 mm instead of 10.9-11.8 mm), with the same pronotal shape and an aedeagus similar in shape but clearly longer and more curved ventrally in lateral view. We can therefore propose the following new combination:

*Aristochroa rotundata* YU 1992 = *Straneostichus rotundatus* (YU 1992) **comb. nov.**

***Trigonognatha schuetzei* sp.n.**

**Diagnosis:** A *Trigonognatha* of large size (20.8 mm), coppery, with one anterior seta on each side of pronotum, antennomere 3 glabrous and striae deep and impunctate.

**Type locality:** China, Shaanxi, Qin Ling Shan, 110.06 E, 34.27 N, Hua Shan, 118 km E Xian, N valley, 1200-1400 m.

**Type material:** Holotypus ♀, 18.-20.VIII.1995, leg. Wrase (cWR).

**Derivatio nominis:** This species is cordially dedicated to our estimated colleague H. Schütze (Göttingen), who generously donated us all the material of Pterostichinae collected by him in Shaanxi.

**Description:** Total length 20.8 mm; color coppery on head, pronotum and elytra. Habitus as in fig. 47.

Head large, impunctate, with deep frontal sulci, reaching the middle of the diameter

of the eyes. Vertex microscopically punctate. Antennae short, not reaching pronotal base, pubescent from the middle of antennomere 4 on.

Pronotum transverse, constricted towards base and sinuate before hind angles; sides weakly notched only near hind angles. One setigerous puncture in apical half, in the pronotal gutter, and one in the basal angle. Median sulcus well developed and deep, lateral gutter narrow all along its entire length; fore angles not prominent; hind angles rectangular and sharp. Two basal impressions deep and impunctate, separated from lateral gutter by a distinct carina; the internal one rounded, illdefined, wrinkled, the outer one shorter, deeper, linear; middle of base with short longitudinal sulci.  $Pw/Pl = 1.35$ ,  $El/Pl = 2.48$ ,  $Ew/Pw = 1.29$ .

Elytra wide ( $El/Ew = 1.43$ ), with maximum width after the middle. Striae deep, impunctate; intervals strongly convex. No setigerous punctures on interval three. Shoulder rounded, basal and lateral margins producing a wide curve.

Legs rather short and stout; onychium with some setae underneath.

**Comparisons:** *T. schuetzei* looks strictly related to *T. fairmairei* SCIAKY 1995. From this species it differs by the antennomere four glabrous, the sides of pronotum notched only at base and the smooth vertex.

**Geographical notes:** This is one of the first species of *Trigonognatha* known from Shaanxi and it partially fills a wide gap that existed between Sichuan and Gansu (with many known species), in the west, and the area of Peking, from where *T. jaechi* was described a few years ago, in the east. It seems ever more likely that the genus *Trigonognatha* is widely distributed throughout China and the surrounding areas and we hope that future research in inadequately known regions will reveal many more species to science.

### ***Trigonognatha kutsherae* sp.n.**

**Diagnosis:** A *Trigonognatha* of large size (22.8-24.8 mm), coppery, with one anterior seta on each side of pronotum, antennomere 3 glabrous and striae deep and impunctate.

**Type locality:** China, Shaanxi, Lueyang.

**Type material:** Holotypus ♂, 25.-30.VII.1996, leg. E. Kučera (cSC). 2 paratypes ♂♂ collected with holotype (cKU, cWR).

**Derivatio nominis:** This species is cordially dedicated to our friend Emil Kučera (Sobeslav), for often allowing us to study the interesting material collected during his expeditions.

**Description:** Total length 22.8-24.8 mm; color coppery on head, pronotum and elytra. Habitus as in fig. 46.

Head large, impunctate, with deep frontal sulci, reaching the middle of the diameter

of the eyes. Vertex microscopically punctate. Antennae short, not reaching pronotal base, pubescent from the middle of antennomere 4 on.

Pronotum transverse, constricted towards base and weakly sinuate before hind angles; sides weakly notched only near hind angles. One setigerous puncture in apical half, in the pronotal gutter, and one in the basal angle. Median sulcus well developed and deep, lateral gutter narrow all along its entire length; fore angles not prominent; hind angles rectangular and sharp. Basal impressions simple, round and deep, ill-defined, separated from lateral gutter by a distinct carina. Middle of base with short longitudinal sulci.  $Pw/Pl = 1.44$ ,  $El/Pl = 2.6$ ,  $Ew/Pw = 1.22$ .

Elytra wide ( $El/Ew = 1.48$ ), with maximum width after the middle. Striae deep, very fine punctate; intervals strongly convex. No setigerous punctures on interval three. Shoulder rounded, basal and lateral margins producing a wide curve. Lateral gutter markedly enlarged.

Legs rather short and stout; onychium with some setae underneath.

Aedeagus without particular characteristics, normal for the genus (Figs. 19a-c).

**Comparisons:** *T. kutshera* is close to *T. yunnana* STRaneo 1943 and *T. jaechi* SCIAKY 1955, but differs remarkably from both species by its wide lateral gutter of elytra.

**Geographical notes:** The same can be said as in the case of *T. schuetzei*.

### ***Trigonognatha straneo* sp.n.**

**Diagnosis:** A *Trigonognatha* of large size (18.2-19.1 mm), green, with one anterior seta on each side of pronotum, antennomere 3 glabrous and striae deep and impunctate.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2350-2500 m.

**Type material:** Holotypus ♂, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cWR). 23 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 1 paratypes ♀ from the same locality as holotype, 2500-2600 m, 26.-27.VIII.1995, leg. A. Pütz (cPZ).

**Derivatio nominis:** This species is dedicated to Ing. S. L. Straneo, the famous specialist of Pterostichini, as a modest thanks for his many contributions to the knowledge of this interesting group.

**Description:** Total length 18.2-19.1 mm; body ventrally black, dorsally green with golden hue; appendages completely black. Habitus as in fig. 48.

Head large, impunctate, with deep frontal sulci, reaching middle of the diameter of the eyes. Vertex microscopically punctate. Antennae short, not reaching pronotal base, pubescent from the middle of antennomere 4 on.

Pronotum transverse, strongly constricted towards base and sinuate before hind

angles; sides weakly notched only near hind angles. One setigerous puncture in apical half, in the pronotal gutter, and one in the basal angle. Median sulcus well developed and deep, lateral gutter narrow along its entire length; fore angles not prominent; hind angles rectangular and sharp. Two basal impressions deep and impunctate, separated from lateral gutter by a distinct carina; the internal one rounded, ill-defined, wrinkled, the outer one shorter, deeper, linear; middle of base with short longitudinal sulci.  $Pw/Pl = 1.37$ ,  $El/Pl = 2.61$ ,  $Ew/Pw = 1.29$ .

Elytra narrow ( $El/Ew = 1.49$ ), with maximum width after the middle. Striae deep, impunctate; intervals strongly convex. No setigerous punctures on interval three. Shoulder rounded, basal and lateral margins producing a wide curve.

Legs rather short and stout; onychium with some setae underneath.

Aedeagus without particular characteristics, normal for the genus (Figs. 18a-c).

**Comparisons:** This species looks related to the group of species from Sichuan including *T. saueri* SCIAKY 1995, *T. becvari* SCIAKY 1995, *T. robusta* (FAIRMAIRE 1894) and possibly also *T. viridis* TSCHITSCHÉRINE 1898.

**Geographical notes:** This species, like the preceding one, is one of the first known from Shaanxi and, like the preceding one, is related to species from Sichuan.

### ***Trigonognatha cordicollis* sp.n.**

**Diagnosis:** A *Trigonognatha* close to *T. vignai*, of small size (11.9-12.1 mm), purple, with one anterior seta on each side of the pronotum and one setigerous puncture on interval 3.

**Type locality:** China, Shaanxi, Qin Ling Shan, 110.06 E, 34.27 N, Hua Shan, 118 km E Xian, N valley, 1200-1400 m.

**Type material:** Holotypus ♂, 18.-20.VIII.1995, leg. Wrase (cWR). 6 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 7 paratypes ♂ ♀ with the same data as holotype but leg. A. Pütz (cPZ, cSC). 1 paratype ♂ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3300 m, VII.1996, leg. M. Häckel (cSC).

**Derivatio nominis:** The specific epithet refers to the distinctly cordiform shape of the pronotum.

**Description:** Total length 11.9-12.1 mm; color coppery on head, pronotum and elytra, sometimes with green reflections. Habitus as in fig. 50.

Head small, very fine punctate, with frontal sulci deep, reaching the middle of the diameter of the eyes. Antennae pubescent from article 4 on.

Pronotum transverse, strongly constricted towards the base and sinuate before the hind angles. Sides notched only near base. Only one setigerous puncture in the apical half. Median sulcus well developed and deep, lateral gutter narrow along its entire length, fore angles not prominent, hind angles acute. Two distinct basal impressions on each side, with a few scattered punctures; the internal one very long, curved,

almost reaching the middle of pronotum, the external one straight, scarcely more than one half as long as the other.  $Pw/Pl = 1.28$ ,  $El/Pl = 2.00$ ,  $Ew/Pw = 1.18$ .

Elytra short and wide ( $El/Ew = 1.42$ ), with maximum width after the middle. Striae deep, punctate, intervals convex, the intervals all of the same width. One setigerous puncture on interval three in the hind third, at second stria. Shoulder well marked, the basal margin meets the lateral margin with an angle of  $100^\circ$ .

Legs rather short and stout; onychium with some setae underneath.

Aedeagus (Figs. 21a-c) without particular characteristics, quite normal for the genus, smaller and more slender than in *T. vignai*.

**Comparisons:** The present species seems related to *T. vignai* CASALE & SCIACY 1994 in the short and stout body shape and the occurrence of a setigerous puncture on interval 3 of elytra, but differs readily from it in the strongly restricted pronotum.

**Geographical notes:** Together with the three preceding species, this is one of only five *Trigonognatha* known from Shaanxi, but these five species are not related to each other and also the relationships of *T. cordicollis* are to be searched for among more western species. They are therefore another example of a group in which continuity can be observed between the faunas of Sichuan and Shaanxi.

### ***Trigonognatha latibasis* sp.n.**

**Diagnosis:** A *Trigonognatha* close to *T. vignai* CASALE & SCIACY 1994, of small size (12.0-12.5 mm), green-coppery, with one anterior seta on each side of the pronotum and one setigerous puncture on interval 3.

**Type locality:** China, Shaanxi, Qin Ling Shan, Houzhenzi, 2600 m.

**Type material:** Holotypus ♂, 7.VII.1996, leg. M. Janata (cJA). 2 paratypes ♂♂ with the same data as holotype (cSC, cWR).

**Derivatio nominis:** The specific epithet refers to the very large basis of the pronotum.

**Description:** Total length 12.0-12.5 mm; color green-coppery on head, pronotum and elytra. Habitus as in fig. 49.

Head small, impunctate, with frontal sulci deep, reaching the middle of the diameter of the eyes. Vertex smooth. Antennae pubescent from article 4 on.

Pronotum transverse, very weakly constricted towards the base and hardly sinuate before the hind angles. Sides notched only near base. Only one setigerous puncture in the apical half (fig. ?). Median sulcus well developed and deep, lateral gutter narrow along its entire length, fore angles acute and prominent, hind angles rectangular, without or with a very small acut tooth. Two distinct basal impressions on each side, with a few scattered punctures; the internal one very long, curved,

almost reaching the middle of pronotum, the external one straight, two-thirds as long as the other.  $Pw/Pl = 1.42$ ,  $El/Pl = 2.23$ ,  $Ew/Pw = 1.21$ .

Elytra short and wide ( $El/Ew = 1.30$ ), with maximum width a little after the middle. Striae deep, impunctate, intervals convex, the intervals all of the same width. One setigerous puncture on interval three in the hind third, at the second stria. Shoulder well marked, the basal margin meets the lateral margin with an angle of  $100^\circ$ .

Legs rather short and stout; onychium with some setae underneath.

Aedeagus (Figs. 24a-c) without particular characteristics, quite normal for the genus, right paramere not so slender than in *T. cordicollis*.

**Comparisons:** The present species is very similar to *T. vignai* CASALE & SCIANKY 1994 in the short and stout body shape, the wide base of the pronotum and the occurrence of a setigerous puncture on interval 3 of elytra, but differs by a somewhat longer pronotum without a prominent tooth at hind angles and more prominent, acute fore angles and also by longer elytra, which are apically more acute. *T. cordicollis*, living also in the same area, differs readily from it by the strongly restricted pronotum and the weaker right paramere.

**Geographical notes:** Together with the four preceding species, this is one of only five *Trigonognatha* known from Shaanxi, but these five species are not related to each other and also the relationships of *T. latibasis* are to be searched for among more western species. They are therefore another example of a group in which continuity can be observed between the faunas of Sichuan and Shaanxi.

### *Aristochroa militaris* sp.n.

**Diagnosis:** An *Aristochroa* of large size (13.7-14.1 mm), with dark bronze coloured head and pronotum and bicoloured elytral intervals, asymmetrically enlarged.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m..

**Type material:** Holotypus ♂, 26-29.VIII.1995, leg. D. Wrase (cWR). 1 paratype ♂ with the same data as holotype (cSC). 18 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., 33.35 N, 107.43 E, NW of Houzhenzi 2600 m, VII.1996, leg. M. Häckel (cSC, cWR). 4 paratypes ♂ ♀ from China, SW Shaanxi, Qinling mts., Taibai Shan mass., 3300 m, VII.1996, leg. M. Häckel (cSC, cWR). 14 paratypes ♂ ♀ from Shaanxi, Qinlin mts., 2600 m, Houzhenzi, 7.VII.1996, leg. M. Janata (cJA, cSc). 3 paratypes ♀ ♀ from Shaanxi, Qinlin mts., 2600 m, NW of Houzhenzi, VI.1996, leg. M. Häckel (cBU).

**Derivatio nominis:** This species derives its name from the fact that it was found at first in an area that was closed for military purposes.

**Description:** Total length 13.7-14.1 mm; body and appendages black, head, pronotum and elytra dark bronze. Elytra with intervals 1, 3, 5, 7 and 8 larger, shining and convex, 2, 4 and 6 narrower, chagreened and flat. Habitus as in fig. 45.

Head large, not very convex, much narrower than pronotum; eyes strongly convex. Frontal sulci long, deep, bifurcate and diverging behind. Tempora long and oblique. Antennae pubescent from antennomere 4.

Pronotum large, transverse, constricted towards base. Anterior angles weakly projecting forward; sides curved towards base, then sinuate before the hind angles. Lateral gutter narrow, not explanate towards base; three setae in the anterior half, one in the basal angle. Two basal impressions almost smooth, external one shorter than the internal one. Pro-, meso and metasternum almost smooth.  $Pw/Pl = 1.32$ ,  $El/Pl = 2.52$ ,  $Ew/Pw = 1.37$ .

Elytra rather short ( $El/Ew = 1.40$ ) and weakly rounded at sides; striae superficial and formed by a series of small punctures. Intervals 1, 3, 5, 7 and 8 dark coppery, broader, shining and convex, 2, 4 and 6 greenish, narrower, strongly chagreened and flat. Interval 3 with one setigerous punctures, often, but not always, adjoining stria 2. Shoulders well-marked, basal margin forming a distinct angle with lateral one. Abdomen almost smooth, last abdominal sternite of male without any special feature, with 2 setae, that of female with 4 setae.

Aedeagus long and slender; apex in lateral view (Fig. 20a) long and narrow, almost rectilinear at tip; in dorsal view (Fig. 20b) quite long, very weakly bent to the right. Right paramere (Fig. 20c) short and dilated at tip.

**Comparisons:** The genus *Aristochroa* is certainly very difficult, given the very ancient descriptions of some species and the contradictions among some reviews that have been proposed in the past (ALLEN 1980; STRANEO 1991). Recently Xie & Yu (1993) proposed another revision with drawings of all known species and descriptions of some new ones. Unfortunately, the text is in Chinese and therefore not easy to understand, but the drawings are rather good and quite useful. According to these drawings, *A. militaris* seems almost intermediate in aedeagal shape between *A. balangensis* XIE & YU 1993 and *A. deqinensis* XIE & YU 1993.

**Geographical notes:** All the species of *Aristochroa* known up to now were from Yunnan, Sichuan, Gansu and Qinghai, this is therefore the first species known from Shaanxi.

### ***Stomis exilis* sp.n.**

**Diagnosis:** A *Stomis* of large size (12.8 mm), black with faint greenish hue on elytra; mandibles relatively short, the right one without notch; elytra long and narrow, almost parallel-sided, with distinct humeral tooth, aedeagus relatively small, with apex simply pointed, without apical disc or tooth.

**Type locality:** China, Shaanxi, Qin Ling Shan, 110.06 E, 34.27 N, Hua Shan, 118 km E Xian, N valley, 1200-1400 m.

**Type material:** Holotypus ♂, 18-20.VIII.1995, leg. A. Pütz (cWR).

**Derivatio nominis:** The name of this species alludes to its relatively narrow shape.

**Description:** Total length 12.8 mm, one of the largest known until now in the genus; body black, femora black, tibiae and tarsi dark reddish-brown, elytra with a faint greenish hue. Head and pronotum, taken together, much shorter than elytra. Habitus as in fig. 52.

Head large, smooth, narrower than pronotum; eyes small, longer than tempora, which are strongly convex. Collar constriction strong and deep. Mandibles relatively short, the right one without notch. Labrum weakly excised in the middle.

Pronotum relatively convex, not transverse; sides almost linearly restricted towards base, fore angles hardly protruding, hind angles obtuse. Anterior seta behind the anterior fourth, posterior one in the basal angle. Lateral gutter narrow; basal fovea single, narrow, parallel in the anterior half then diverging behind; entire base punctate. Pro-, meso- and metasternum sparsely punctate.

Legs long but rather robust.  $Pw/Pl = .98$ ,  $El/Pl = 2.19$ ,  $Ew/Pw = 1.40$ .

Elytra long, narrow ( $El/Ew = 1.59$ ), at sides weakly arcuate, with maximum width after the middle; shoulders quite narrow, with small but distinct tooth; basal margin almost perpendicular to suture, meeting the lateral margin at an obtuse angle. Striae distinctly punctate, well developed, complete. Intervals weakly convex on disc, flat at apex and externally.

Median lobe relatively small, in lateral view (Fig. 23a) with apical portion much longer than the basal one, quite depressed, with apex simply pointed, without apical disc or tooth. In dorsal view (Fig. 23b) with apex asymmetrical, bent towards the left, and with a small apical thickening.

**Comparisons:** The Chinese species of *Stomis* described up to now number only four, and all are very distant from *S. exilis*, but among the undescribed ones (SCIaky, in prep.) there are some from Sichuan that seem to approach this species.

**Geographical notes:** The known distribution we already know of the Chinese *Stomis*, including the undescribed species, ranges from northern Yunnan to Gansu, with the highest number in western Sichuan. The occurrence of another species in Shaanxi is yet another example of the faunistic connections between these two regions.

***Stomis deuvei shaanxianus* ssp.n.**

**Diagnosis:** A *Stomis* of small size (8.1 mm), black with greenish hue on elytra; mandibles relatively short, the right one without notch; elytra short and stout, rounded at sides, with small but distinct humeral tooth, aedeagus relatively small, with apex rectilinear in lateral view and with small apical tooth on the left in dorsal view.



**Type locality:** Shaanxi, Qinling mts., 2600 m, Houzhenzi.

**Type material:** Holotypus ♂, 7.VII.1996, leg. M. Janata (cJA).

**Derivatio nominis:** This name derives from the region where this form and many more species have been collected.

**Description:** Total length 8.1 mm; body black, elytra with a faint greenish hue, appendages reddish. Head and pronotum, taken together, shorter than elytra. Habitus as in fig. 53.

Head large, smooth, narrower than pronotum; eyes quite large, longer than tempora, which are short and convex. Collar constriction strong and deep. Mandibles relatively short, the right one without notch. Labrum strongly excised in the middle, the incision u-shaped.

Pronotum relatively convex, transverse; sides strongly sinuate before base, fore angles weakly protruding, hind angles right. Anterior seta behind the anterior fourth, posterior one in the basal angle. Lateral gutter narrow; basal impression single, wide, parallel in the anterior half then diverging behind; all base punctate. Pro-, meso- and metasternum sparsely punctate.  $Pw/Pl = 1.11$ ,  $El/Pl = 2.29$ ,  $Ew/Pw = 1.33$ .

Elytra long, wide ( $El/Ew = 1.56$ ), weakly arcuate at sides, with maximum width after the middle; shoulders quite narrow, with small but evident tooth; basal margin almost perpendicular to suture, meeting the lateral margin with an obtuse angle. Striae very superficial, evidently punctate, gradually obsolete towards the apex and externally. Intervals flat.

Legs short and robust.

Median lobe relatively small, with apex rectilinear in lateral view (Fig. 22a) and with small apical tooth on the left in dorsal view (Fig. 22b).

**Comparisons:** This subspecies is slightly but significantly different from the nominotypical one, described from Gansu (MARCILHAC 1993b) and of which we have examined two topotypical specimens. The differences are in the pronotum much more dilated anteriorly and sinuate towards the base and the elytra wider and proportionally shorter.

**Geographical notes:** This is the first case, together with the species that follows, of strict affinity between a taxon known from Gansu and one from Shaanxi, it is therefore quite important, because the most usual instances that we know are of stricter relationship between taxa from Shaanxi and from Sichuan, but this could also be due to our very incomplete knowledge of the Carabid fauna from Gansu, while that from Sichuan has been much more thoroughly investigated both in the past and recently.

***Stomis chinensis* JEDLIČKA 1932**

This rare species, whose affinities are not clear yet, was described upon a specimen collected in „Sichuan, Ginfu-shan“. Later BOUSQUET (1983) mentioned a second specimen, a male labelled „Sichuan, Wen Chuan Chien 30 mi NNW Kuanshien 4000 ft“, that we have been able to examine and dissect. The specimen from Shaanxi is a female labelled „Shaanxi, Lueyang, 25-30.VII.1997“ (cSC) and is the first known for this region.

***Aristochroodes reginae orientalis* ssp.n.**

**Diagnosis:** An *Aristochroodes* of medium size (13.9-14.1 mm), very similar to *A. reginae reginae* MARCILHAC 1993, from which it differs fundamentally in the narrower pronotum.

**Type locality:** China, Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian, 2500-2600 m.

**Type material:** Holotypus ♂, 26.-29.VIII.1995, leg. Wrase (cWR). 5 paratypes ♂ ♀ with the same data as holotype (cSC, cWR). 4 paratypes ♂ ♀ with the same data but leg. A. Pütz (cPZ, cSC). 25 paratypes ♂ ♀ from the same locality as holotype, 2350-2500 m, 7.-19.VII.1996, leg. Kleinfeld & Schütze (cSC, cWR).

**Derivatio nominis:** The name of this subspecies derives from the Latin adjective *orientalis* (= eastern) and alludes to the fact that its distribution is more eastern than that of the nominotypical form.

**Description:** Total length 13.9-14.1 mm; dorsally metallic green or coppery, body dark brown, appendages dark reddish-brown. Habitus as in fig. 51.

**Comparisons:** Very similar to the nominotypical subspecies, from which it differs in a few points: pronotum less strongly transverse (w/l ratio = 1.41 instead of 1.46) and more strongly sinuate, elytrae longer and more slender (l/w ratio = 1.30 instead of 1.22), elytral striae more strongly punctate, shoulder more distinctly marked, with a small but protruding humeral tooth. Median lobe (Fig. 17b) very similar (compare the original illustrations in MARCILHAC 1993 with those of SCIAKY 1996c).

The asymmetrical elytral intervals, which gave the genus its name, is less evident here than in the nominotypical form. In fact, we do not attribute too much importance to this character, but believe that it is probably due to a lateral expansion of the elytra which has caused a differential enlargement of the intervals.

**Geographical notes:** *A. reginae* s. str. is known only from a limited area in southern Gansu, from which a large number of specimens was collected. The fact that a well distinct subspecies has been found in a nearby region seems to suggest that its distribution could be even wider, and we expect new research in other regions to clarify this question and perhaps discover further subspecies and even species.

### General discussion

The discovery of so many species of Pterostichini of different systematic groups in Shaanxi is very interesting and demonstrates an utterly unexpected faunistic richness in a very scarcely explored region. In most cases the faunistic connections of this region seem to be closest with Sichuan, even though Sichuan and Shaanxi do not share a long common border. It is possible that the fauna of Gansu, whose orographic systems are connected with those of Sichuan and Shaanxi, is still insufficiently known, and that its exploration will lead to the discovery of new forms constituting a link between the species known from Sichuan and those described here from Shaanxi. Even though the species described here are numerous, we believe the true number of existing species is much larger, and we hope that new faunistic expeditions will lead to the discovery of some of them.

Here we consider it useful to provide a list of the species of Pterostichini known from Shaanxi to date: *Pterostichus* (*Sinosteropus*) *latitemporis* sp.n., *Pterostichus* (*Sinosteropus*) *latitemporis inflaticeps* ssp.n., *Pterostichus* (*Sinosteropus*) *cathaicus* SCIAKY 1994, *Pterostichus* (*Neohaptoderus*) *catei* sp.n., *Pterostichus* (*Neohaptoderus*) *catei rotundithorax* ssp.n., *Pterostichus* (*Neohaptoderus*) *kleinfeldianus* sp.n., *Pterostichus* (*Morphohaptoderus*) *dundai* SCIAKY 1994, *Pterostichus* (*Morphohaptoderus*) *huashanus* SCIAKY 1994, *Pterostichus* (*Morphohaptoderus*) *lingshanus* sp.n., *Pterostichus* (*Morphohaptoderus*) *miroslavi* sp.n., *Pterostichus* (*Morphohaptoderus*) *janatai* sp.n., *Pterostichus* (*Morphohaptoderus*) *geberti* sp.n., *Pterostichus* (*Morphohaptoderus*) *parvicollis* sp.n., *Pterostichus* (*Circinatus*) *schuelkei* sp.n., *Pterostichus* (*Sinoreophilus*) *scalptus* sp.n., *Pterostichus* (*Sinoreophilus*) *strigosus* sp.n., *Pterostichus* (*Badistrinus*) *haptoderoides* TSCHITSCHÉRINE 1888, *Pterostichus* (*Rhagadus*) *microcephalus* MOTSCHULSKY 1860, *Pterostichus* (subg.?) *gallopavo* sp.n., *Pterostichus* (subg.?) *clepsydra* sp.n., *Straneostichus* *puetzi* sp.n., *Straneostichus* *haeckeli* sp.n., *Straneostichus* *vignai violaceus* ssp.n., *Trigonognatha* *straneoi* sp.n., *Trigonognatha* *schuetzei* sp.n., *Trigonognatha* *kutsherae* sp.n., *Trigonognatha* *cordicollis* sp.n., *Trigonognatha* *latibasis* sp.n., *Aristochroa* *militaris* sp.n., *Stomis* *exilis* sp.n., *Stomis* *deuvei shaanxianus* ssp.n., *Stomis* *chinensis* JEDLIČKA 1932, *Aristochroodes* *reginae orientalis* ssp.n.

### Zusammenfassung

24 neue Arten und 5 neue Unterarten von Carabidae Pterostichinae werden beschrieben: *Pterostichus* (*Sinosteropus*) *latitemporis* sp.n., *Pterostichus* (*Sinosteropus*) *latitemporis inflaticeps* ssp.n., *Pterostichus* (*Neohaptoderus*) *catei* sp.n., *Pterostichus* (*Neohaptoderus*) *catei rotundithorax* ssp.n., *Pterostichus* (*Neohaptoderus*) *kleinfeldianus* sp.n., *Pterostichus* (*Morphohaptoderus*) *ming* sp.n., *Pterostichus* (*Morphohaptoderus*) *confucius* sp.n., *Pterostichus* (*Morphohaptoderus*) *miroslavi* sp.n., *Pterostichus* (*Morphohaptoderus*) *lingshanus* sp.n., *Pterostichus* (*Morphohaptoderus*) *janatai* sp.n., *Pterostichus* (*Morphohaptoderus*) *geberti* sp.n., *Pterostichus* (*Morphohaptoderus*) *parvicollis* sp.n., *Pterostichus* (*Circinatus*) *schuelkei* sp.n., *Pterostichus* (*Sinoreophilus*) *scalptus* sp.n., *Pterostichus* (*Sinoreophilus*) *strigosus* sp.n., *Pterostichus* (subg.?) *gallopavo* sp.n., *Pterostichus* (subg.?) *clepsydra* sp.n., *Straneostichus* *puetzi* sp.n., *Straneostichus* *haeckeli* sp.n., *Straneostichus* *vignai violaceus* ssp.n., *Trigonognatha* *schuetzei* sp.n., *Trigonognatha* *kutsherae* sp.n., *Trigonognatha* *straneoi* sp.n., *Trigonognatha* *cordicollis* sp.n., *Trigonognatha* *latibasis* sp.n., *Aristochroa* *militaris* sp.n., *Stomis* *exilis* sp.n., *Stomis* *deuvei shaanxianus* ssp.n., *Aristochroodes* *reginae orientalis* ssp.n.

Als neue Kombination wird vorgeschlagen: *Straneostichus rotundatus* (YU 1992) comb. n. (= *Aristochroa rotundata* YU 1992).

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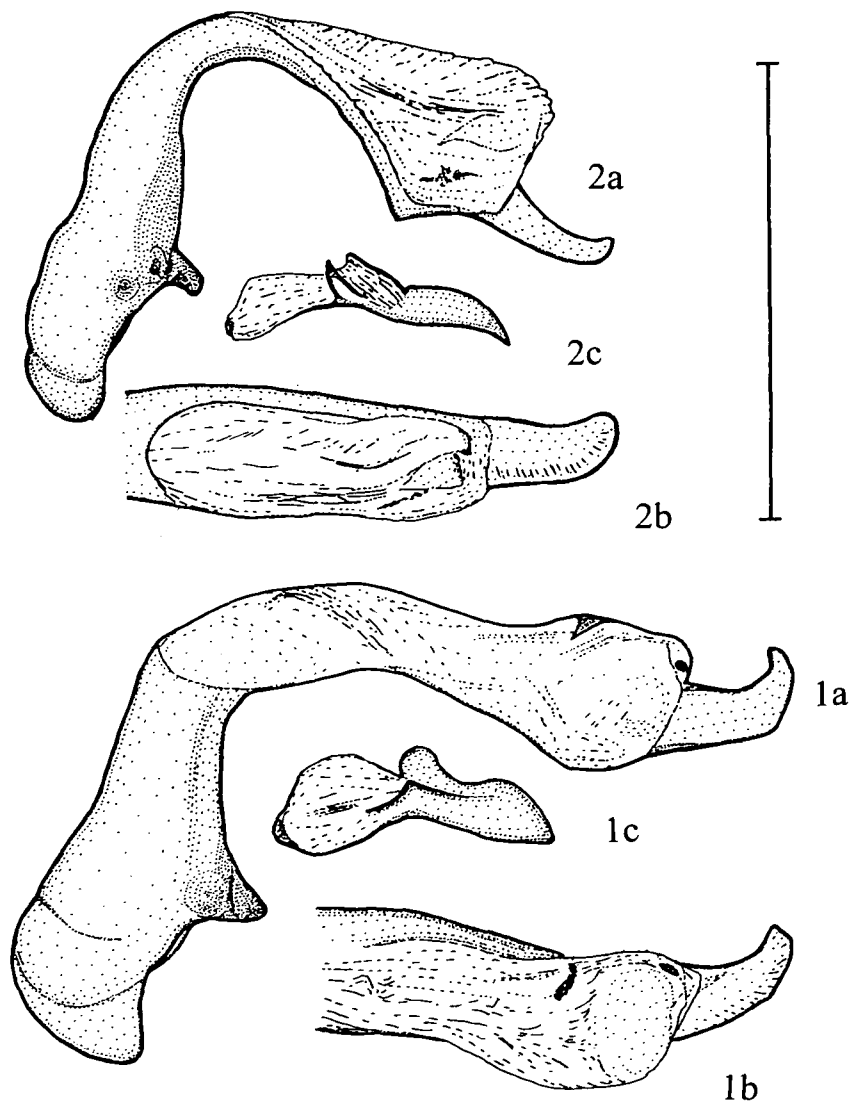
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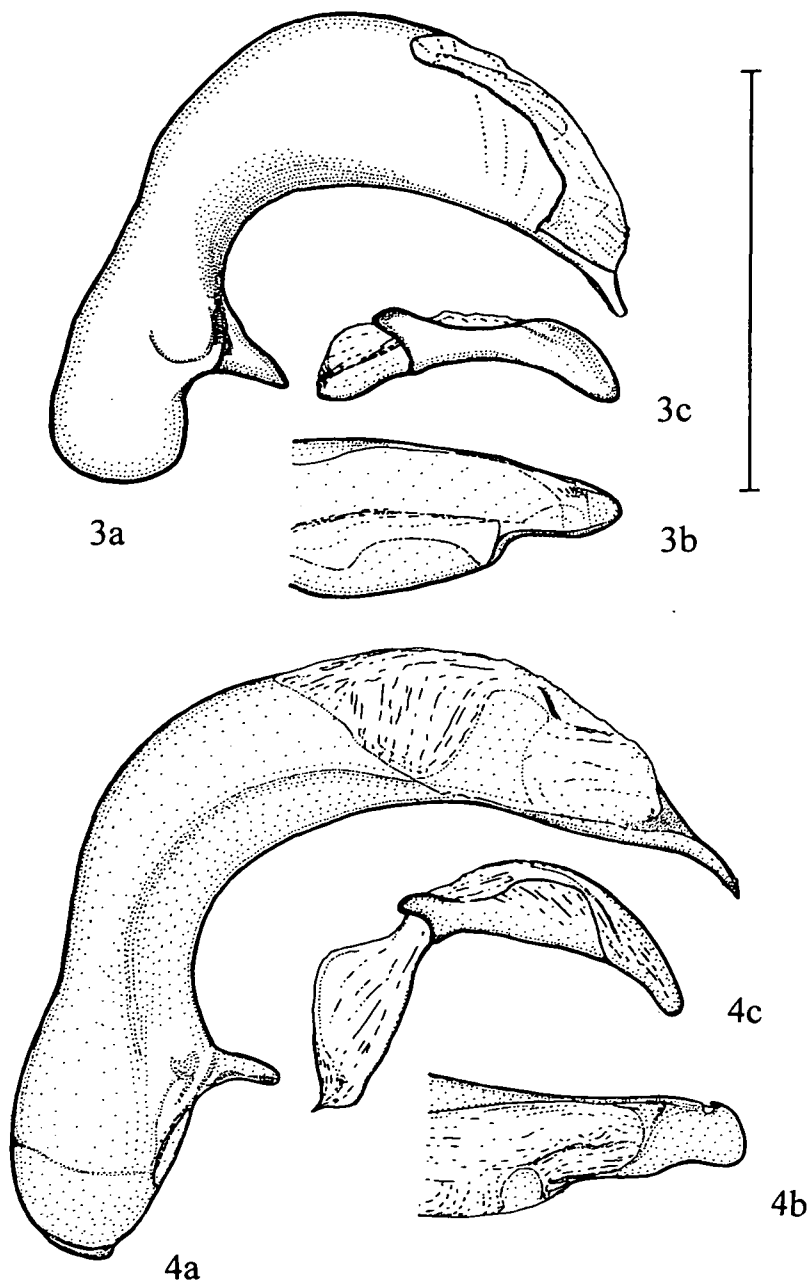
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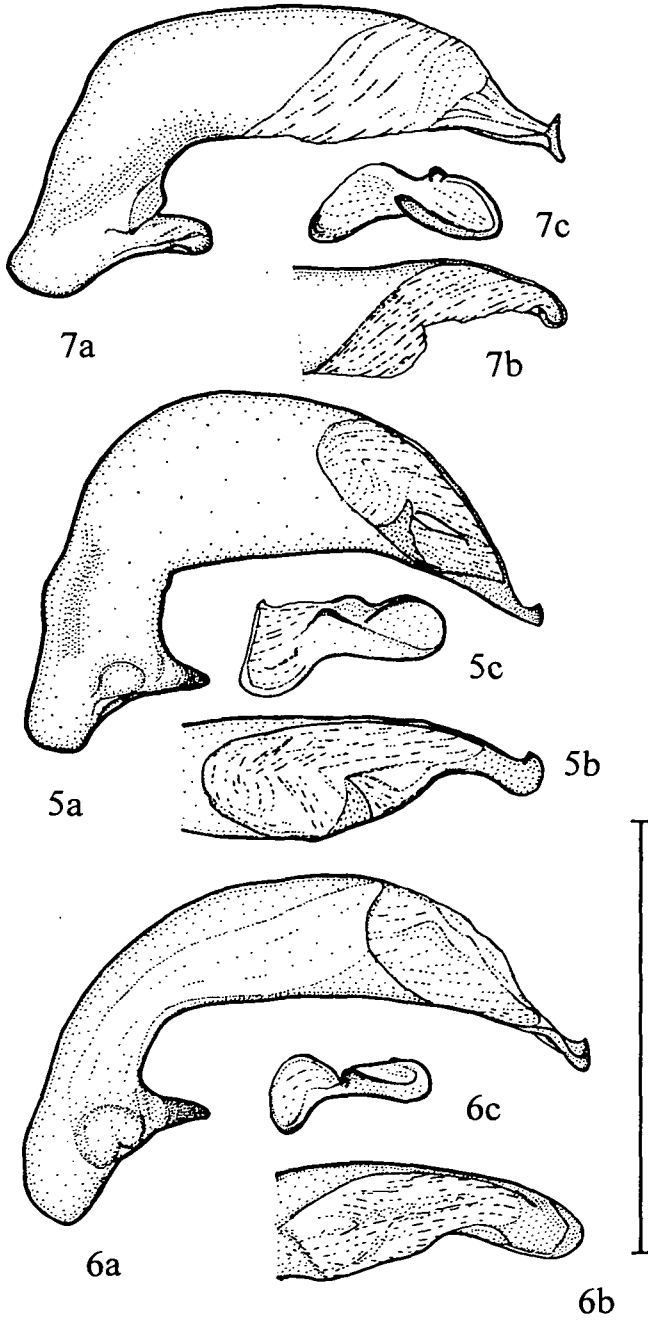
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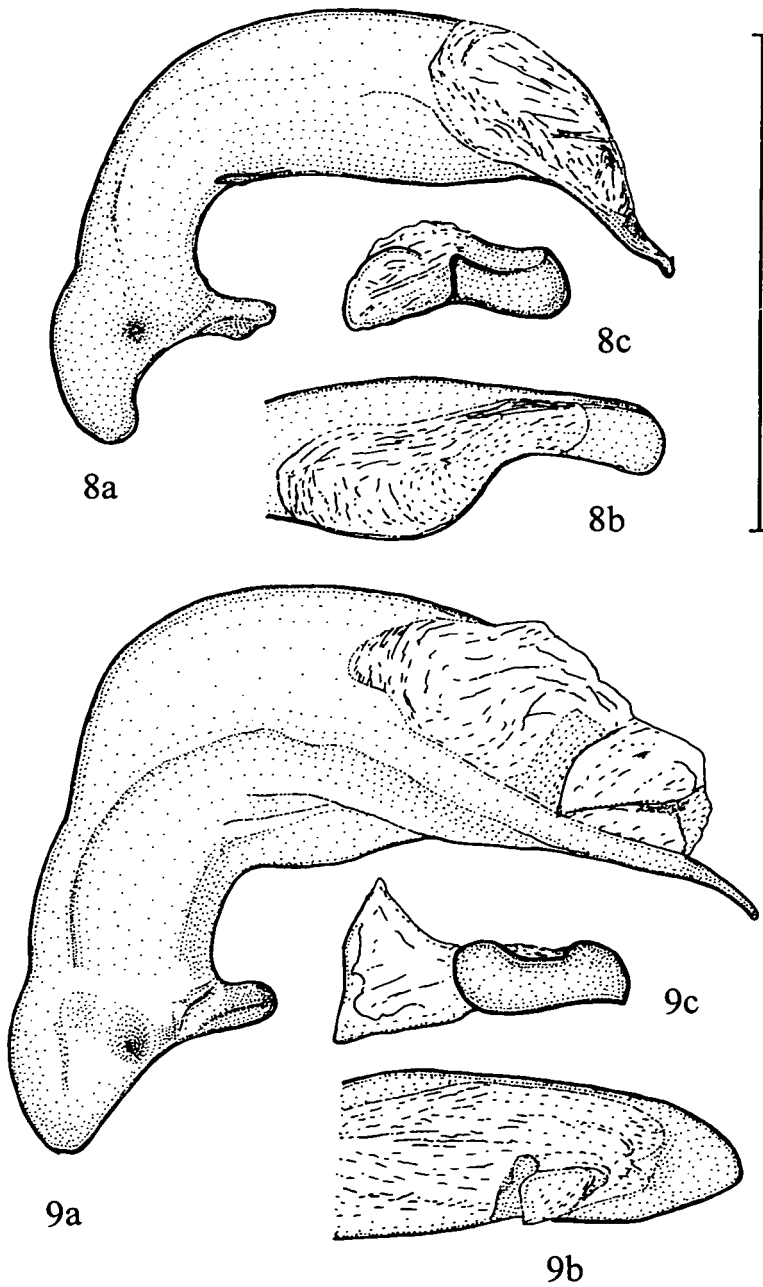
**Figs. 1-2 a, b, c:** Aedeagus. **a** - Medianlobe in lateral view. **b** - Medianlobe in dorsal view, apical part. **c** - Right paramere, in lateral view. **1** - *P. (Sinosteropus) latitemporis*. **2** - *P. (Sinosteropus) latitemporis inflaticeps* (Scale bar 1,5 mm).



Figs. 3-4 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. 3 - *P. (Neohaptoderus) catei*. 4 - *P. (Neohaptoderus) kleinfeldianus* (Scale bar 1,5 mm).

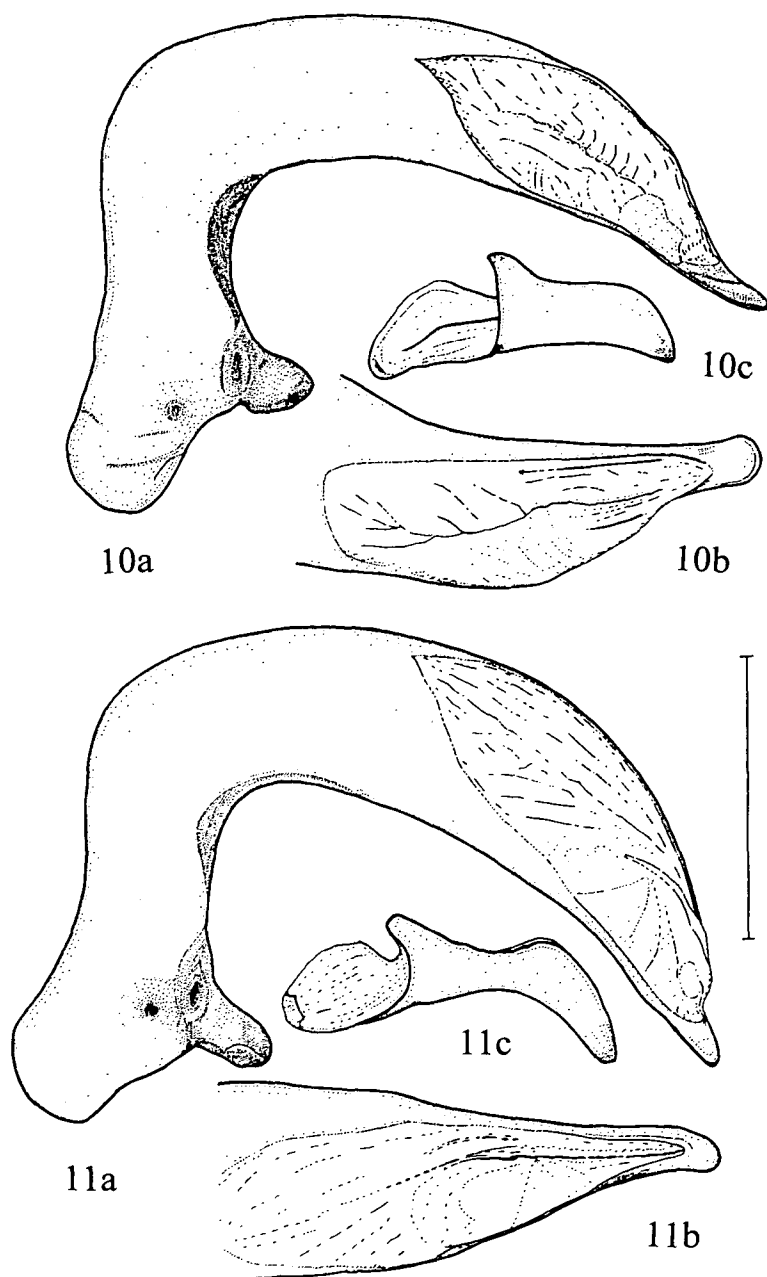


Figs. 5-7 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. 5 - *P. (Morphohaptoderus) ming*. 6 - *P. (Morphohaptoderus) confucius*. 7 - *P. (Morphohaptoderus) lingshanus* (Scale bar 2 mm).

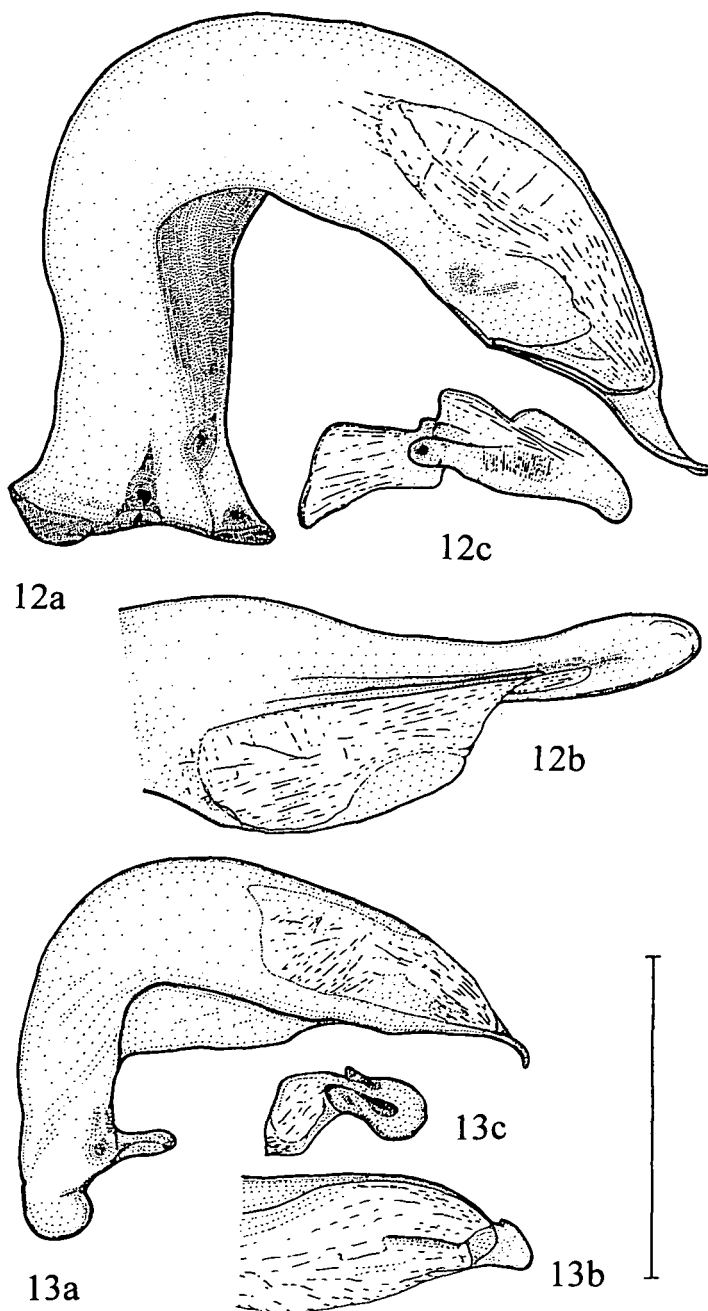


Figs. 8-9 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. 8 - *P. (Morphohaptoderus) miroslavi*. 9 - *P. (Morphohaptoderus) janatai* (Scale bar 1,5 mm).

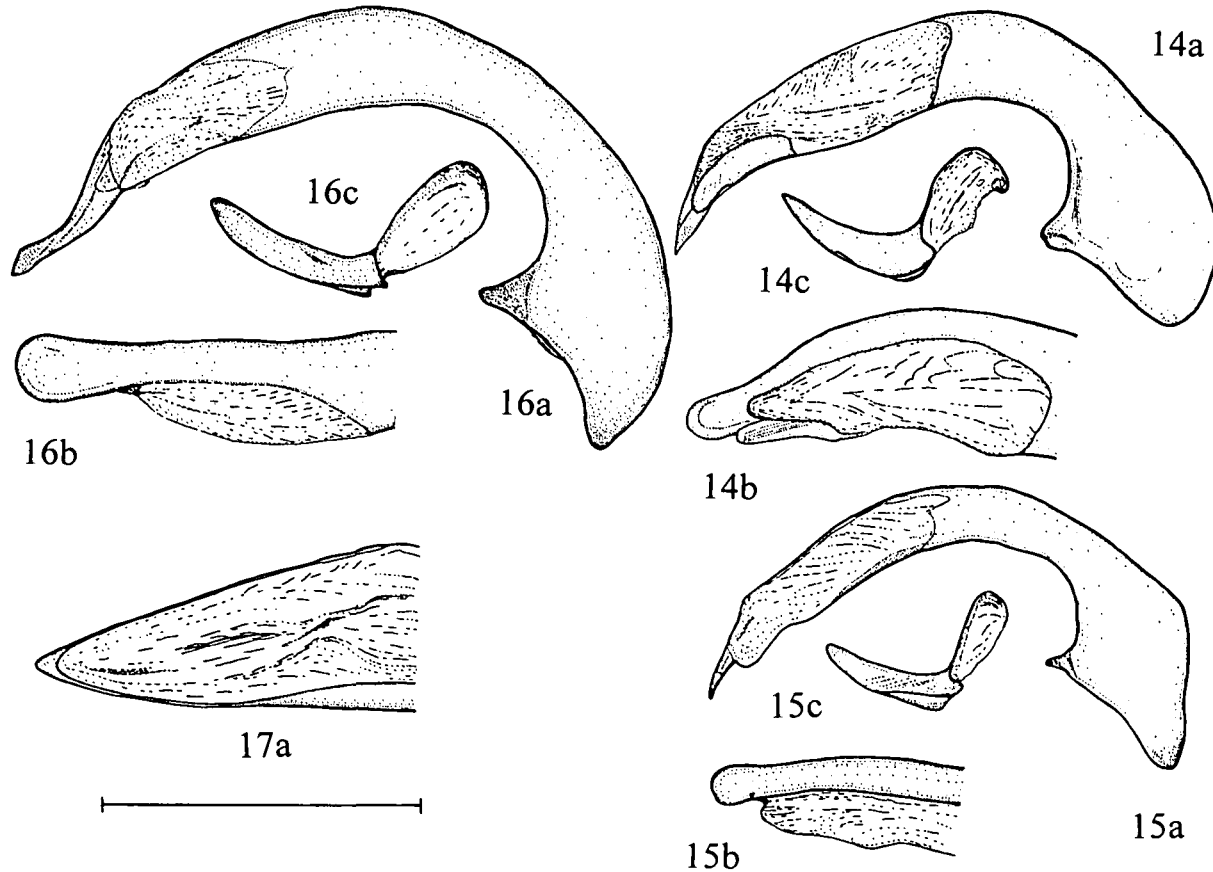




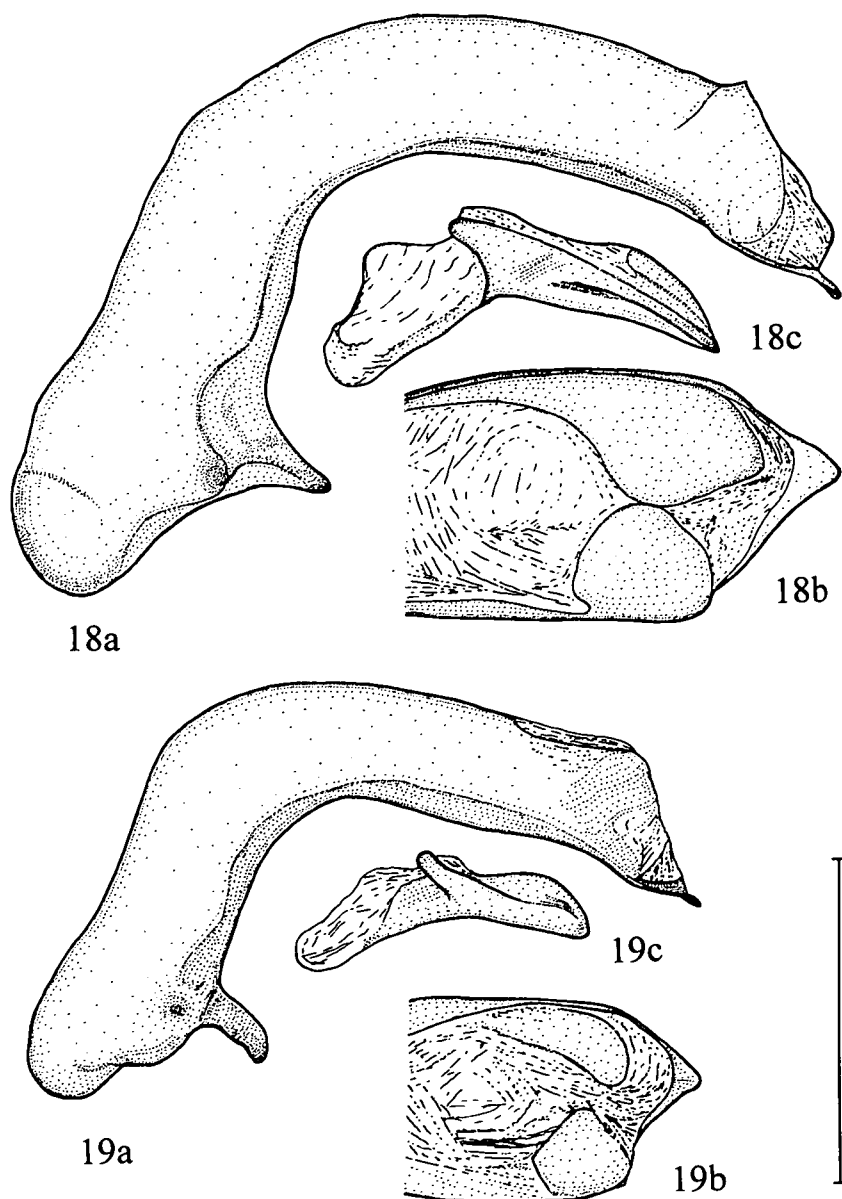
**Figs. 10-11 a, b, c:** Aedeagus. **a** - Medianlobe in lateral view. **b** - Medianlobe in dorsal view, apical part. **c** - Right paramere, in lateral view. 10 - *P. (Sinoreophilus) scalptus*. 11 - *P. (Sinoreophilus) strigosus* (Scale bar 1,5 mm).



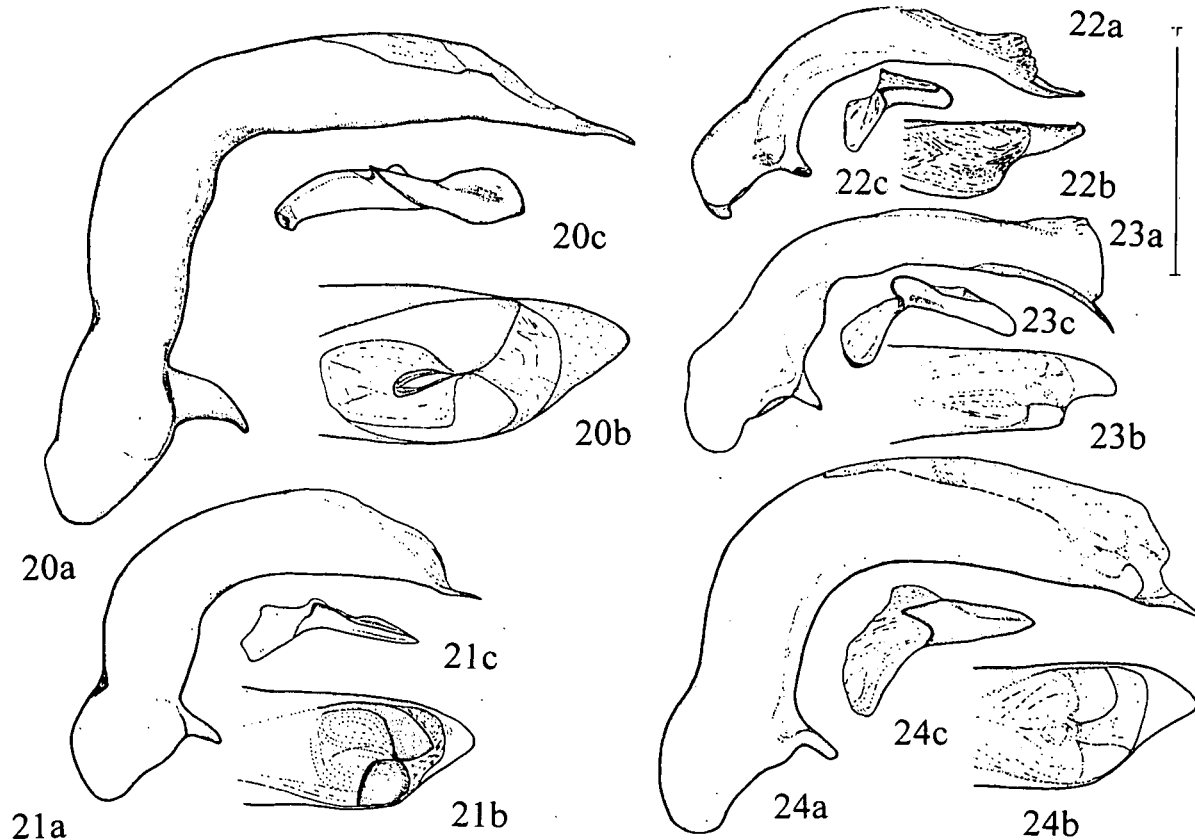
Figs. 12-13 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. Fig. 12 - *P. (subg.?) gallopavo*. Fig. 13 - *P. (Morphohaptoderus) geberti* (Scale bar 1,5 mm).



Figs. 14-17 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. 14 - *Straneostichus puetzi*. 15 - *S. haeckeli*. 16 - *S. vignai violaceus*. 17 - *Aristochroodes reginae orientalis* (Scale bar 1,5 mm).



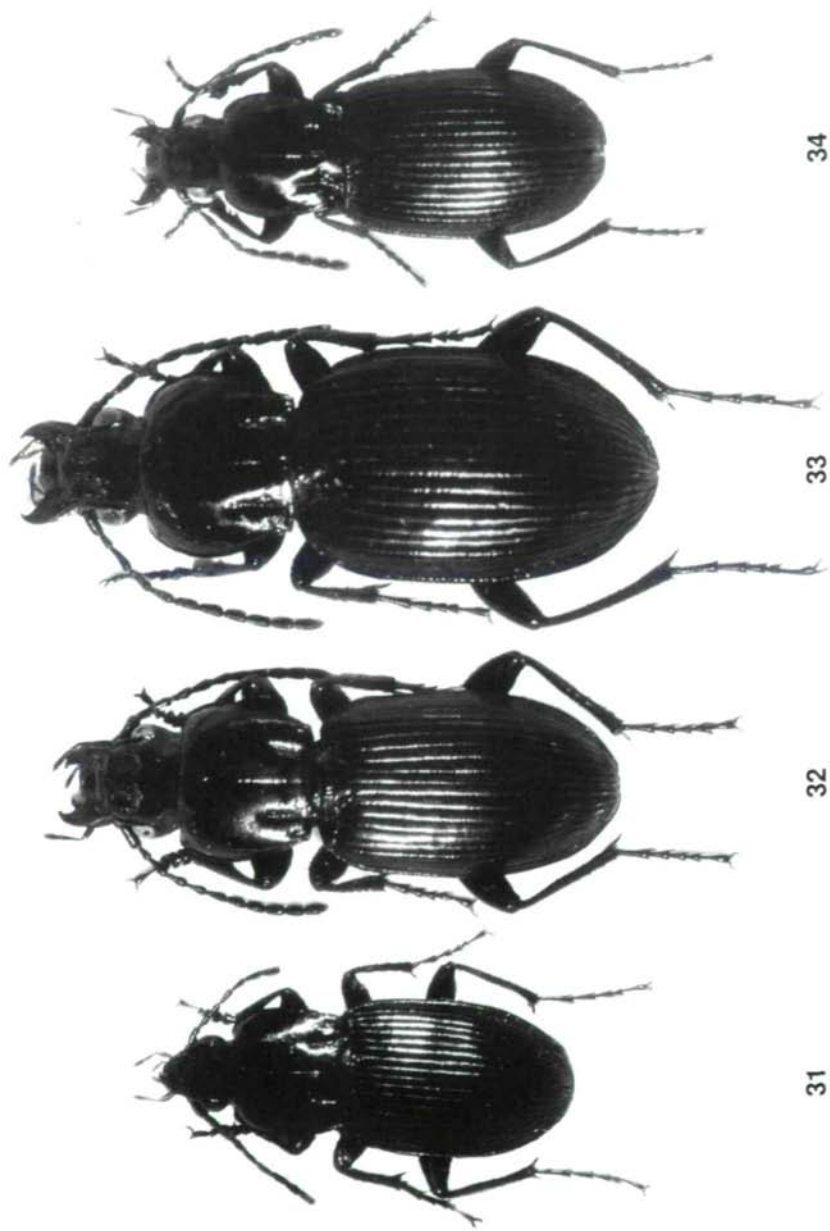
Figs. 18-19 a, b, c: Aedeagus. a - Medianlobe in lateral view. b - Medianlobe in dorsal view, apical part. c - Right paramere, in lateral view. 18 - *Trigonognatha straneoi*. 19 - *T. kutsheraei* (Scale bar 1,5 mm).



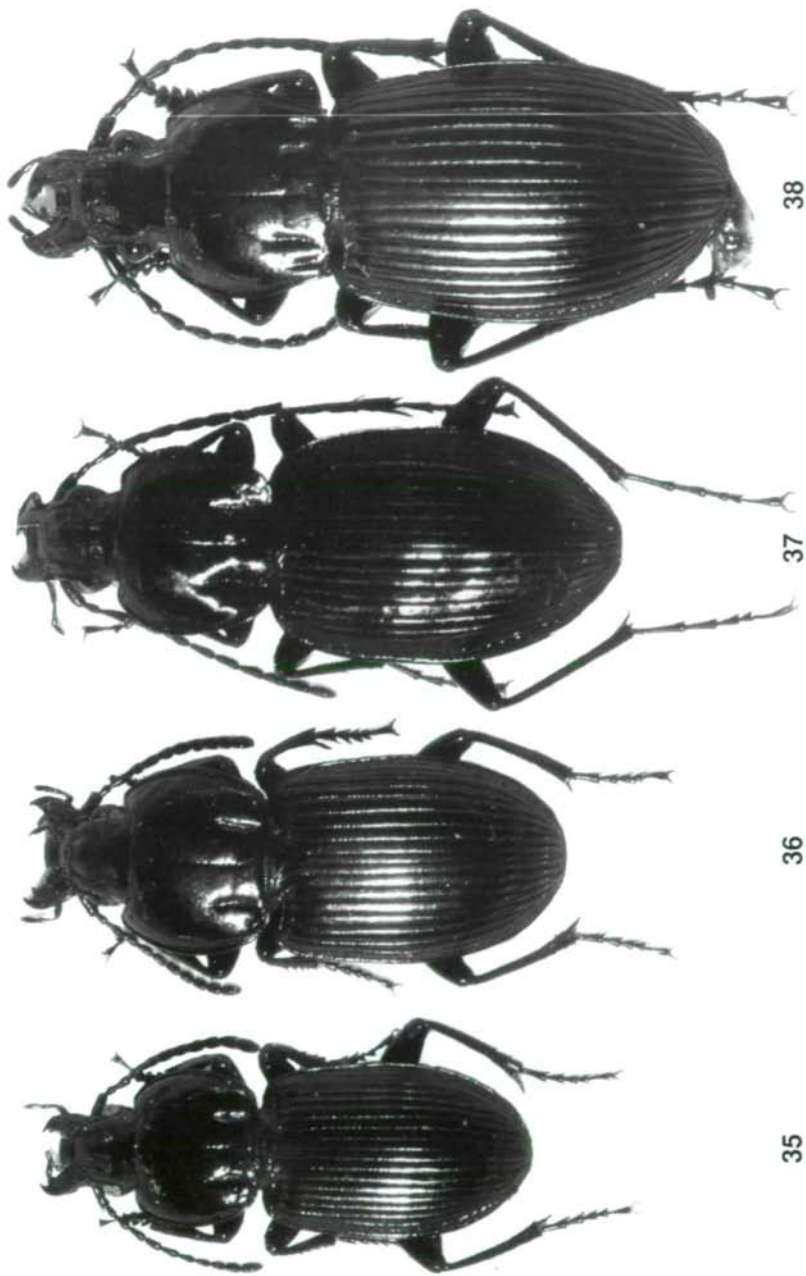
**Figs. 20-24 a, b, c:** Aedeagus. **a** - Medianlobe in lateral view. **b** - Medianlobe in dorsal view, apical part. **c** - Right paramere, in lateral view. **20** - *Aristochroa militaris*. **21** - *Trigonognatha cordicollis*. **22** - *Stomis deuvei shaanxianus*. **23** - *Stomis exilis*. **24** - *Trigonognatha latibasis* (Scale bar 1,5 mm).



**Figs. 25-30: Habitus.** 25 - *Pterostichus* (*Sinosteropus*) *latitemporis*. 26 - *P.* (*Sinosteropus*) *latitemporis inflaticeps*. 27 - *P.* (*Morphohaptoderus*) *confucius*. 28 - *P.* (*Morphohaptoderus*) *ming*. 29 - *P.* (*Morphohaptoderus*) *miroslavi*. 30 - *P.* (*Morphohaptoderus*) *lingshanus* (Photographs not enlarged to same scale!).

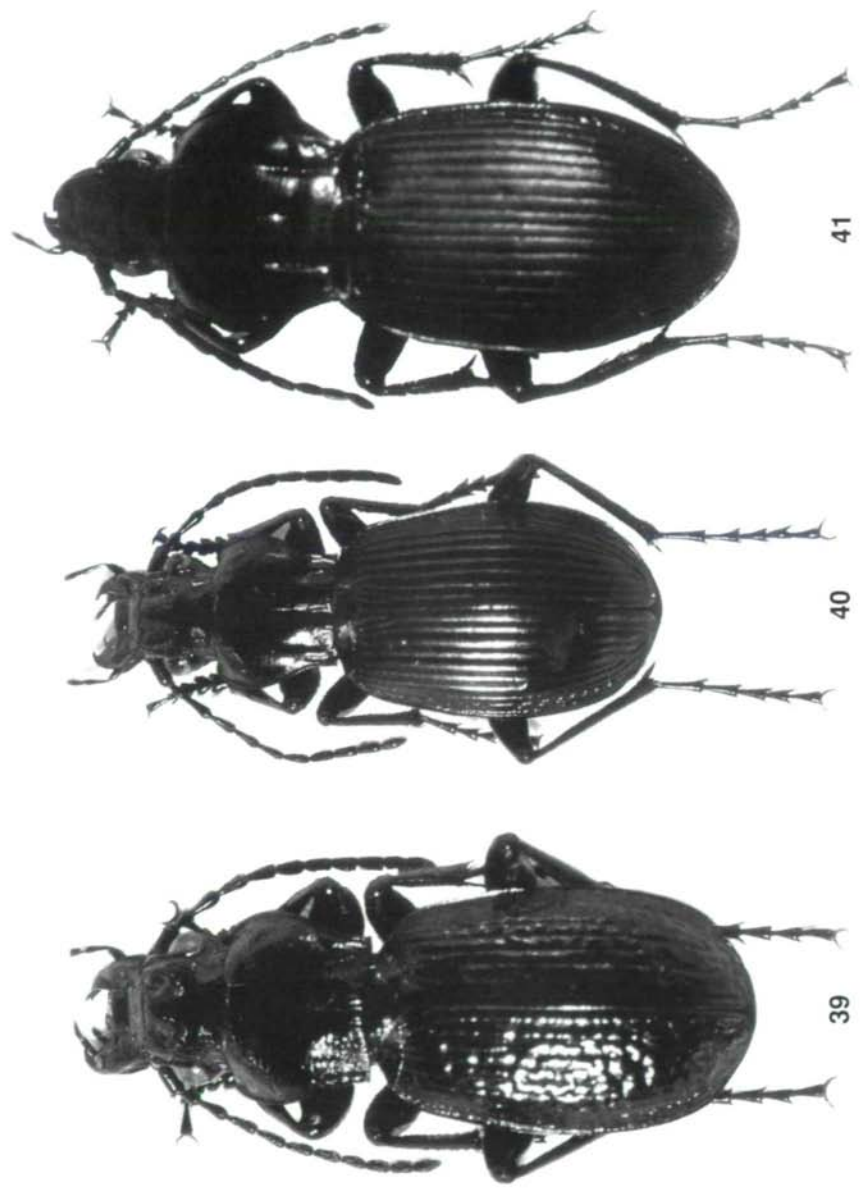


**Figs. 31-34:** Habitus. **31** - *Pterostichus* (*Morphohaptoderus*) *janatai*. **32** - *P.* (*Neohaptoderus*) *kleinfeldianus*. **33** - *P.* (*Morphohaptoderus*) *geberti*. **34** - *P.* (*Morphohaptoderus*) *parvicollis*.

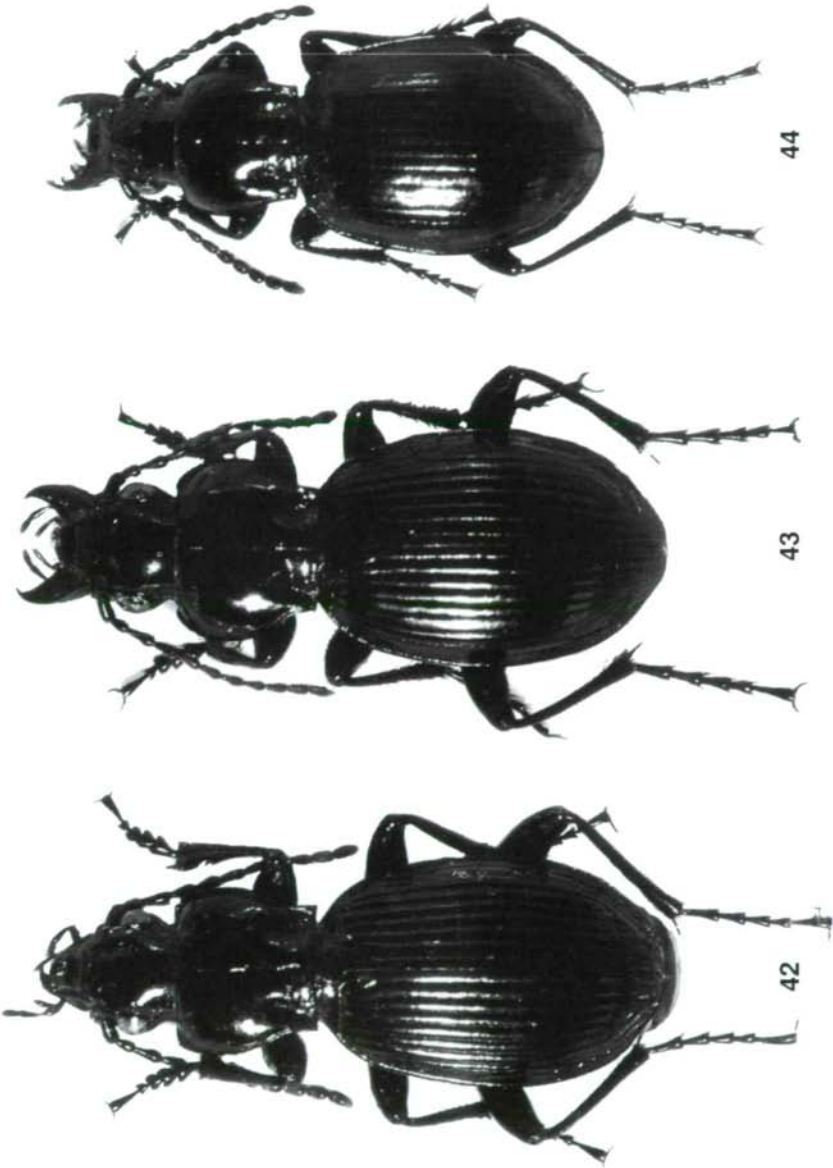


**Figs. 35-38:** Habitus. **35** - *Pterostichus* (*Neohaptoderus*) *catei rotundithorax*. **36** - *P.* (*Neohaptoderus*) *catei catei*. **37** - *P.* (*Circinatus*) *schuelkei*. **38** - *P.* (subg.?) *gallopavo*.

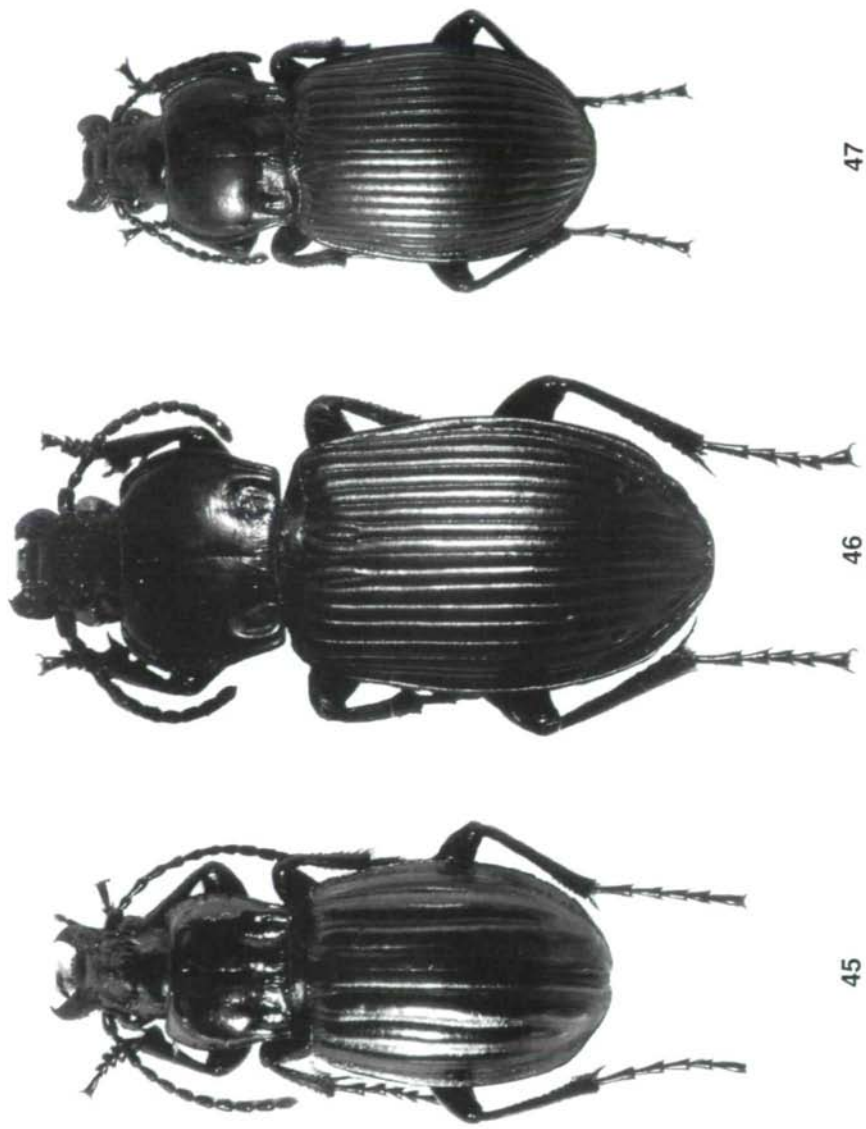




Figs. 39-41: Habitus. 39 - *Pterostichus (Sinoreophilus) scalptus*. 40 - *P. (Sinoreophilus) strigosus*. 41 - *P. (subg. ?) clepsydra*.



Figs. 42-44: Habitus. 42 - *Siraneostichus vignai violaceus*, 43 - *S. puetzi*, 44 - *S. haeckeli*.



Figs. 45-47: Habitus. 45 - *Aristochroa militaris*. 46 - *Trigonognatha kutsheraei*. 47 - *T. schuetzei*.



**Figs. 48-50:** Habitus. 48 - *Trigonognatha straneoii*, 49 - *T. latibasis*, 50 - *T. cordicollis*.



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Figs. 51-53: Habitus. 51 - *Aristochroodes reginae orientalis*. 52 - *Stomis exilis*. 53 - *S. deuvei shaanxianus*.