

New Chinese species of six Leiodinae genera (Coleoptera: Leiodidae) with keys to the identification the Leiodinae tribes, relevant genera and species

Zdeněk ŠVEC¹ & Tao ZHANG²

¹Kamenická 4, 170 00 Praha 7, Czech Republic
e-mail: zd.svec@volny.cz

²Xiao-Zhaizigou National Nature Reserve, No. 11, Wenchuan Road, Yongchang Town,
Beichuan Qiang Autonomous County, Mianyang City, Sichuan, P. R. China

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Abstract. *Leiodes konvickai*, *Liocyrtusa flava*, *Zeadolopus kabateki*, *Pseudocolenis chinensis*, *Pseudocolenis viktorai*, *Anisotoma brevis* and *Decuria pepeon* spp. nov. from the People's Republic of China (Sichuan) are described and compared with similar species. *Leiodes simillima* Švec, 2015 is recorded from Sichuan for the first time. The image of the spermatheca of *Anisotoma dundai* Angelini & Švec, 1994 is presented for the first time. The key to the identification of all the Leiodinae tribes, the relevant genera and to *Liocyrtusa*, *Zeadolopus*, *Anisotoma* and *Decuria* species known from China and an overview of the Chinese *Pseudocolenis* species are presented. The first discovery of *Cyrtusa andreasii* Angelini & Švec, 2000 since the date of the original description is recorded.

INTRODUCTION

The subfamily Leiodinae comprises altogether six tribes. Five of them were recorded from the People's Republic of China. Of the 63 known genera of the subfamily Leiodinae 14 genera have been found in China up to now, including *Decuria* newly recorded for the region in the present paper. They are *Hydnobius* Schmidt, 1841; *Cyrtusa* Erichson, 1842; *Leiodes* Latreille, 1798; *Liocyrtusa* Daffner, 1982; *Zeadolopus* Broun, 1903; *Colenisia* Fauvel, 1903; *Dermatohomoeus* Hlisenkovský, 1963; *Pseudocolenis* Reitter, 1884; *Agathidium* Panzer, 1797; *Anisotoma* Panzer, 1797; *Cyrtoplastus* Reitter, 1885; *Decuria* Miller & Wheeler, 2004; *Stetholiodes* Fall, 1910 and *Creagrophorus* Matthews, 1888. The occurrence of three other genera - *Afroagathidium* Angelini & Peck, 1984; *Liodopria* Reitter, 1909 and *Besuchetionella* Peck & Angelini, 2000 can be expected in China. That is why the genera are included in the key to the identification presented below.

This paper brings descriptions of seven Chinese Leiodinae species new to science. All of them come from the Sichuan province. The new species belong to the genera *Leiodes*, *Liocyrtusa*, *Zeadolopus*, *Pseudocolenis*, *Anisotoma* and *Decuria*. The presence of the genus *Cyrtusa* in China is confirmed in this paper.

Altogether 13 species of the genus *Cyrtusa* are known worldwide at present. Only one species of the genus was described from China. The first find of *Cyrtusa andreasii* Angelini & Švec, 2000 is recorded from Sichuan for the first time since the original description.

The genus *Leiodes* contains 254 species worldwide, among them 52 species in China including the one species new to science described in the present paper. Beside the new

species *Leiodes simillima* Švec, 2015 was also discovered in the examined material. This species is recorded for Sichuan for the first time. The addition of the key to Chinese species presented by Cooter & Švec (2015) is given below.

Liocyrtusa comprises 14 known species including the new one described in the present paper. Only two of them were discovered in China. The key to the identification of both Chinese species is presented below.

The genus *Zeadolopus* is a genus belonging to the leiodinae genera rich in species. It comprises 95 known species including the new one described in the present paper. The species are morphologically uniform and very similar one to another not only in their external characters but also in the shape of the genitalia. Therefore, the assessment of the male genitalia, especially the shape of parameres and the endophallus is necessary for their identification. The members of the genus are distributed worldwide. They are known from the Nearctic, Neotropical, Palaearctic, Afrotropical, Oriental and Australian Regions. The majority of the species is known from the New World. Within the Asian region the richest country regarding the amount of *Zeadolopus* is India. According to the present knowledge, only three *Zeadolopus* species are known to occur in China up to now counting also the new species described in this paper. In fact, more species can be expected to be discovered in China. The examined material from Sichuan included also one more undetermined *Zeadolopus* species. The species is not described in this paper as only the females were found. As the female genitalia are of the same type and frequently of the same shape, the mentioned specimens were not fit to be described due to their sex. The key to the identification of the Chinese *Zeadolopus* known up to now is given below.

For the central area of the *Pseudocolenis* species distribution can be considered China, especially the province Yunnan. Among 56 known *Pseudocolenis* species the majority, altogether 32 species are known from China including those two species new to science described in this paper. Although many morphologic characters are detectable in the species of the genus, among them the absence or presence of the elytral strigosity, its density, the structure of the male antennae and the shape of the mesoventrite, the amount of the species and their similarity make their identification difficult. In order to simplify the identification, informal species groups and the subgroups using the external characters mentioned above were defined by Švec (2009). The best way of the reliable identification is based on comparing the shapes of males and females genitalia including the shapes of endophallic structures, although similar shapes of aedeagus and mainly spermatheca occur in habitually similar species. Therefore, no key but an overview of the Chinese species is presented below.

Altogether 58 species of the genus *Anisotoma* have been discovered in the Palaearctic, the Nearctic and North of the Neotropical Regions. Ninth species is known from China including the new species described in the present paper. The key to the Chinese species is presented below. The image of the spermatheca of *A. dundai* Angelini & Švec, 1994 is published, based on the new Chinese material, in the present paper for the first time as the females were not known at the time of the original description.

Decuria Miller & Wheeler, 2004 belongs to the less known leiodid genera with unusual area of distribution. Only two species were known up to now. The first of them is known to occur in Central and Southern America (Mexico, Costa Rica, Bolivia), the second one in

South-East of Asia (Taiwan, Korea, Japan). The species described in the present paper as a new to science is the third taxon in the genus, the second Asian species and the new genus and species known from continental China and from Russia.

MATERIAL AND METHODS

This paper is based on the material collected in China, Sichuan by the Czech entomologists Petr Kabátek (Praha), Ondřej Konvička (Zlín) a Petr Viktora (Kutná Hora). All the specimens mentioned in the present paper were captured using flight-intercept traps in China, Sichuan province, Xiao-Zhaizi National Nature Reserve (Fig. 1) within the scientific research implemented with the kind permission of relevant local authorities. The type locality is shown in Fig. 2.

Abbreviations:

China Continental part of the People's Republic of China;

NMPC National Museum, Praha, Czech Republic;

OKZC private collection, Ondřej Konvička, Zlín, Czech Republic;

ZSPC private collection, Zdeněk Švec, Praha, Czech Republic.

The material examined was compared with the type and other leiodid material deposited in ZSPC and in NMPC.

Collecting data cited in quotation marks are taken from the locality labels accompanying the examined examples. The individual lines from the original locality labels are separated by a slash; the individual labels are separated by double slash in this work. Each holotype or paratype is indicated by a red label bearing the status of the specimen (holotypus or paratypus respectively) name of the species, the name of the authors, year of the designation of the types (2020). The red label is attached to the same pin as the relevant specimen. The holotype labels are initialled by the senior author.

The specimens had been relaxed in 4% acetic acid first, then rinsed in water and dissected in a drop of water. The both male and female genitalia were mounted in polyvinylpyrrolidone (Lompe 1986) on a transparent label or on the same label as the relevant specimen; added to the same pin as the dissected specimen or directly on the label near the relevant specimen.

The descriptions are based on the holotypes. The variability is mentioned in the paragraph "Variability" if necessary and includes features exhibited by the paratypes. Important characters of the sexual dimorphism are also included in the mentioned paragraph. Those characters that seem to be usual in the relevant genus, e.g. presence of short recumbent setae in dorsal punctures, micro-sculpture of venter, setosity on antennae, legs and venter etc. are not mentioned in the descriptions.

The measurements of the total body length were taken from all specimens examined. Specific measurements of the individual body parts were taken from the holotypes only except of the data about the variation. The measurements of morphologic body parts were measured to the first decimal place of millimetre, the measurements of the genitalia were measured to the second decimal place of millimetre.

The examined material was determined by the first author. The types have been deposited in ZSPC and OKZC.

Abbreviations of body parts and measurements:

AVII-AXI antennomeres VII-XI.

Remark: as the species of the genus *Zeadolopus* exhibit only 10 visible antennomeres due to strongly reduced and therefore completely hidden AVIII, only the visible antennal segments are counted in the ratios of length, width etc. that are presented in the descriptions. The counting concerning the genus *Decuria* Miller & Wheeler, 2004 is similar as the antenna of the species possesses only ten antennomeres.

TI-TV tarsomeres I-V.

L Length.

W Width.

L/W or W/L Ratio between measurements.

Terminology:

- coxal lines = line resembling very open letter V with tip located centrally on metavetrite just above its posterior margin with branches running latero-anteriorly;
- elytral formula = number of large fovea at lateral margin of elytra in *Zeadolopus* (first number) and following smaller punctures located posteriorly (second number); e.g. 4-3 in majority of specimens *Z. kabateki* sp. nov.,
- endophallus = sclerite or sclerites or other structures inside tegmen detectable in transmitted light;
- mesoventral carina = longitudinal carina centrally on mesoventrite;
- mesoventral rest = transverse flat moderately long and broad carina forming anterior part of mesoventrite;
- metavetrite formula = number of fovea anteriorly just behind mid-coxae (first number), number of fovea approximately at middle of metavetrite length (second number) and number of fovea located posteriorly just above hind coxae (third number) in *Zeadolopus*; e.g. 4-1-2 in *Z. kabateki* sp. nov.
- punctured stria = longitudinal row of punctures on elytra (this term is alternatively used for the expression: punctured stria in the present paper because both terms - stria and row of punctures - mean the same structures; various authors use the mentioned expressions for deepened or not deepened elytral stria equipped by punctures and also for longitudinally seriate rows of punctures. In case of the deepened striae this fact is mentioned in the text of the present paper.);
- supraocular carina = antero-lateral raised marginal bead of head (e.g. Angelini 2004), i.e. carina at antero-lateral margin of head running from clypeus just along eyes caudally;
- tarsal formula = number of tarsomeres on anterior- mid- and posterior tarsi; e.g. 4-4-4 in *Decuria pepeon* sp. nov.
- tegmen or median lobe = median lobe of aedeagus.



Figs. 1-2. Xiao-Zhaizi National Nature Reserve: 1- entrance in the nature reserve; 2- type locality. Both images: photo by O. Konvička.

The classification of the species groups and subgroups in *Pseudcolenis* follows that in Švec (2009). The classification of the mesoventral carina in *Leiodes* follows that in Švec (2008).

DESCRIPTIONS, KEYS AND FAUNISTICS

The key to the identification of Chinese Leiodinae tribes and genera (number with abbreviation sp. means the quantity of species known from China)

- 1 Tarsal formula different than 3-3-3. First visible abdominal ventrite without oblique lines or at most with medial longitudinal carina. 2
- Tarsal formula 3-3-3 in both sexes. First visible abdominal ventrite with oblique roof-like line.
..... Scotocryptini
..... Shortly oval, strongly convex, short legs, stout tarsi, aedeagus with strongly reduced paramere. 1 sp.
..... *Creagrophorus* Matthews, 1888
- 2(1) Tibiae oval or flattened, not angular on cross-section, without any longitudinal carina. At least lateral margin and apex of tibia with distinct spines namely on mid-tibiae. 3
- Tibiae angular in cross-section bearing on all along their length usually two low longitudinal carina or ribs equipped by short stiff strong seta. Spines on tibiae, if present, unobtrusive, located on apex.
..... Agathidiini
- a Antenna 11-segmented. b
- Antenna 10-segmented. 1 sp. *Decuria* Miller & Wheeler, 2004
- b(a) Head widened behind eyes or parallel-sided or moderately narrowed, not distinctly constricted. c
- Head abruptly constricted behind eyes forming distinctive angle. 7 spp.
..... *Cyrtoplastus* Reitter, 1885
- c(b) Antennal club 5- or 4-segmented. d
- Antennal club usually 3 segmented sometimes with feebly dilated 7th antennomere. f
- d(c) Antennal club 5-segmented. e
- Antennal club 4-segmented (occurrence of the genus presumable).
..... (*Afroagathidium* Angelini & Peck, 1984)
- e(d) Anterior outline of clypeus protuberant. Head without supraocular carina. Posterior pronotal angles well developed, distinct in dorsal and lateral view. 9 spp. *Anisotoma* Panzer, 1797
- Anterior outline of clypeus narrowly but deeply emarginate, not protuberant. Head with supraocular carina. Posterior pronotal angles indistinct in dorsal and lateral view. (Occurrence of the genus presumable). (*Besuchetionella* Peck & Angelini, 2000)
- f(c) Antennomeres VI-X symmetric or some of them at most very feebly asymmetric. Supraocular carina present. Anterior margin of clypeus emarginate, straight or slightly convex. g
- At least antennomeres AIV-AIX or also AX strongly asymmetric with antero-median extension. Supraocular carina absent. Anterior margin of clypeus protuberant (occurrence of the genus presumable). (*Liadopria* Reitter, 1909)
- g(f) Elytra oblong oval almost cylindrical with distinct rows of punctures. Posterior pronotal angles very broadly rounded in dorsal view. 4 spp. *Stethliodes* Fall, 1910
- Elytra very shortly oval or of almost circular outline without distinct punctured elytral rows. Posterior pronotal angles not detectable at least in dorsal view, base continues to lateral sides without any angle. 154 spp. *Agathidium* Panzer, 1797;
- 3(2) Tarsal formula 5-5-5. Sogdini
- Pronotal base distinctly margined. Epipleura without erect seta. 1 sp. *Hydnobius* Schmidt, 1841;
- Tarsal formula different. 4

- 4(3) Anterior tibiae with apical spines only, mid- and hind tibiae narrow at most with several weak spines laterally and apically. Labrum not emarginate. Pseudoliadini
- a Mesoventrite with bump between mid-coxae or with carina anteriorly not reaching mesoventral rest.
- Mesoventrite with longitudinal central carina anteriorly connecting posterior margin of mesoventral rest anteriorly. 16 spp. *Colenisia* Fauvel, 1903
- b(a) Mesoventrite with bump between mid-coxae or carina not reaching mesoventral rest. Mesoventrite not excavated between longitudinal carina and mesoventral rest. 30 spp. *Pseudocolenis* Reitter, 1884
- Mesoventrite deeply excavated between longitudinal carina a mesoventral rest. 9 spp. *Dermatohomoeus* Hlisenkovský, 1963
- All tibiae distinctly strongly spinose at least laterally and apically. Tibiae frequently extended or even obtusively widened. Labrum strongly emarginate, therefore bilobed anteriorly. Leiodini
- a Antennal club 5-segmented even if AVIII sometimes very short nevertheless recognizable between AVII and AIX. b
- Antennal club compact, 4-segmented, 8th antennomere entirely hidden therefore antenna seemingly 10-segmented. c
- b(a) AVIII very short and narrow but recognizable. Clypeal line missing, mesoventrite without longitudinal carina. 2 spp. *Liocyrtusa* Daffner, 1982
- AVIII smaller than other club antennomeres, but well visible. Clypeal line present. Mesoventrite with longitudinal carina. 52 spp. *Leiodes* Latreille, 1798
- c(a) Tibiae of normal shape, narrow. Posterior tibia with several apical spines. 1 sp. *Cyrtusa* Erichson, 1942
- Mid- and posterior tibiae obtusively enlarged, strongly spinose at least laterally and apically. *Zeadolopus* Broun, 1903

Leiodini Fleming, 1821

Cyrtusa andreasi Angelini & Švec, 2000

Examined material: 1 ♂: "CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT", (ZSPC).

Remarks. First discovery of the species since the date of the original description.

Leiodes simillima Švec, 2014

Examined material: 4 ♂♂, 7 ♀♀: "CHINA: Sichuan/ province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT", (ZSPC, OKZC).

Distribution: China (Yunnan, Sichuan). New record for Sichuan.

Leiodes konvickai sp. nov.

(Figs. 3, 4)

Type material. Holotype (♂): "CHINA: Sichuan/ province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT", (ZSPC). Paratypes: (2 ♀♀): the same data, (ZSPC, OKZC).

Description. Length 2.9 mm. Length of body parts in holotype: head 0.3 mm, pronotum 0.7 mm, elytra 1.9 mm, antenna 0.9 mm, aedeagus 0.92 mm. Maximum width of body parts in holotype: head 0.8 mm, pronotum 1.4 mm at base, elytra 1.6 at half of their length. Dorsum without transverse strigosities or micro-sculpture except of punctuation. Oval (Fig. 3), head and pronotum dark brown, elytra chest-nut coloured. Antennomeres AI-AVI reddish, AVII-AXI brown. Legs red-brown. Venter chest-nut coloured, margins of coxal cavities, trochanters and longitudinal mesoventral carina darker.

Head. Dorsal surface with distinct, irregularly distributed, punctures separated by 1-4 times their own diameters, rare some micro-punctures interposed. Vertex with 4 large punctures. Last antennomere as broad as long, distinctly narrower than previous one. AVIII short, well visible between the neighbours. Ratio of length of antennomeres AII-AXI (AII=1.0): 1.0-1.3-0.6-0.6-0.6-1.0-0.4-1.1-1.2-1.8. Ratio of width of antennomeres AII-AXI (AII=1.0): 1.0-1.0-0.8-1.0-1.0-2.3-1.7-3.3-3.3-3.0. W/L AII-AXI: 0.6-0.5-0.8-1.0-1.0-1.4-2.5-1.8-1.7-1.0.

Pronotum. Widest at base. Sides very flatly roundly tapered toward anterior angles in dorsal view; flatly round in lateral view. Posterior angles feebly acute broadly rounded in dorsal view; obtuse, rounded in lateral view. Base almost straight feebly bowed backward. Punctuation distinct but irregular, punctures separated by about 4-6 times their own diameter. With large punctures behind anterior margin and with pre-basal punctures aligned transversally.

Elytra. With nine very distinctly densely punctured striae. Stria 9 short, parallel, distant from lateral margin by about 2 times its punctures diameter, joining lateral channel approximately at basal quarter of elytral length. Punctured striae deepened. Strial punctures well expressed, separated predominantly by about 0.5 times their own diameter longitudinally. Interval punctures fine and small, separated by about 4-6 times their diameters, tending to seriate close to each primary stria. Numerous micro-punctures interposed. Sparse large punctures in odd intervals as large as strial punctures. Sutural stria deepened all along its length, reaching approximately anterior third of elytral length continuing as row of punctures. Lateral channel without larger punctures or foveae. Epipleura with several short setae on apical half. Elytral margins and apex with few erect setae. Lateral elytral channels narrow, not simultaneously visible in dorsal view on along their entire length.

Legs. Anterior tibiae slim, inner terminal thorn of anterior tibia straight with simple tip, longer than lateral one. Tarsomeres TI-TIV of anterior and mid-legs distinctly widened with long and dense tennent setae. Meso-tibiae of usual size and shape, a little wider than anterior tibiae. Hind margin of metafemur without any tooth or other specific character. Hind tibiae distinctly simply bent. TI-TIII of posterior tarsi conically widened apically.

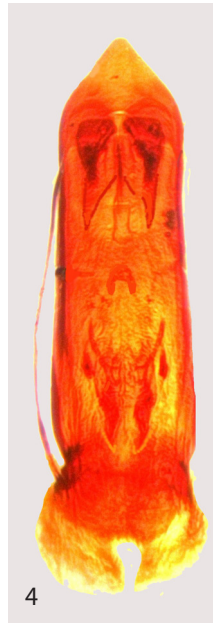
Mesoventrite. Longitudinal carina of type B.

Membranous wings developed.

Metaventrite. Longitudinally depressed in middle on posterior half. Depression surrounded circularly by coarse punctures bearing long erect light setae.

Genitalia. Aedeagus as in Fig. 4. Each paramere with one apical and one preapical seta.

Variability. Female tarsomeres slim, hind tibiae straight. Antenna almost unicoloured with slightly infusate club on its lateral side in one of the paratypes.



Figs. 3-4. *Leiodes konvickai* sp. nov., holotype: 3- body, dorsal view; 4- aedeagus.

Differential diagnosis. *Leiodes konvickai* sp. nov. is similar to *L. sexpunctata* Cooter & Švec, 2015 and *L. dashennongjiaensis* Cooter & Švec, 2015 in the shape and colour of the dorsum, the same type of mesoventral carina, double punctured dorsum, narrow AXI, to *L. sexpunctata* also by the similar shape of the tegmen. *L. konvickai* differs from *L. sexpunctata* by distinctly punctured pronotum by broadly rounded posterior pronotal angles and round outline of lateral pronotal margins. Also the shape of the endophallus is different, specific. The new species differs from *L. dashennongjiaensis* by the absence of micro-reticulation on its dorsum and also by the ninth elytral stria parallel and approached to lateral channel while the ninth stria is oblique and well separated from the lateral channel in *L. dashennongjiaensis*. The tegmen of *L. konvickai* is not emarginate before tip in contrast to tegmen in *L. dashennongjiaensis*.

The key to the identification of Chinese *Leiodes* species were presented by Cooter & Švec (2015). It can be partly modified by including the species new to science as follows:

- 53(44) All elytral intervals with punctures of two different sizes plus the usual large punctures scattered in odd intervals.54
- All elytral intervals with punctures of one size plus the usual large punctures scattered in odd intervals. 56
- 54(53) Head with two pairs of large punctures on vertex. Elytra without, or with weak micro-reticulation.55
- Head with a variable number of large puncture on vertex, often asymmetrically arranged either side of centre. Lateral margins of pronotum straight from base to anterior fifth, then roundly tapered to anterior margin in dorsal view. Elytra with distinct micro-reticulation. Tegmen shallowly emarginate before tightly rounded apex. 2.8-3.0 mm. China (Shaanxi, Sichuan).*Leiodes sexpunctata* Cooter & Švec 2015

- 55(54) Lateral margins of pronotum roundly tapered from hind angles anteriorly in dorsal view.
- a Elytra with feeble micro-reticulation. Ninth stria oblique and well separated from the lateral channel. Tegmen constricted before tightly rounded tip. Length 3.4 mm. China (Hubei).
.....*Leiodes dashennongjiaensis* Cooter & Švec 2015
 - b Elytra without any micro-reticulation. Ninth elytral stria parallel and approached to lateral channel. Tegmen not constricted before tightly rounded tip. Length 2.9 mm. China (Sichuan).
.....*L. konvickai* sp. nov.
- Lateral margins of pronotum straight from base to mid-length in dorsal view. Elytra without microsculpture. Tegmen constricted before broadly rounded apex (Fig. 82 in Angelini & Švec 1994). Length 3.4 mm. China (Sichuan).*L. alexandrae* Angelini & Švec, 1994

Etymology. The new species is dedicated to my entomological friend Ondřej Konvička, well known specialist in Tetratomidae and Melandryidae.

***Liocyrtusa flava* sp. nov.**

(Figs. 5, 6)

Type material. Holotype (♂): “CHINA: Sichuan / province, Xiao-Zhaizi/National Nature Reserve /7 km W of Qingpianxiang / Xiaozhaizi // 32° 01’25”N 103°56’21”E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT”, (ZSPC).

Description. Length 1.9 mm. Length of body parts: head 0.2 mm, pronotum 0.5 mm, elytra 1.2 mm, antenna 0.5 mm, aedeagus 0.51 mm. Maximum width of body parts: head 0.6 mm, pronotum 1.0 mm at base, elytra 1.1 mm approximately at anterior fourth. Oval (Fig. 5) dorsum yellowish. Venter yellowish red with darker metaventricle, margins of coxae and trochanters. Antennomeres yellowish, legs yellowish red. Whole dorsum without microsculpture, punctured.

Head. Dorsal surface with distinct punctures separated predominantly by 2 times their diameter. Ratio of L AVII:AXI (AVII=1.0): 1.0-0.3-1.0-1.0-1.3; W of AVII-AXI (AVII=1.0) = 1.0-0.7-1.5-1.6- 1.3; W/L AVII-AXI=1.0-2.3-1.5-1.6-1.0.

Pronotum. Widest at base. Base straight. Lateral sides roundly tapered anteriorly in dorsal and lateral view, posterior angles obtuse rounded in dorsal view, abruptly rounded in lateral view. Punctuation distinctly finer and sparser than that of head. Punctures separated by about 4-6 times their diameters. Micro-punctures rarely interposed.

Scutellum. Narrow, with several punctures as large as those on pronotum.

Elytra. Broadest at basal fourth. With only two simple and feebly expressed rows of punctures - one along suture and the next one. Rest of elytral surface with dense disordered punctures tending to seriate in some places. Punctures separated by about 2-3 times their diameters. Sutural stria shallow, deepened approximately to apical third, continuing by row of punctures. Lateral channel without strikingly large punctures.

Legs. Tarsy conically narrowed apically. Hind margin of meta-femur without any dens or tooth.

Membranous wings developed.

Metaventricle. Without specific characters.

Abdomen. Without specific characters.

Genitalia. Aedeagus as in Fig. 6. Parameres with short broad apical appendix and two apical setae. Female not known.



Figs. 5-6. *Liocyrtusa flava* sp. nov., holotype: 5- body, dorsal view; 6- aedeagus.

Differential diagnosis. *Liocyrtusa flava* sp. nov. can be compared to *L. onodai* Hoshina, 1998 from Japan. Both species are similar in the shape and colour of body and mainly in predominantly disorderly punctured elytra. *L. flava* differs by the seriate punctures located near suture and by the shape of parameres bearing low and wide appendix and by two distinct stiff apical setae.

Key to the Chinese species of *Liocyrtusa* Daffner, 1982

- 1 Dorsum and antennal club black. Parameral appendix longer than apical setae. 2.2-2.6 mm. China (Sichuan).*L. nigra* Angelini & Švec, 1995
- Dorsum including antenna unicoloured yellow. Parameral appendix short, much shorter than apical setae. 1.8 mm. China (Sichuan).*L. flava* sp. nov.

Etymology. The name of the new species should attract the attention to the light colour of the dorsum.

***Zeadolopus kabateki* sp. nov.**

(Figs. 7-11)

Type material. Holotype (♂): “CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve /7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT”, (ZSPC). Paratypes (5 ♀♀): the same data, (ZSPC, OKZC).

Description. Length of body 1.5-1.9 mm, in holotype 1.9 mm. Length of body parts of holotype: head 0.2 mm, pronotum 0.6 mm, elytra 1.1 mm, antenna 0.4 mm., aedeagus 0.43 mm; spermatheca 0.14 mm. Maximum width of body parts in holotype: head 0.6

mm, pronotum 1.0 mm, elytra 1.1 mm. Very short oval (Fig. 7), dorsum yellowish, base of pronotum and scutellum somewhat darker. Venter yellowish red with darker margins of coxa and trochanter. Antennomeres yellowish, legs yellowish red. Whole dorsum with micro-sculpture, punctured.

Head. Dorsal surface feebly micro-reticulate with distinct punctures separated by 1-2 times their diameters. Ratio of L AVII:AXI (AVII=1.0, AVIII hidden): 1.0-1.0-1.0-1.8; ratio of W AVII-AXI (AVII=1.0 AVIII hidden): 1.0-1.3-1.7-1.6, W/L AVII-AXI (AVIII hidden): 1.5-2.0-2.5-1.3.

Pronotum. Widest at base. Base slightly flatly concave before posterior angles. Lateral sides roundly tapered anteriorly in dorsal and lateral view, posterior angles acutely pointed in dorsal view, obtuse, broadly rounded in lateral view. Micro-reticulation distinct, stronger than that on head. Punctuation distinctly finer and sparser than that of head. Punctures separated by about 4-6 times of their diameters.

Scutellum. Narrow, with several punctures larger than those on pronotum.

Elytra. Broadest approximately at basal third. With distinct simple punctured striae. Discal striae (1st-5th) reach base. Lateral punctured striae 6-8th evanescent before elytral base. Ninth stria runs obliquely toward lateral channel merging lateral margin approximately at basal third of elytral length. Strial punctures arranged in longitudinal rows separated by about 1-2 of their diameters on disc, anteriorly, posteriorly and also laterally punctures becoming smaller and sparser. Punctures of intervals small, distinctly smaller and finer than those in rows. Interval punctures separated by about 6-10 or even more times their diameters. Several punctures almost as large as those in rows scattered in odd intervals. Sutural stria shallow, deepened approximately to apical third, continuing by row of punctures. Micro-reticulation fine but distinct. Lateral channel with four large foveae following by 3 much smaller punctures apically on one side of elytra (elytral formula 4-3). Formula of opposite side of elytra 4-1 (Fig. 8).

Legs. Hind margin of meta-femur with strong, long, bent teeth at apex in male (Fig. 10); broadly triangularly widened at distal third of metafemur length in female; mesofemur widened and spinose as is typical in *Zeadolopus*; without specific characters. TI-TV respectively TIV conically narrowed apically.

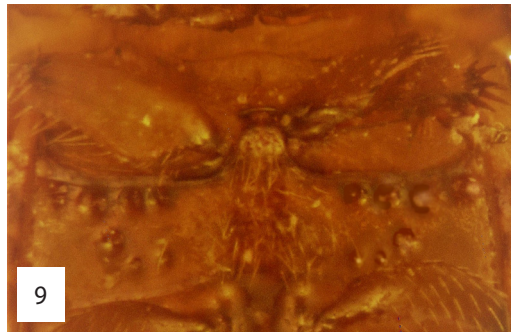
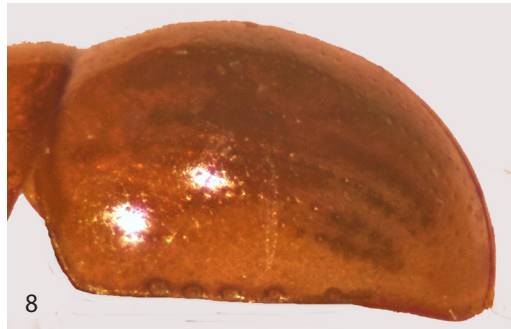
Membranous wings developed.

Metaventrite. Large foveal formula 4-1-2. It means: behind anterior margin with one row of four foveae, with one fovea approximately in middle between both anterior and posterior foveal rows and with 2 posterior foveae just before hind margin of metaventrite (as in Fig. 9).

Abdomen. First visible abdominal ventrite with a row of large foveae placed close to its anterior margin,

Genitalia. Aedeagus as in Fig. 11. Parameres with one very thin and short apical seta. Female genitalia not figured, as we found the shape of the spermatheca to be of no specific characters. Spermatheca composed of larger basal and smaller terminal both spherical parts adhering to each other.

Variability. One of the paratypes differs from the others in the number of the mesoventral foveae having metaventral formula 4-1-3 on one side of metaventrite, 4-2-3 on the other



Figs. 7-11. *Zeadolopus kabateki* sp. nov., holotype: 7- body, dorsal view; 8- elytra, lateral view; 9- metaventricle; 10- hind leg; 11- aedeagus.

side. The number of elytral lateral foveae is also a little different from the others in the same paratype: elytral formula = 3-3.

Differential diagnosis. *Zeadolopus kabateki* sp. nov. is most similar to *Z. similis* Cooter & Švec, 2002 from Indonesia (Sulawesi) in size of the body, colouring of the dorsum and the

appendages, and the dorsal elytral structure. The new species differs from the mentioned species and also from the other Asian and Australian species by the combination the following characters: the elytral and the metaventral formula, by the antennomere XI almost as wide as antennomere X, by the cylindrical broadly rounded parameres at their apex and by the specific shape of the endophallus.

Key to the identification of the Chinese species of the genus *Zeadolopus*, Broun, 1903

- 1 Metaventricle bears several large obtusive fovea.2
- Metaventricle without any fovea, punctured. Punctures of elytral striae become smaller anteriorly, elytral striae anterad evanescent. 1.5 mm. China (Hebei), Japan (Ryukyu Islands). *Z. sinensis* Portevin, 1942
- 2(1) Last antennomere distinctly narrower than AX, AX:AXI = 1.3. Tegmen narrowed apically, parameres widened, obliquely truncated at apex. 1.5-1.8 mm. China (Yunnan). *Z. foveolatus* Švec & Cooter, 2012
- Last antennomere almost as wide as AX. AX:AXI=1.1. Tegmen widened apically, parameres equally cylindrical, broadly rounded at apex (Fig. 11). 1.5-1.9 mm. China (Sichuan). *Z. kabateki* sp. nov.

Remark. According to Daffner (1983) the deposition of *Z. sinensis* (Portevin, 1942), that was originally described as *Cyrtusa sinensis*, has not been found. Later Hisamatsu (1985) recorded in few words the occurrence of the species in Japan. The record was based on a finding of a single female determined according to information provided by the original description. Hisamatsu (1985) also transferred the species to the genus *Zeadolopus*. So all the known morphological characters of the species are still known from the original description only. The original description is as follows: “Rubro-brunne, nitida, tenuissime et sat sparsim punctulata; elytra striis, minutis punctis formalis, antice evanescentibus minuta; pedes curti, lati, spinosissimi, tarsi curtis; antennarum clava spissa, subovalis; subterno metasterno punctati. Long 1.5 mm. Communiqué par R.P. Licent.”

Etymology. The new species is dedicated to one of the collectors, the specialist in Cerambycidae, my friend Petr Kabátek.

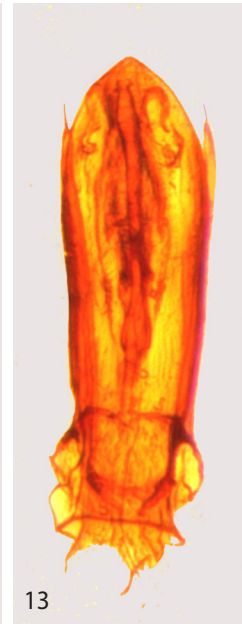
Pseudoliodini Portevin, 1926

***Pseudocolenis chinensis* sp. nov.**

(Figs. 12-13)

Type material. Holotype (♂): “CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve /7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT”, (ZSPC).

Description. Length of body 2.4 mm, head 0.2 mm, pronotum 0.6 mm, elytra 1.6 mm, antenna 0.8 mm aedeagus 0.55 mm. Maximum width of head 0.7 mm, pronotum 1.4 mm at base, elytra 1.6 mm at anterior fourth of elytral length. Short oval (as in Fig. 12), dark chestnut, pronotal margins and clypeus lighter; antennomeres AI-AVI yellow-red, AVII-XI brown, AXI a little lighter toward apex. Ventral surface yellow-brown. Dorsal surface entirely micro-sculptured by transverse strigosity. Elytral strigosity very sparse, AVII a little broader than other club antennomeres (species group *grandis* subgroup I).



Figs. 12-13. *Pseudocolenis chinensis* sp. nov., holotype: 12- body, dorsal view; 13- aedeagus.

Head. With punctures distinct, dense, irregularly distributed, separated predominantly by 2-3 times their own diameter. Transverse strigosity fine and dense. Antennal club 5-segmented with segment VII a little broader than all other antennomeres. Relative length of antennomeres AII-AXI (AII = 1.0): 1.0-1.0-0.7-0.5-0.6-1.1-0.6-0.9-1.0-1.5. Relative width of antennomeres AII-AXI (AII = 1.0): 1.0-1.0-1.0-1.5-1.8-2.5-1.8-2.0-2.2-2.0. Width of club antennomeres AVII-AXI (AVII=1): 1.0- 0.7- 0.8-0.9-0.8. Width : length ratios of AII-AXI = 0.6-0.6-0.8-1.8-1.8-1.3-1.8-1.2-1.2-0.7.

Pronotum. With much finer micro-sculpture than on head; strigosites of the same density as on head. With fine sparse punctures separated by about 10 or more times their own diameter. Posterior angles acute, very closely rounded on tip in dorsal view; rectangular with very closely rounded tip in lateral view.

Elytra. With very sparse strigosites separated predominantly by about 0.03 mm. With two feeble rows of small punctures near suture; rest of elytra predominantly irregularly punctured with punctures separated by about 2-4 times of their diameter. Punctures tend to seriate in some places in irregular unobtrusive rows. Elytral intervals with feeble punctures similar to those in primary rows. Deepened sutural stria extending approximately to elytral basal fifth.

Legs. Tibiae slim, TI-TIII of anterior tarsi very slightly widened.

Mesoventrite. Mesoventral bump of type A.

Membranous wings developed.

Genitalia. Aedeagus as in Fig. 13. Parameres with two apical setae. Female unknown.

Differential diagnosis. *Pseudocolenis chinensis* sp. nov. is very similar to *P. strigicollis* Švec, 2009 from China (Yunnan), both belonging to the species group *grandis* subgroup I. This subgroup of species contains further *P. picea* (Hisamatsu, 1964); *P. sinica* Angelini & Švec, 2000; *P. indica* (Portevin, 1926); *P. grandis* (Portevin, 1905); *P. lenka* Švec, 2002; *P. shannae* Angelini & Švec, 2000, *P. yunnanica* Švec, 2009, *P. michaeli* Švec, 2009, *P. fortepunctata* Švec, 2009 and *P. viktorai* sp.nov. *P. chinensis* and *P. strigicollis* differs from the other species of the subgroup by the same density of pronotal strigosity as on head while strigosities on pronotum are distinctly denser than on head in the other species of the mentioned subgroup. *P. chinensis* differs from *P. strigicollis* by the broad oval shape of body that is oblong oval in *P. strigicollis*; the new species also differs by predominantly irregularly punctured elytra while punctures are lined up in *P. strigicollis*. The shape of the aedeagus is similar in both species. It differs by endophallus having a very long internal siphon that is swollen apically in *P. chinensis*. The shape of the aedeagus of the new species is extremely similar to *P. dilatata* Angelini & Švec, 2000. Both species can be distinctly differentiated by the density of elytral strigosity as elytral strigosity is extraordinary dense in *P. dilatata*.

Etymology. The name of the new species is derived from the name of the country of its origin.

***Pseudocolenis viktorai* sp. nov.**

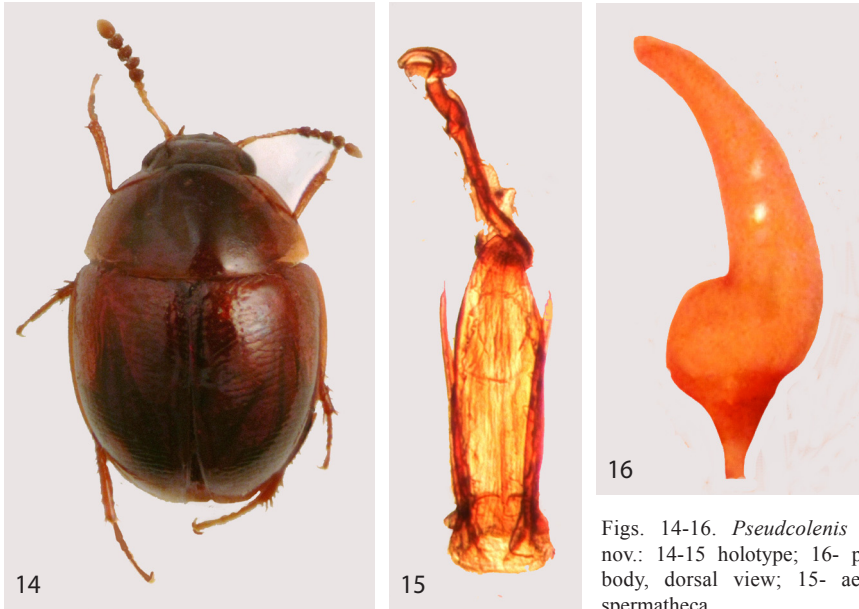
(Figs. 14-16)

Type material. Holotype (♂): "CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozhaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI. - / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT", (ZSPC). Paratypes (2 ♂♂, 4 ♀♀): the same data, (ZSPC, OKZC).

Description. Total length 2.1-2.5 mm, in holotype 2.1 mm. Maximum length of body parts in holotype: head 0.2 mm, pronotum 0.6 mm, elytra 1.3 mm, antenna 0.8 mm, aedeagus 0.61 mm; spermatheca 0.25 mm. Maximum width of head in holotype: 0.7 mm, pronotum 1.2 mm at base, elytra 1.4 mm at anterior third of elytral length. Short oval (as in Fig. 14), head and pronotal disc brown, lateral pronotal margins and elytra red-brown, legs yellow-red, antennomeres AI-AVI yellowish, AVII-AX brown, AXI yellow-red. Dorsal surface entirely micro-sculptured by transverse strigosity. Elytral strigosity very sparse, AVII as wide as rest of antennal club (species group *grandis* subgroup I).

Head. With punctures distinct irregularly distributed, separated predominantly by 2-4 times their own diameter, punctures smaller and sparser on frons. Antennal club 5-segmented with antennomere AII as broad as AVIII-AXI. Relative length of antennomeres AII-AXI (AII = 1.0): 1.0-1.0-0.6-0.6-0.8-0.7-0.7-0.7-0.8-1.3. Relative width of antennomeres AII-AXI (AII = 1.0): 1.0-0.8-0.8-1.2-1.4-2.4-2.4-2.4-2.4. Width of club antennomeres AVII-AXI (AVII=1): 1.0- 1.0-1.0-1.0-1.0. W/L ratios of AII-AXI = 0.4-0.3-0.6-0.9-1.0-1.2-1.5-1.5-1.2-0.8.

Pronotum. With much finer and much denser micro-sculpture than on head; strigosites hardly detectable in incident light under light microscope. With fine punctures separated by about 10 or more times their own diameter. Few larger punctures irregularly scattered on



Figs. 14-16. *Pseudocolenis viktorai* sp. nov.: 14-15 holotype; 16- paratype; 14- body, dorsal view; 15- aedeagus; 16- spermatheca.

pronotal surface. Posterior angles obtuse, closely rounded on tip in dorsal view; rectangular with closely rounded tip in lateral view.

Elytra. With very sparse strigosites separated predominantly by about 0.03-0.04 mm. With nine punctured striae; ninth stria evanescent before elytral apex. Median three striae possess distinct punctures separated by about 3 times their own diameter, stria punctures become smaller and sparser laterally. Elytral intervals with feeble punctures much smaller than those in primary rows. Deepened sutural stria extending approximately to elytral basal sixth.

Legs. Tibiae slim, TI-TIII of anterior tarsi very slightly widened.

Mesoventrite. Mesoventral bump of type A.

Membranous wings developed.

Genitalia. Aedeagus as in Fig. 15. Paramere with single preapical seta. Spermatheca as in Fig. 16.

Variation. Some of the paratypes possess discal elytral striae denser punctured than those in the holotype with punctures separated by about 1-2 times their own diameter. Antennae of one of the female paratypes light yellow-brown, completely unicoloured.

Differential diagnosis. *Pseudocolenis viktorai* sp. nov. belongs to the species group *grandis* subgroup I containing the taxa mentioned in the paragraph Differential diagnosis of *Pseudocolenis chinensis* sp. nov. *P. viktorai* sp. nov. is most similar to *P. yunnanica* by the shape of body and antenna, by the tegmen simply narrowed to shortly rounded tip and by the shortened paramere. Both species differ distinctly by the shape of aedeagal siphon that

is specifically curved apically in *P. viktorai*. Also the spermatheca is of a different shape in the both species.

Etymology. The new species is dedicated to one of its collectors, Petr Viktora, specialist in Cerambycidae.

A review of the Chinese species of the genus *Pseudocolenis*

	species	distribution*	type of mesoventral structure	absence (A) or presence and density* of elytral strigosities	7 th antennomere strikingly enlarged (L) or normal (N) in males	species group and subgroup (I or II) **
1	<i>P. atrobrunnea</i> Švec, 2016	CH (Yunan), LA	B	VS	N	sedlaceki I
2	<i>P. carinata</i> Švec, 2009	CH (Yunan)	B	D	L	sedlaceki II
3	<i>P. crassicornis</i> Švec, 2009	CH (Yunan)	B	D	L	sedlaceki II
4	<i>P. laticornis</i> Angelini et Švec, 2000	CH (Hubei, Shaanxi, Yunnan)	A	A	N	bouvieri I
5	<i>P. neglecta</i> Angelini et Švec, 2000	CH (Hubei, Sichuan, Yunnan)	A	A	N	bouvieri I
6	<i>P. simplicornis</i> Švec, 2016	CH (Yunan)	A	A***	N	bouvieri I
7	<i>P. antennata</i> Švec, 2014	CH (Yunan)	A	A	L	bouvieri II
8	<i>P. appendiculata</i> Švec, 2014	CH (Yunnan)	A	VS	N	grandis I
9	<i>P. chinensis</i> sp.nov.	CH (Sichuan)	A	VS	N	grandis I
10	<i>P. curvipes</i> Švec, 2014	CH (Yunnan)	A	VS	N	grandis I
11	<i>P. fortepunctata</i> Švec, 2009	CH (Yunnan)	A	VS	N	grandis I
12	<i>P. michaeli</i> Švec, 2009	CH (Yunnan)	A	VS	N	grandis I
13	<i>P. similis</i> Švec, 2014	CH (Yunnan)	A	VS	N	grandis I
14	<i>P. sinica</i> Angelini et Švec, 1995	CH (Yunnan)	A	VS	N	grandis I
15	<i>P. strigicollis</i> Švec, 2009	CH (Yunnan)	A	VS	N	grandis I
16	<i>P. torta</i> Švec, 2014	CH (Yunan)	A	VS	N	grandis I.
17	<i>P. viktorai</i> sp. nov.	CH (Sichuan)	A	VS	N	grandis I
18	<i>P. yunnanica</i> Švec, 2009	CH (Yunnan)	A	VS	N	grandis I
19	<i>P. lenka</i> Švec, 2002	CH (Hubei)	A	VS	L	P. grandis II
20	<i>P. shannae</i> Angelini et Švec, 2000	CH (Shaanxi, Hubei)	A	VS	L	P. grandis II
21	<i>P. parva</i> Švec, 2014	CH (Yunnan)	A	S	N	strigosa I

22	<i>P. strigosa</i> (Portevin, 1905)	TH, NE, IN (Sikkim, Darjeeling, Himachal Pradesh), CH (Shaanxi, Sichuan, Yunnan)	A	S	N	strigosa I
23	<i>P. disparilis</i> Champion, 1924	IN (Meghalaya, Kumaon - Uttar Pradesh, Dargeeling), NE, CH (Yunnan)	A	S	L	strigosa II
24	<i>P. schuelkei</i> Švec, 2002	CH (Sichuan, Yunnan)	A	S	L	strigosa II
25	<i>P. annulata</i> Švec, 2009	CH (Yunnan)	A	D	N	hilleri I
26	<i>P. hilleri</i> Reitter, 1884	CH (Fujian, Jilin, Shaanxi, Yunnan), JA (Shikoku), KO, FE (Chabarov. Kraj, Primor. Kraj), NE	A	D	N	hilleri I
27	<i>P. interposita</i> Švec, 2009	CH (Yunnan)	A	D	N	hilleri I
28	<i>P. acuminata</i> Švec, 2009	CH (Yunnan), IN (Uttarakhan), NE	A	D	L	hilleri II
29	<i>P. distincta</i> Švec, 2016.	CH (Yunnan)	A	D	L	hilleri II
30	<i>P. major</i> Švec, 2009	CH (Yunnan)	A	ED	N	rastrata I
31	<i>P. rastrata</i> Champion, 1923	IN, CH (Yunnan), NE	A	ED	N	rastrata I
32	<i>P. dilatata</i> Angelini et Švec, 2000	CH (Shaanxi, Sichuan, Hubei, Yunnan)	A	ED	L	rastrata II

Remarks.

* (VS) - very sparse: interval between strigosites (i): $i \geq 0.03$ mm; (S) - sparse: $0.01 < i \leq 0.02$ mm; (D) - dense: $i = 0.01$ mm; (ED) very or extremely dense (elytra sometimes opalescent): $i < 0.1$ mm

** - explanation of subgroups:

Subgroup I. - Antennomere VII of similar size as rest of antennal club approximately as large as AIX, AX in both sexes (exceptionally AVII a little broader than other segments - in *P. strigicollis* Švec, 2009).

Subgroup II - Antennomere VII strikingly enlarged in male; usually a little larger than AIX, X in female.

*** - elytra not strigose, only traces of several transverse strigosites on shoulders

Abbreviations: CH - China, IN - India, KO - Korea, LA - Laos, NE - Nepal, FE - Far East of Russia, TH - Thailand

Agathidiini Westwood, 1838

Anisotoma brevis sp. nov.

(Figs. 17-19)

Type material. Holotype (♂): "CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek / O. Konvička, P. Viktora / leg. FIT", (ZSPC).

Description. Length 2.1 mm. Length of body parts: head 0.2 mm, pronotum 0.6 mm, elytra 1.3 mm, antenna 0.7 mm, aedeagus 0.87 mm; maximum width of head 0.7 mm, pronotum 1.3 mm at posterior angles, elytra 1.5 mm approximately at anterior third. Very broadly oval. Shape of body as in Fig. 17.

Dorsum dark brown coloured, clypeal and pronotal margin and oblong oval spot on front and vertex lighter coloured, tibia red-brown, tarsi yellow-red, antennomeres AI-AV reddish, AVI-AXI brown. Ventral surface brown.

Head. Dorsal surface smooth without micro-sculpture, punctured. Punctuation strong distinct, irregular punctures separated by about 1-4 times their own diameter. Some micro-punctures interposed. Each lateral side of clypeus with depression. Antennomeres AV-AX asymmetric medio-apically protracted. Ratio of length of antennomeres II-XI (AII=1.0) = 1.0-1.1-0.6-0.5-0.5-0.8-0.3-0.8-0.9-2.1. Ratio of width of AII-AXI (AII=1.0): 1.0-0.8-1.0-1.0-1.3-2.0-1.8-2.7-2.8-2.8. W/L of AII-AXI = 0.6-0.5-1.0-1.2-1.6-1.5-3.7-2.0-1.9-0.8.

Pronotum. Broadest at very obtuse, acutely rounded posterior angles. Posterior and anterior pronotal angles well developed. Posterior angles very obtuse, acutely rounded in lateral view. Lateral outline broadly rounded dorsally seen, almost straight in lateral view. Base flatly evenly curved posterad, laterally skewed toward posterior angles. No micro-sculpture evident. Punctuation much sparser and finer than that on head. Punctures fine, small, separated by about 6-10 or more times their diameter. Some micro-punctures and several large punctures interposed.

Elytra. Broadest approximately at basal third. With eight complete rows of punctures; ninth row confluent with the elytral lateral channel. Rows of punctures getting feeble or even difficult recognizable laterally. Punctures separated by about 2 times their diameter in median 2 stria, becoming smaller and sparser laterally. Intervals between striae possess very fine and sparse punctures much smaller than those in rows separated by about 4-6 times their diameter. Some rare punctures as large as those in striae distributed in odd intervals. Sutural striae clearly impressed from apex to half of elytral length.

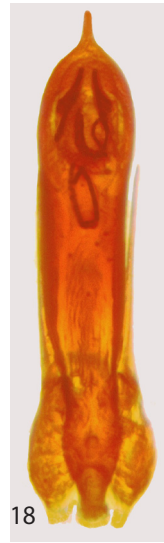
Membranous wings developed.

Metaventrite. Flat. Without specific characters.

Legs. Tarsal formula 5-5-4 in male, female not known. TI-TII of pro- and mesotarsi very slightly dilated in male. Posterior margins of metafemora simple, linear. All tibiae slim.

Genitalia. Aedeagus Figs. 18-19. Parameres shortened without any seta.

Differential diagnosis. *Anisotoma brevis* sp. nov. is can be compared to *A. pseudobecvari* Angelini & Švec, 1995 being similar in the body size, type of elytral punctured striae and



Figs. 17-19. *Anisotoma brevis* sp. nov., holotype: 20-*A. dundai* Angelini & Švec, 1994; 17- body, dorsal view; 18- aedeagus, dorsal view; 19- aedeagus, lateral view; 20- spermatheca.

in the shape of the tegmen protracted into long acute process apically. The new species differs by very feebly punctured elytral intervals while the interval punctures are only a little smaller and finer than those in rows in *A. pseudobecvari*. Moreover the new species differs by very short parameres extending approximately half of tegmen.

Etymology. The name should attract the attention to the shortly oval shape of the body (Lat. brevis = Engl. short).

***Anisotoma dundai* Angelini & Švec, 1994**
(Fig. 20)

Examined material: 4 ♂♂, 4 ♀♀: "CHINA: Sichuan / province, Xiao-Zhaizi / National Nature Reserve / 7 km W of Qingpianxiang / Xiaozaizi // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI.- / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora/ leg. FIT", (ZSPC, OKZC).

Remarks. Only the male of this species has been known. The image of the spermatheca is presented on Fig. 20 for the first time.



The key to Chinese *Anisotoma* species

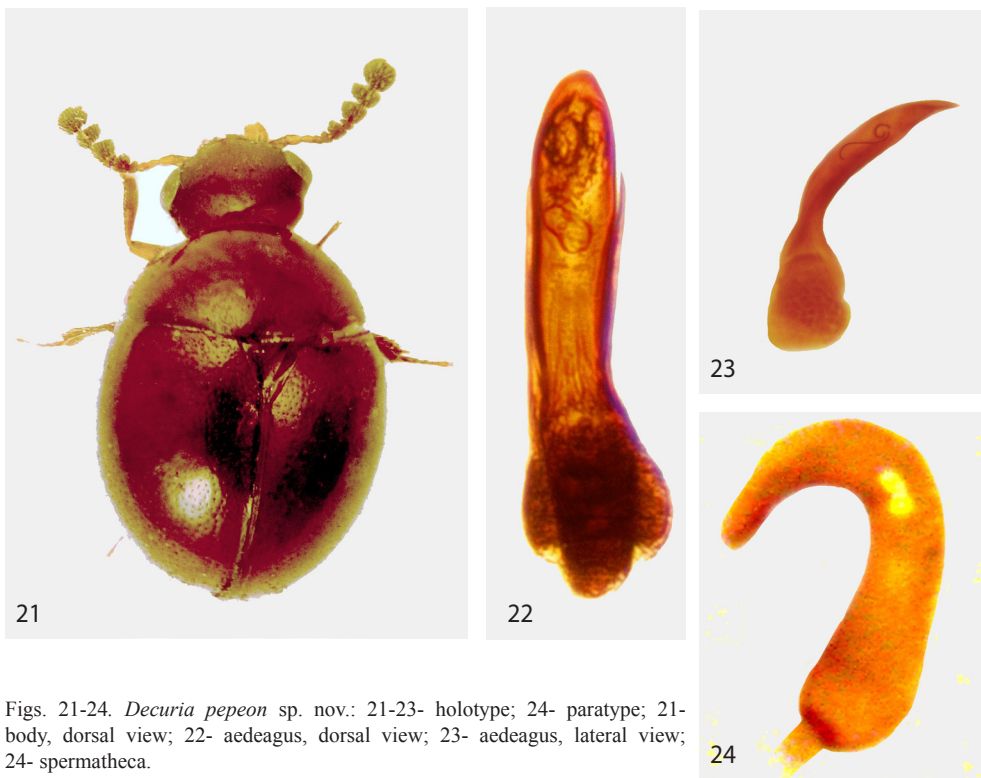
- 1 Dorsum distinctly bicoloured with red pronotum, black head and elytra. 2
 - Dorsum unicoloured or at most with very slight difference in colour intensity between elytra and pronotum. 3
- 2(1) Body large (4.2-4.3 mm). Tegmen emarginate apically, spermatheca slim, wavy. China (Sichuan, Yunnan). ...
 *A. schneideri* Angelini & Švec, 1994
 - Body small (2.1-2.4 mm). Tegmen pointed apically, basal part of spermatheca pear-shaped. China (Yunnan).
 *A. alesi* Švec, 2012
- 3(1) Elytra with simple or double punctured striae. Distinct interval punctuation sometimes makes elytral striae
 difficult to recognize in some species. 4
 - Elytra without punctured striae or at most with punctures tending to seriate in some places. Dorsum dark
 red-brown. Pronotum without any strigosity. Tegmen with pointed process apically; basal part of spermatheca
 pear-shaped. Length 2.5-3.1 mm. China (Sichuan, Yunnan). *A. pseudobecvari* Angelini & Švec, 1995
- 4(3) Elytra with eight complete striae, ninth stria partly confluent with lateral channel of elytra. Dorsum red-
 brown. 5
 - Elytra with ninth complete striae although not entirely regular. Distinct interval punctuation sometimes makes
 elytral striae difficult to recognize in some species. 7
- 5(4) Head and pronotum without micro-sculpture, at most with transversal strigosity on clypeus or indistinct
 transverse strigosity on head. Dorsum black. 6
 - Head and pronotum with micro-sculpture. Elytral rows of punctures double. Dorsum red-brown. Tegmen
 pointed apically. Spermatheca as in Fig. 20. Length 2.7 mm. China (Sichuan).
 *A. dundai* Angelini & Švec, 1994
- 6(3) Elytral intervals distinctly punctured by small punctures separated by about 4-5 times their diameter.
 Strigosity only on clypeus. Tegmen pointed on tip. Spermatheca J-shaped with slightly swollen basal part.
 Length 3.0-3.3 mm. China (Yunnan). *A. yunnanica* Angelini & Švec, 1995
 - Elytral intervals very sparse and feebly punctured. Strigosity indistinct on head. Tegmen deeply emarginate
 apically. Spermatheca with kinked basal part. Length 3.8 mm. Far East, Japan, Korea, China (Sichuan).
 *A. curta* (Portevin, 1927)
- 7(4) Body large 3.5-3.9 mm. Tegmen emarginate on apex. 8
 - Body smaller, 2.6-3.0 mm. Aedeagus pointed apically. China (Yunnan, Sichuan, Hubei).
 *A. becvari* Angelini & Švec, 1994
- 8(7) Clypeus with strigosity. Tegmen moderately emarginate on apex. Operculum pear-shaped. Parameres shorter
 than tegmen. Spermatheca S-shaped. Length 3.5 mm. China (Sichuan, Yunnan).
 *A. králi* Angelini & Švec, 1994
 - Head without any strigosity. Tegmen very deeply emarginate. Operculum broadly oval with apical notch.
 Length 3.9 mm. China (Yunnan). *A. nigra* Angelini & Švec, 1994

Decuria pepeon sp. nov.

(Figs. 21-24)

Type material. Holotype (♂): “CHINA: Sichuan / province, Xiao-Zhai/National Nature Reserve /7 km W of Qingpianxiang / Xiaozhai // 32° 01'25"N 103°56'21"E / 1560-1700 m, 27.VI. - / 1.VII.2017, P. Kabátek, / O. Konvička, P. Viktora / leg. FIT”, (ZSPC). Paratype (1 ♀): the same data; (1 ♀): “Ussuri - country m. / Ussurijsk, Kajmanovka / 1.-4.8. 1990 lgt. / D. Boukal”, (ZSPC).

Description. Length 1.8-1.9 mm, 1.9 mm in holotype. Length of body parts in holotype: head 0.4 mm, pronotum 0.5 mm, elytra 1.0 mm, antenna 0.6 mm, aedeagus 0.52 mm; spermatheca 0.14 mm; maximum width of head in holotype: 0.6 mm, pronotum 0.9 mm at posterior angles, elytra 1.1 mm approximately at basal third. Shape of body as in Fig 21. Dorsum chest-nut coloured, large area on clypeus, front and vertex red, lateral sides of front



Figs. 21-24. *Decuria pepeon* sp. nov.: 21-23- holotype; 24- paratype; 21- body, dorsal view; 22- aedeagus, dorsal view; 23- aedeagus, lateral view; 24- spermatheca.

near eyes black. Legs and antennomeres AI-AV chest-nut, AVI-AX brown-black. Ventral surface brown.

Head. Broadest at eyes. Clypeal line distinct, anterior clypeal margin feebly convex. Antennal club 5-segmented. Ratio of length of antennomeres II-X (AII=1.0) = 1.0-0.9-0.4-0.5-1.0-0.5-1.1-1.0-2.0. Ratio of width of AII-AX (AII=1.0): 1.0-0.7-0.7-0.8-1.8-1.5-2.3-3.0-3.3. W/L of AII-AX= 0.8-0.6-1.3-1.3-1.4-2.0-1.6-2.3-1.3. Dorsal surface of head smooth without micro-sculpture, punctured. Punctuation strong, dense, punctures separated by about 2 times their own diameter. Punctuation denser toward eyes.

Pronotum. Broadest at rounded posterior angles. Posterior and anterior pronotal angles well developed, rounded in lateral view, lateral outline broadly rounded dorsally seen, almost straight in lateral view. No micro-sculpture evident. Punctured. Punctuation much sparser and finer than that on head. Punctures fine, small, separated by about 4-6 times their diameter.

Elytra. Broadest approximately at basal third. With double puncturation. Punctures similar to those on head, separated by about 2-5 times their diameter. Some rare very small micro- punctures interposed. Sutural striae are clearly impressed from apex to half elytral length.

Membranous wings developed.

Metaventrite. Flat. Without specific characters.

Legs. Tarsal formula 4-4-4 in male and female. TI-TII of pro- and mesotarsi very slightly dilated in male. Posterior margins of metafemora simple, linear. All tibiae slim.

Genitalia. Aedeagus as in Figs. 22-23. Parameres without any seta. Operculum oblong oval. Spermatheca as in Fig. 24.

Variability. The length ratio of antennomeres AIII: AII varies in the range 0.8-0.9. Head is predominantly red coloured in the paratype from the Far East.

Etymology. The name of the new species reminds of all the collectors of the holotype as it is created using the abbreviations of their first names *Petr-Petr-Ondřej = pepeon*.

Differential diagnosis. *Decuria pepeon* sp. nov. is can be compared to *D. newtoni* Miller & Wheeler, 2004 known from Costa-Rica, Bolivia and Mexico, Both species are similar before all in the broadly rounded apex of the aedeagus. The external characters are also very similar in both species. The new species differs by smaller body (1.9 mm) from *D. newtoni* (2.0-2.4 mm), by large red spot on head, darkened elytral suture, strongly punctured head and namely by the absence of the metaventral fovea in male and by the shape of tegmen that is narrowed in the apical quarter toward broadly rounded apex in dorsal view while the sides of the tegmen are parallel-sided before apex in *D. newtoni*. Both species also differ one from another by parameres that are without terminal seta in the new species while the parameres bear one short terminal seta in *D. newtoni*.

Discussion. *Decuria kabateki* sp. nov. is the third known species of the genus. This outstanding genus seems to differ from other liodids by the strong morphological uniformity and also by the discontinued distribution of the known species. Despite the distances between the areas of the occurrence, all three species are extremely similar in the shape of body, appendages, colour, and also even in the shape of the genitalia.

The key to the *Decuria* Miller & Wheeler, 2004 species

- 1 Species from America. Head finely and sparsely punctured. Tegmen up to broadly rounded top parallel-sided. Parameres with one short inconspicuous seta. 2.0-2.4 mm. Costa-Rica, Bolivia, Mexico. *D. newtoni* Miller & Wheeler, 2004
- Species from Asia. Head strongly and densely punctured. Tegmen tapered toward top from level of the apex of parameres. 2
- 2(1) Head black, elytra brown. Lateral margin of pronotum rounded, anterior angle very broadly rounded, posterior angle indistinct in lateral view. Tegmen shortly rounded at apex. Parameres with two short inconspicuous setae. Operculum slightly emarginate apically. 1.7-2.0 mm, Taiwan, Korea, Japan. *D. smetanai* (Angelini & De Marzo, 1995)
- Head predominantly red or with large red spot on clypeus and frons. Lateral margin of pronotum straight, both anterior and posterior angles rounded but very distinct in lateral view. Tegmen broadly rounded apically. Parameres lacking setae. Operculum rounded apically. 1.9 mm. China (Sichuan), Far East of Russia. *D. pepeon* sp. nov.

The bionomics of the *Decuria* species is unknown - only the collecting circumstances were noticed. *Decuria smetanai* were collected in original broad-leaved forest around base

of a large tree and in the original coniferous forest in rotting bark, wood and various debris near base of a large tree in Taiwan. The specimens in Japan were collected in Malaise and flight intercept trap. The specimens of *D. pepeon* were also captured by flight intercept trap. Relatively largest amount of information about the collecting circumstance is available regarding *D. newtoni*. This species was found in puffball-like slime mould. Miller & Wheeler (2004) expressed their opinion that the slime mould could be a *Lycogala* species.

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