

## A review of *Pseudcolenis* Reitter, 1884 species (Coleoptera: Leiodidae: Leiodinae)

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**Taxonomy, description, Coleoptera, Leiodidae, Leiodinae, *Pseudcolenis*, China, India, Nepal**

**Abstract.** *Pseudcolenis schawalleri*, *P. flaveola*, *P. jaegeri* and *P. minor* spp. n. from Nepal, *P. acuminata* sp. n. from India and China (Yunnan), *P. yunnanica*, *P. crassicornis*, *P. annulata*, *P. carinata*, *P. strigicollis*, *P. fortrepunctata*, *P. interposita*, *P. michaeli*, *P. major* spp. n. from China (Yunnan) are described and distinguished from similar species. Newly stated species, groups and subgroups in the genus are defined in the key. *Pseudcolenis rastrata* (Champion, 1923) is recorded from China (Yunnan) for the first time. *Pseudcolenis hilleri* Reitter, 1884 from Shaanxi, Jilin and Yunnan, *P. dilatata* Angelini & Švec, 2000, *P. laticornis* Angelini & Švec, 2000 and *P. neglecta* Angelini & Švec, 2000 from Yunnan are recorded newly. The subgenus *Pseudcolenisia* Daffner, 1988 is synonymized with the genus *Pseudcolenis* Reitter, 1884.

### INTRODUCTION

The genus *Pseudcolenis* Reitter, 1884 was revised by Daffner (1988) who described beside a number of new species also a subgenus new to science - *Pseudcolenisia* Daffner, 1988. The genus has been also studied by Angelini & Švec (1994, 1995, 2000) and by Švec (1996, 2002; 2003).

Altogether 30 species of the genus has been known up to now. Among them 29 species were described or transferred to the subgenus *Pseudcolenis* s. str. They are known to occur in the Asian Palaearctic and in the Oriental Region. The only species described under the subgenus *Pseudcolenisia* Daffner occurs in the Australian Region (New Guinea).

Besides Perkovsky (1999) transferred to the genus *Pseudcolenis* the species *Colenis impunctata* LeConte, 1853. Perkovsky based his taxonomic act on the results of the examination of one male specimen (no type) originating from Canada agreeing with the diagnosis of *Colenis impunctata* LeConte. In my collection there are preserved several specimens determined by S. B. Peck (Ottawa) as *Colenis impunctata* LeConte. The specimens belong without any doubts to the genus *Colenis* Erichson, 1842. Believing in the accuracy of Peck's determination, I omitted Perkovsky's opinion about the position of *Colenis impunctata* Le Conte in the present paper.

In this paper 14 species new to science are described. Therefore the present number of the *Pseudcolenis* species is 44. The subgenus *Pseudcolenisia* Daffner is proposed as a junior synonym of the genus *Pseudcolenis* Reitter. Some new faunistic records are added.

## MATERIAL AND METHODS

### Abbreviations:

- JCHC Jonathan Cooter private collection, Hereford, Great Britain;  
MSBC Michael Schülke, private collection, Berlin, Germany;  
NKMC Natural History Museum, Erfurt, Germany;  
SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany;  
ZMDC Senckenberg Natural History Collections, Zoological Museum, Dresden, Germany;  
ZSPC Zdeněk Švec private collection, Prague, Czech Republic.

The present work is based on the material collected predominantly by Michael Schülke (Berlin), by Aleš Smetana (Ottawa) and other collectors. Thanks to the courtesy of Olaf Jäger (Dresden), Matthias Hartmann (Erfurt) and Wolfgang Schawaller (Stuttgart) an interesting material coming from the Senckenberg Natural History Collections - Zoological Museum, Dresden and from the Natural History Museum, Erfurt could be examined as well. A part of the examined material comes from the collection of Jonathan Cooter (Hereford).

Collecting data cited in quotation marks are taken from the locality labels accompanying the examined examples. The type material is preserved in MSBC, FABC, ZMDC, NKMC, SMNS and in ZSPC.

The dissected male and female genitalia were mounted in Arabic gum on the same label as the relevant specimen or on a transparent label added to the same pin as the dissected specimen.

The term “mesosternal bump” used in this paper refers to the bump-shaped structure of mesosternum that is developed between meso-coxae flatly falling anteriorly in lateral view. The term “mesosternal ridge” means a wide longitudinal ridge rounded on the margin, placed between of meso-coxae and anteriorly before them having or lacking a narrow carina along the margin. The mesosternal ridge of this type becoming flatly bifurcate anteriorly. It seems that 3 types of mesosternal structures can be detected in the genus up –a longitudinal bump flatly rounded in lateral view gradually falling anteriorly (type A), a roundly angled ridge without carina falling abruptly anteriorly (type B) and lastly a ridge similar to the type B but with a toothed carina (type C); all of them are figured in figs 28-31.

The measurements of total body length was taken from all specimens examined. Specific measurements of the individual body parts were taken from the holotypes only. They were measured to the first decimal place of millimetre except the distance between elytral strigositys that are approximated on the hundredth of the milimeter. The descriptions are based on the holotypes. Variability is mentioned in the paragraph “Variation” if necessary and includes features exhibited by paratypes. Also the important characters of the sexual dimorphism are included in the mentioned paragraph.

## DESCRIPTIONS

The beetles of the genus *Pseudcolenis* Reitter, 1884 are habitually more or less very uniform. The most useful characters for the identification seem to be the density of the elytral

strigosity, the structure of the male antennae and the structure of mesosternum. The best way to determination is comparing of the shape of males and females genitalia including the shape of endophalic structures, even if similar shapes of aedeagus and mainly spermatheca occur in habitually similar species. Nevertheless using the main external characters it is possible to detect groups and subgroups of species that have the same basic features. The groups and the subgroups are defined with help of the characters expressed in the following key.

One of the basic characters is the structure of the mesosternum. Daffner (1988) described a new monotypic subgenus - *Pseudcolenisia*, based on the species exhibiting presence of narrow, low unobtrusive longitudinal mesosternal carina. The type species was *Pseudcolenis (Pseudcolenisia) sedlaceki* Daffner, 1988 from Papua New Guinea. The examination of the material from China, India and Nepal showed that the majority of the species possess a wide not well margined longitudinal bump located between and before mid-coxae gradually falling anteriorly, which was typical for the species of the subgenus *Pseudcolenis* s. str. (mesosternal structure type A, as in figs 28, 29). Two species described in the present paper - *Pseudcolenis carinata* sp. n. and *P. crassicornis* sp. n. possess an angled ridge on the mesosternum with a low carina (mesosternal structure type C, as in Fig. 30) laterally viewed. Therefore the mesosternal structure in the species agree well with the character described and figured by Daffner (1988) as the basic feature typical for the subgenus *Pseudcolenisia*. Another species that was discovered in the Chinese material - *Pseudcolenis interposita* sp. n. seems to be a link between the subgenus *Pseudcolenis* s. str. and the subgenus *Pseudcolenisia* Daffner due to possessing a roundly angled ridge lacking carina abruptly falling dorso-anteriorly in lateral view (mesosternal structure type B, as in Fig. 30). These findings lead me to the conclusion that it is justified to propose the subgenus *Pseudcolenisia* Daffner, 1988 as the younger synonym to *Pseudcolenis* Reitter, 1884.

Usually two depressions just behind clypeus on each side of the front can be detected in the specimens belonging to the genus as well as the striking pairs large punctures found usually on vertex (2 pairs) a pair of large punctures behind the clypeal line, another pair beside of clypeal line on the latero-anterior part of head and a pair located at each eye medially. The examination of the extensive material that is preserved in ZSPC and other collections shows variation in the number and placement of the large punctures and also in the intensity of the depressions. That is why sculptures on head surface in the *Pseudcolenis* Reitter species do not seem to be too taxonomic important. The pronotal punctuation consists usually from very scarcely arranged fine superficial punctures with several irregularly distributed large punctures. The existence of these common characters present on head and pronotum allows to mention them generally in this place and not to repeat the same again in the description of the individual species. Thus the description of the types regarding the head and pronotal punctuation is minimized in this paper.

If it is not stated otherwise (in case of diversion from the usual state), also some other characters commonly occurring in the species of the genus are not mentioned in the descriptions:

- shining surface,
- very sporadic pubescence of the dorsum,
- absence of striking characters on legs that generally missing specific features,
- lightly coloured (yellow to yellow-red) legs, mouth-parts
- dilated anterior tarsal segments 1-4 with protracted tarsal segment 1 in males, slender tarsi in females,

- if present, microsculpture formed by transverse strigosity connected in some places,
- distinctly weaker and denser strigosity on pronotum in contrast to intensity and density of head strigosity,
- emargination of otherwise straight pronotal base before hind angles,
- scutellum strigose as on head, regularly without punctures,
- presence of normally developed membranous wings,
- clearly impressed sutural stria,
- interval rows of punctures equal to the primary rows.

On the other hand the ratios of width of the individual antennal segments and the ratio of width: length of antennal segments seem to be important characters indicating number of segments of antennal club and their relative size, so that they are included in the descriptions.

## KEY TO THE SPECIES GROUPS AND SUBGROUPS OF THE GENUS

### *PSEUDCOLENIS* REITTER, 1884

- 1 Mesosternum with non-carinate longitudinal bump or ridge between mid-coxae. .... 2
- Mesosternum with carinate longitudinal ridge. .... *Pseudcolenis sedlaceki* species group  
(*Pseudcolenis sedlaceki* Daffner, 1988; *P. carinata* sp. n.; *P. crassicornis* sp. n.)
- 2 (1) Elytra with transverse strigosities. .... 3
- Elytra without transverse strigosities. .... *Pseudcolenis bouvieri* species group  
(*Pseudcolenis laevipennis* (Portevin, 1922); *P. bouvieri* (Portevin, 1903); *P. neglecta* Angelini & Švec, 2000; *P. laticornis* Angelini & Švec, 2000; *P. schawalleri* sp. n.)
- 3 (2) Elytra with strigosities separated by about 0.02 mm or less. .... 4
- Elytra with very sparsely arranged strigosities separated at least by about 0.03 mm. ....  
..... *Pseudcolenis grandis* species group
- a. Antennal segment 7 approximately as large as segments 9, 10 in both genders (in *P. strigicollis* sp. n. segment VII broader than other segments). .... Subgroup I  
(*Pseudcolenis picea* (Hisamatsu, 1964); *P. sinica* Angelini & Švec, 2000; *P. indica* (Portevin, 1926); *P. grandis* (Portevin, 1905); *P. yunnanica* sp. n.; *P. strigicollis* sp. n.; *P. fortepunctata* sp. n.; *P. michaeli* sp. n.)
- b. Antennal segment 7 strikingly enlarged in male; a little larger than segment 9, 10 in female. .... Subgroup II  
(*P. lenka* Švec, 2002; *P. shannae* Angelini & Švec, 2000)
- 4 (3) Elytra with sparsely arranged strigosities; width of interstices up to 0.02 mm. ....  
..... *Pseudcolenis strigosa* species group
- a. Antennal segment 7 approximately as large as segments 9, 10 in both genders. .... Subgroup I  
(*Pseudcolenis flavicollis* Daffner, 1988; *P. strigosa* (Portevin, 1905))
- b. Antennal segment 7 strikingly enlarged in male; a little larger than segment 9, 10 in female. .... Subgroup II  
(*Pseudcolenis disparilis* Daffner, 1988; *P. schuelkei* Švec, 2002; *P. jaegeri* sp. n.)
- Elytra with densely arranged strigosities, width of interstices at most 0.01 mm. .... 5
- 5 (4) Elytral strigosities dense, with interstices approximately 0.01 mm wide. ....  
..... *Pseudcolenis hilleri* species group.
- a. Antennal segment 7 approximately as large as segments 9, 10 in both genders. .... Subgroup I.  
(*Pseudcolenis riedeli* Daffner, 1988; *P. klapperichi* Daffner, 1988; *P. hilleri* Reitter, 1884; *P. hoshinai* Park & Ahn, 2007; *P. annulata* sp. n.; *P. interposita* sp. n.)
- b. Antennal segment 7 strikingly enlarged in male. .... Subgroup II  
(*Pseudcolenis minor* sp. n.; *P. acuminata* sp. n.)
- Elytral strigosities very closely or even extremely densely arranged, separated less than 0.01 mm .....  
..... *Pseudcolenis rastrata* species group
- a. Antennal segment 7 approximately as large as segments 9, 10 or somewhat wider in both genders. ....  
..... Subgroup I.  
(*Pseudcolenis rastrata* (Champion, 1923); *P. variicornis* (Champion, 1924); *P. boukali* Švec, 1996; *P. rotundata* Daffner, 1988; *P. haemisphaerica* (Champion, 1924); *P. loebli* Daffner, 1988; *P. flaveola* sp. n.; *P. major* sp. n.)

- a. Antennal segment 7 or/and segments 6 or 8 enlarged; or even extremely developed; distinctly larger than all other segments. .... Subgroup II (*Pseudolenis besucheti* Daffner, 1988; *P. schneideri*, Švec, 2003; *P. forticornis* Daffner, 1988; *P. dilatata* Angelini & Švec, 2000; *P. aciculata* Daffner, 1988,

***Pseudolenis yunnanica* sp. n.**

(Figs 1, 32)

**Type material.** Holotype (♂): “China, N-Yunnan, Nujiang Lisu Aut. Pr. Gongashan Co. Gaoligong Shan, valley at 3000-3050 m, 27°47.90' N, 98°30.19' E, 21.vi.2005, A. Smetana [C169]”, (ZSPC). Paratype (♂): “China: N-Yunnan [C2005-12], Nujiang Lisu Aut. Pref., Gongashan Co., Gaoligong Shan, 2500 m, 27°45.404' N98°35.749' E, litter & debris at snowfield sifted during rain, 19.vi.2005, M. Schülke”, (MSBC).

**Description.** Total length 2.2-2.5 mm, in holotype 2.2 mm, head 0.2 mm, pronotum 0.6 mm, elytra 1.4 mm, antenna 0.8 mm. Maximum width of head 0.6 mm, pronotum 1.2 mm at base, elytra 1.4 mm at anterior third of elytral length.

Oval (as in Fig. 32), dark chestnut brown, clypeus, lateral margins of pronotum, base, apex and lateral margins of elytra lighter, antennal segments I-VI yellow, segments VII-XI lightly brown-yellowish. Ventral surface lightly chestnut, coxae and abdomen darker. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With punctures spaced by about 4-6 times their own diameter. Punctures on clypeus very sparse. Antennal club 5-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.0-1.3-1.5-2.5-2.3-3.0-3.0-2.8. Width : length ratios of antennal segments II-XI = 0.4-0.3-0.4-0.5-0.6-0.8-1.0-1.1-1.2-0.6.

Pronotum. With unobtrusive punctuation, punctures minute very sparsely scattered. Posterior angles viewed dorsally rectangular closely rounded on tip. In lateral view posterior angles obtuse with rounded tip.

Elytra. Very sparsely strigose; strigosity spaced approximately by 0.04 mm. Very distinct punctures arranged in rows; separated by about 1-2 times their diameters. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 1, female unknown.

**Variation.** Antennal club segments VII-X brown, segment XI light brown in the paratype.

**Differential diagnosis.** *Pseudolenis yunnanica* sp. n. is most closely similar to *Pseudolenis indica* (Portevin, 1926) and *P. fortepunctata* sp. n.; having similar type of antennae in male, sternal and elytral sculpture and approximately similar size of body. *P. yunnanica* sp. n. differs from *P. indica* by antennae that are from segment I to VI light in *P. yunnanica*, while antennae in *P. indica* are light from segments I-V. *P. yunnanica* differs from *P. fortepunctata* by distinctly punctured head, that is punctured by very small, irregularly distributed rare punctures in *P. fortepunctata* sp. n.; by antennal segment VII that is broader than antennal segment VIII in male, while segment VII is as wide as segment VIII in *P. fortepunctata*.

Beside that the new species can be distinguished by the characteristic shape of the aedeagus and the shape of the internal sac.

**Name derivation.** The name of the new species is derived from the region of origin.

***Pseudcolenis acuminata* sp. n.**

(Figs 2, 5, 33)

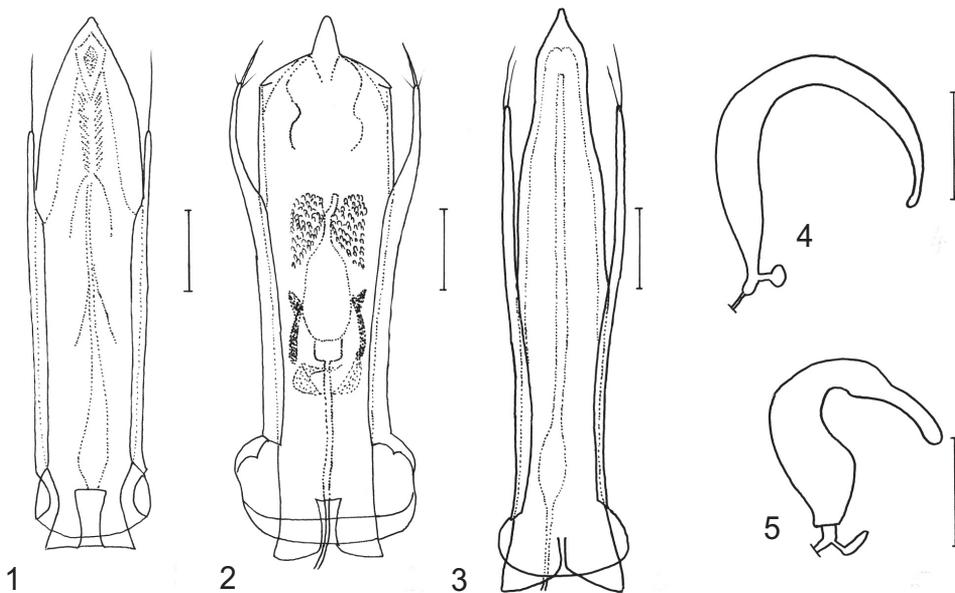
**Type material.** Holotype (♂): “N. India, Uttaranchal State ca 30 km N of Bageshwar, SE of Dhakuri vill. , 2600-2800 m, 25.-26.vi.2003, Z. Kejval & M. Trýzna lgt.”, (ZSPC). Paratypes. (1 ♂): “Nepal, Panchthar Distr., Dhorpar Kharka”, 2700 m, 13-16.iv. 1988, Martens et Schawaller leg. (SMNS); (2 ♂♂, 3 ♀♀): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49’32’’N 98°46’06’’E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC, ZSPC); (1 ♀): “China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51’22’’N 98°45’36’’E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC); (2 ♂♂, 3 ♀♀): “China: Yunnan [CH07-14A], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51’22’’N 98°45’36’’E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, M. Schülke”, (ZSPC, MSBC); (1 ♀): “China: Yunnan [CH07-15], Baoshan Pref., Gaoligong Shan, 29 km ESE Tengchong, 24°55’37’’N 94°45’09’’E, 2350 m, dev. decid. forest, litter, wood, fungi sifted, 1.vi.2007, M. Schülke”, (MSBC); (2 ♂♂, 5 ♀♀): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49’32’’N 98°46’06’’E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz”, (ZMDC, ZSPC); (1 ♂): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50’16’’N 98°45’43’’E, decid. forest, litter sifted, 4.vi.2007, leg. A. Pütz”, (ZMDC); (1 ♂): “China: Yunnan [CH07-14A], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51’22’’N 98°45’36’’E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, leg. A. Pütz”, (ZMDC).

**Description.** Total length 2.3-2.8 mm, in holotype 2.5 mm, head 0.2 mm, pronotum 0.7 mm, elytra 1.6 mm, antenna 0.9 mm. Maximum width of head 0.7 mm, pronotum 1.4 mm at base, elytra 1.5 mm at anterior fourth of elytral length.

Broad oval (as in Fig. 33), yellow-brown with brown head, pronotum opalescent, antennal segments I-V yellow, segments VI-XI brown, apex of segment XI light. Ventral surface brown-yellow. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With punctures small, fine, irregularly distributed, spaced by about 4-8 or more times their diameter. Antennal club 5-segmented, segment VII strikingly enlarged. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.2-1.3-1.6-2.5-1.7-2.0-2.0-1.6. Width : length ratios of antennal segments II-XI = 0.5-0.4-1.0-1.1-1.7-0.9-1.1-1.0-0.9-0.5.

Pronotum. Strigosity only a little finer and denser than on head. With very fine punctuation, punctures separated by about 10 or more their diameter. In dorsal view posterior angles acute, very closely rounded on tip. In lateral view posterior angles slightly obtuse with closely rounded tip.



Figs 1-5. 1-3: aedeagus dorsally, 4, 5 spermatheca. 1- *Pseudocolenis yunnanica* sp. n.; 2,5- *P. acuminata* sp. n.; 3,4- *P. schawalleri* sp. n. Scale = 0.1 mm.

**Elytra.** Densely strigose, elytral strigosity spaced approximately by 0,01 mm. Very small feeble elytral punctures tend to form unobtrusive rows in some places. Sutural stria extending approximately to elytral basal fourth.

**Mesosternum.** Mesosternal bump of type A.

**Genitalia.** Aedeagus as in Fig. 3, spermatheca as in Fig. 5.

**Variation.** Antennal club 5-segmented with antennal segments VI-X as wide as long or even wider than long; the rest of antennal segments longer than wide in female. The type series grades from entirely yellow-brown specimens, to chestnut coloured specimens with brown head and with lighter margins of pronotum, base and margins of elytra and a strip along the suture.

**Differential diagnosis.** *Pseudocolenis acuminata* sp. n. is most closely similar to *P. minor* sp. n. by sternal and elytral structure and by strikingly enlarged antennal segment VII in male. It differs by pronotal strigosity only a little dense while the pronotal strigosity is distinctly denser than on head in *P. minor* sp. n. and by the shape of the genitalia.

**Name derivation.** The Latin name of the new species reminds the pointed process at the apex of the tegmen.

*Pseudcolenis schawalleri* sp. n.

(Figs. 3, 4, 34)

**Type material.** Holotype (♂): “Nepal, Panchthar Distr., Paniporua, 2300 m, 16-20.iv.1988, Martens et Schawaller leg. ”, (SMNS). Paratypes. (1 ♂): the same data, (SMNS); (1 ♀): “Nepal, Taplejung Distr., Yamputhin ascent to pass Deorali, 2100-2600 m, 6-9.v.1988”, (ZSPC); (1 ♂, 2 ♀♀): “Nepal, Taplejung Distr., descent from pass Deorali to Hellok, 2400-2800 m, 17.v.1988, Martens et Schawaller leg.”, (ZSPC, SMNS).

**Description.** Total length 2.3-2.6 mm, in holotype 2.3 mm, head 0.3 mm, pronotum 0.6 mm, elytra 1.4 mm, antenna 1.4 mm. Maximum width of head 0.6 mm, pronotum 1.4 mm at base, elytra 1.4 mm at anterior third of elytral length.

Oval, elytra distinctly tapered to apex approximately from anterior third, (as in Fig. 34), reddish chestnut, antennal segments I-VI red-yellow, segments VII-XI red-brown.

Clypeus opalescent. Ventral surface lightly chestnut. Dorsal surface not microsculptured as clypeus.

Head. Strigosity only on clypeus. With punctures small, fine, irregularly distributed. Antennae strikingly slim and long, antennal club 5-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-0.7-0.7-0.8-0.8-1.3-1.3-1.7-1.8-2.0. Width : length ratios of antennal segments II-XI = 0.5-0.3-0.4- 0.5-0.7-0.7-1.0-0.9-0.9-0.7.

Pronotum. Without any microsculpture. With very fine superficial, rare punctures. In dorsal view posterior angles acute, pointed on tip. In lateral view posterior angles slightly obtuse with very closely rounded tip.

Elytra. Without microsculpture. With distinct rows of strong punctures; punctures in two medial rows almost regularly arranged separated by about 3-5 times their diameter, rows becoming less regular more finely and sparsely punctured laterally and apically. Elytral intervals with punctures finer than those in primary rows. In odd discal intervals large punctures interposed similarly as it is usually in the genus *Leiodes* Latreille. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Metathoracic wings. Reduced.

Genitalia. Aedeagus as in Fig. 3, spermatheca as in Fig. 4.

**Variation.** Antennae entirely yellow-red or at most with segments VII-XI somewhat darker in some of the paratypes. Antennal club 5-segmented with antennal segments VII-X as wide as long or even wider than long; the rest of antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudcolenis schawalleri* sp. n. is most closely similar to *P. bouvieri* (Portevin, 1903); *P. neglecta* Angelini & Švec, 2000 and *P. laticornis* Angelini & Švec, 2000, by sternal structure and by lack of dorsal strigosites. It differs by strikingly long antennae by acuminate elytra, by reduced membranous wings and by the shape of the genitalia as well.

**Name derivation.** The new species is named after W. Schawaller, one of its collectors.

***Pseudcolenis crassicornis* sp. n.**

(Figs 6, 35)

**Type material.** Holotype (♂): “China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51′22″N 98°45′36″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC). Paratypes. (5 ♂♂): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC, ZSPC).

**Description.** Total length 2.3-2.8 mm, in holotype 2.4 mm, head 0.3 mm, pronotum 0.6 mm, elytra 1.5 mm, antenna 0.7 mm. Maximum width of head 0.7 mm, pronotum 1.4 mm at base, elytra 1.4 mm at anterior third of elytral length.

Broad oval (as in Fig. 35), head and pronotum opalescent, dorsum dark brown with lighter clypeus, pronotum at hind angles and margins of elytra. Antennal segments I-V lightly red-yellow, segment VI infuscate, segments VII-X black, apical half of segment XI light. Ventral surface yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With distinct punctures sparsely irregularly distributed. Antennal club 6-segmented, wide, segments VII and VIII strikingly unusually enlarged. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.4-1.4-1.6-2.2-3.2-3.6-2.8-2.8-2.4. Width : length ratios of antennal segments II-XI = 0.4-0.7-1.2-1.3-1.6-1.8-1.8-1.2-1.2-0.7.

Pronotum. With very fine small rare, irregularly distributed punctures. Hind pronotal angles acute, on tip closely rounded in dorsal view. In lateral view posterior angles rectangular with closely rounded tip.

Elytra. With dense strigosities separated approximately by 0.01 mm. With very small punctures tending to seriate in some places, separated by about 5-6 times their diameter. Punctured rows in intervals only in traces developed. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal ridge of type C.

Genitalia. Aedeagus as in Fig. 6. Female unknown.

**Variation.** Antennal segment XI yellow in the paratype.

**Differential diagnosis.** *Pseudcolenis crassicornis* sp. n. is most closely similar to *Pseudcolenis sedlaceki* Daffner, 1988 and *P. carinata* sp. n. From both species it clearly differs by enlarged antennal segment VII and VIII that are of usual size in the species compared. Also aedeagi are of different shape in all the mentioned species.

**Name derivation.** The name of the new species reminds its stout antennae.

***Pseudcolenis annulata* sp. n.**

(Figs 7, 10, 36)

**Type material.** Holotype (♂): “China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51′22″N 98°45′36″E, decid. forest, litter,

wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC). Paratypes. (3 ♂♂, 1 ♀): the same data, (ZSPC, MSBC); (1 ♂): the same data but 4.vi.2007, (MSBC); (4 ♂♂, 2 ♀♀): “China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51'22''N 98°45'36''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz”, (ZMDC, ZSPC); (7 ♂♂, 7 ♀♀): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC, ZSPC); (3 ♂♂): the same data but leg. A. Pütz, (ZMDC); (1 ♂): “China: Yunnan [CH07-13A], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, M. Schülke”, (ZSPC); (1 ♂, 1 ♀): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16''N 98°45'43''E, decid. forest, litter sifted, 30.v.2007, leg. A. Pütz”, (ZSPC, ZMDC); (1 ♂): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16''N 98°45'43''E, decid. forest, litter sifted, 4.vi.2007, leg. A. Pütz”, (ZMDC); (1 ♀): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16''N 98°45'43''E, decid. forest, litter, sifted, 4.vi.2007, M. Schülke”, (ZSPC).

**Description.** Total length 1.9-2.3 mm, in holotype 2.1 mm, head 0.2 mm, pronotum 0.5 mm, elytra 1.4 mm, antenna 0.8 mm. Maximum width of head 0.6 mm, pronotum 1.2 mm at base, elytra 1.3 mm at anterior sixth of elytral length.

Oval (as in Fig. 36), light chestnut brown, pronotum opalescent, antennal segments I-V yellow, segments VI-XI dark, apex of segment XI light. Ventral surface lightly yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With punctures small, fine, rare. Antennal club 5-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-0.8-0.8-1.0-1.2-1.8-1.6-2.0-2.0-1.8. Width : length ratios of antennal segments II-XI = 0.5-0.3-0.6-0.8-1.0-0.7-1.1-1.0-1.0-0.5.

Pronotum. With unobtrusive punctuation, punctures extremely minute very sparsely scattered. In dorsal view posterior angles acute, very closely rounded on tip. In lateral view posterior angles rectangular with closely rounded tip.

Elytra. Densely strigose, elytral strigosity spaced approximately by 0.01 mm. Very small feeble elytral punctures tend to form unobtrusive rows in some places. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 7, spermatheca as in Fig. 10.

**Variation.** Antennal club weakly developed, 5-segmented with segment X as long as wide, the other antennal segments longer than wide in female. The type series grades from light chestnut brown specimens, to specimens with the dorsal surface yellow-red with lighter margins of pronotum, margins of elytra and suture with brown head.

**Differential diagnosis.** *Pseudocolenis annulata* sp. n. is most closely similar to *Pseudocolenis klapperichi* Daffner, 1988 and *P. hilleri* Reitter, 1884 having similar type of antennae in male, sternal and elytral sculpture, colouring of the antennae and approximately similar

size of body. *P. annulata* sp. n. differs from *P. klapperichi* by traces of unobtrusive elytral punctured rows that are developed in *P. klapperichi*; the new species differs from *P. hilleri* by unobtrusively punctured pronotum while the same is finely but distinctly punctured in *P. hilleri*. From both species mentioned and all other up to known species *P. annulata* differs by the shape of aedeagus and namely by the shape of endophallus that is distinctive by the ring-shaped structure. Also the shape of spermatheca differs from other species of the genus.

**Name derivation.** The Latin name of the new species reminds the ring-shape of the central part of endophallus.

*Pseudcolenis major* sp. n.

(Figs 8, 11, 37)

**Type material.** Holotype (♂): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC). Paratypes. (14 ♂♂, 38 ♀♀): the same data as holotype, (MSBC, ZSPC); (4 ♂♂, 3 ♀♀): the same data but leg. A. Pütz, (ZMDC, ZSPC); (1 ♂, 2 ♀♀): “China: Yunnan [CH07-13A], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, M. Schülke”, (MSBC, ZSPC); (7 ♂♂, 8 ♀♀): “China: Yunnan [CH07-28A], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley, 19 km NW Liuku, 25°59′02″N, 98°42′23″E, 2730 m, devast. prim. for., litter sifted, 9.vi.2007, M. Schülke”, (MSBC, ZSPC); (1 ♀): “China: Yunnan [CH07-11A], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 25 km SE Tengchong, 2110 m, 24°50′16″N, 98°45′43″E, decid. forest, fungi, sifted. 4.vi.2007, M. Schülke”, (ZSPC); (20 ♂♂, 20 ♀♀): “China: Yunnan [CH07-28], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 19 km NW Liuku, 25°59′02″N 98°42′23″E, 2730 m, devast. prim. forest, litter sifted, 9.vi.2007, leg. A. Pütz”, (ZMDC, ZSPC); (1 ♂, 8 ♀♀): “China: Yunnan [CH07-14A], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51′22″N 98°45′36″E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, leg. A. Pütz”, (ZMDC, ZSPC); (1 ♀): “China: Yunnan [CH07-30], Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 25°43′29″N, 99°07′57″E, 2420 m, second. pine forest with shrubs, litter, bark sifted, 11.vi.2007, leg. A. Pütz”, (ZMDC).

**Description.** Total length 2.6-3.2 mm, in holotype 3.1 mm, head 0.5 mm, pronotum 0.7 mm, elytra 1.9 mm, antenna 1.1 mm. Maximum width of head 0.8 mm, pronotum 1.6 mm at base, elytra 1.8 mm at anterior fourth of elytral length.

Broad oval (as in Fig. 37), opalescent, brown head with lighter clypeus and front, red-yellow pronotum, light chestnut elytra, scutellar margins, posterior margin of pronotum darker, pronotal margins and elytra lighter; antennal segments I-V lightly yellow-red, segments VI-XI brown, apex of segment XI light. Ventral surface light yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With punctures very sparse irregularly distributed. Antennal club 6-segmented. Segment VII enlarged. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.2-1.2-1.3-1.8-2.7-2.3-2.5-2.3-2.0. Width : length ratios of antennal segments II-XI = 0.4-0.4-0.8-0.9-1.2-1.1-1.2-1.1-1.0-0.5.

Pronotum. With fine punctures separated by about 10 or more times their own diameter. Posterior pronotal angles acute pointed on tip. In lateral view posterior angles obtuse with closely rounded tip.

Elytra. With extremely dense strigosities separated distinctly less than 0.01 mm. With extremely small punctures tending to seriate in some places. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 8, spermatheca as in Fig. 11.

**Variation.** Some of the paratypes with darkened disc of pronotum and elytra, some other paratypes with segment XI light. Antennal club 6-segmented with antennal segments VI-X as wide as long or even wider than long, the rest of antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudocolenis major* sp. n. is most closely similar to *P. loebli* Daffner, 1988 by extremely dense elytral strigosities and the type of male antennae. It differs by larger size 2.6-3.2 mm while the size of *P. loebli* is 1.9-2.2 mm. The new species differs from *P. loebli* also by the shape of aedeagus and spermatheca.

**Name derivation.** The name of the new species reminds the large size of body.

***Pseudocolenis flaveola* sp. n.**

(Figs 9, 12, 38)

**Type material.** Holotype (♂): "Nepal, P: Janakpur D: Dolakha, Rozwaling Himal npp. Simigau village, 2800 m NN, 02.vi.2001, leg. J. Schmidt", (NKME). Paratypes. (1 ♂, 2 ♀♀): the same data, (NKME, ZSPC).

**Description.** Total length 2.8-3.1 mm, in holotype 2.8 mm, head 0.4 mm, pronotum 0.6 mm, elytra 1.8 mm, antenna 1.0 mm. Maximum width of head 0.7 mm, pronotum 1.5 mm at base, elytra 1.4 mm at anterior fifth of elytral length.

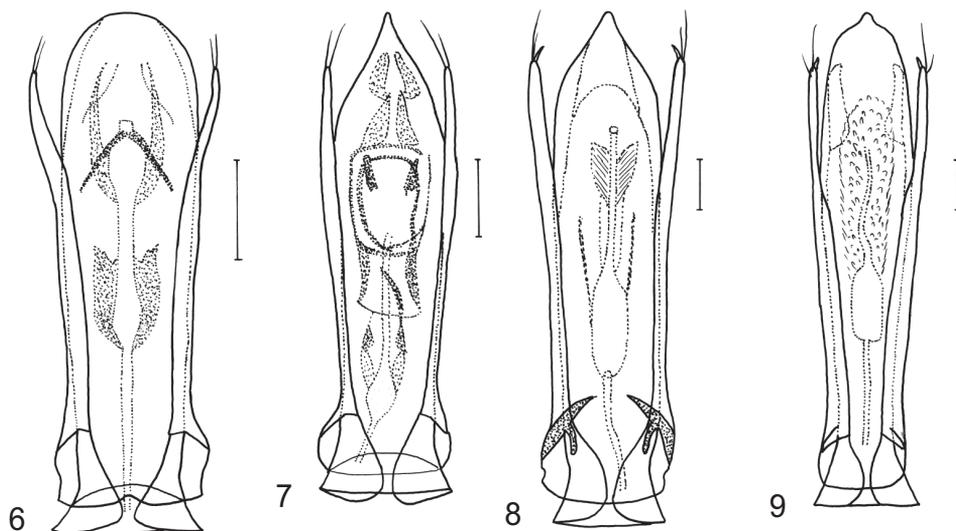
Broad oval (as in Fig. 38), yellowish, disc of pronotum darker, head brown with lighter clypeus, antennal segments I-V yellow, segment VI partly infuscate, rest of antenna brown. Ventral surface lightly brown-yellowish. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With irregularly distributed punctures spaced by about 2-10 or even more times their own diameter. Antennal club 6-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.2-1.4-2.0-2.4-2.0-2.2-2.2-2.4. Width : length ratios of antennal segments II-XI = 0.4-0.4-0.8-0.7-1.1-1.1-1.0-0.8-0.8-0.5.

Pronotum. With unobtrusive punctuation, punctures minute very sparsely scattered. Posterior angles viewed dorsally acute closely rounded on tip. In lateral view posterior angles rectangular with rounded tip.

Scutellum. Strigose as on head with few punctures.

Elytra. Very closely strigose; strigosity spaced by less than 0.01 mm.. Very fine punctures



Figs 6-9: aedeagus dorsally. 6- *Pseudocolenis crassicornis* sp. n.; 7- *P. annulata* sp. n.; 8- *P. major* sp. n.; 9- *P. flaveola* sp. n. Scale = 0.1 mm.

tend to seriate, separated by about 5 or more their diameters. Some larger punctures rarely disseminated throughout the elytral surface. Sutural stria extending approximately to elytral basal fourth.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 9, spermatheca as in Fig. 12.

**Variation.** Antennal club 6-segmented with segments VI and VIII wider than long and segments VII and IX as wide as long in females. Segments X and XI missing in the female paratypes.

**Differential diagnosis.** *Pseudocolenis flaveola* sp. n. is most closely similar to *Pseudocolenis variicornis* (Champion, 1923) and *P. haemisphaerica* (Champion, 1924), having similar type of antennal, sternal and elytral sculpture and approximately similar size of body. *P. flaveola* sp. n. differs from *P. haemisphaerica* by light antennal segments I-V while only segments I-IV are lightly coloured in the species mentioned. *P. flaveola* differs from *P. variicornis* by 6- segmented antennal club while antennal club is 5-segmented in *P. variicornis*. From both species and all the other up to now known species of the genus differs by the characteristic shape of the aedeagus, the internal sac and the spermatheca as well.

**Name derivation.** The name of the new species is derived from yellowish colour of the dorsum.

*Pseudocolenis carinata* sp. n.

(Figs 13, 17, 31, 39)

**Type material.** Holotype (♂): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC). Paratypes. (1 ♂, 1 ♀): same data as holotype, (MSBC); (1 ♀): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz”, (ZMDC); (1 ♂, 1 ♀): “China: Yunnan [CH07-13A], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, M. Schülke”, (ZSPC); (3 ♂♂): “China: Yunnan [CH07-17], Baoshan Pref, mountain range 25 km S Tengchong, 1900 m, 24°48′28″N, 98°32′03″E, dev. primary decid. forest, litter, fungi sifted, 2.vi.2007, M. Schülke.”, (MSBC, ZSPC).

**Description.** Total length 3.0-3.2 mm, in holotype 3.0 mm, head 0.3 mm, pronotum 0.8 mm, elytra 1.9 mm, antenna 1.2 mm. Maximum width of head 0.9 mm, pronotum 1.6 mm at base, elytra 1.9 mm at anterior fourth of elytral length.

Oval (as in Fig. 39). Dorsum yellow-red, antennae with segments VI-XI brown, segments I-V and apex of segment XI light. Ventral surface red-yellow. Dorsal surface entirely microsculptured by transverse strigosity.

Head. Finely distinctly punctured; punctures separated by about 4-8 times their own diameter. Antennal club 6-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.3-1.2-1.3-2.0-2.5-2.3-2.3-2.2-2.0. Width : length ratios of antennal segments II-XI = 0.4-0.4-0.6-0.9-1.2-1.3-1.0-1.0-0.9-0.5.

Pronotum. With punctures finer than on head but as dense as on head distributed. Posterior pronotal angles acute on tip pointed. In lateral view posterior angles rectangular with closely rounded tip.

Elytra. With densely arranged strigosites separated approximately by 0.01 mm. Elytral punctures strong, irregularly distributed tending to seriate in some places. Punctures separated by about 2-3 times their own diameter. Sutural stria extending approximately to elytral basal third.

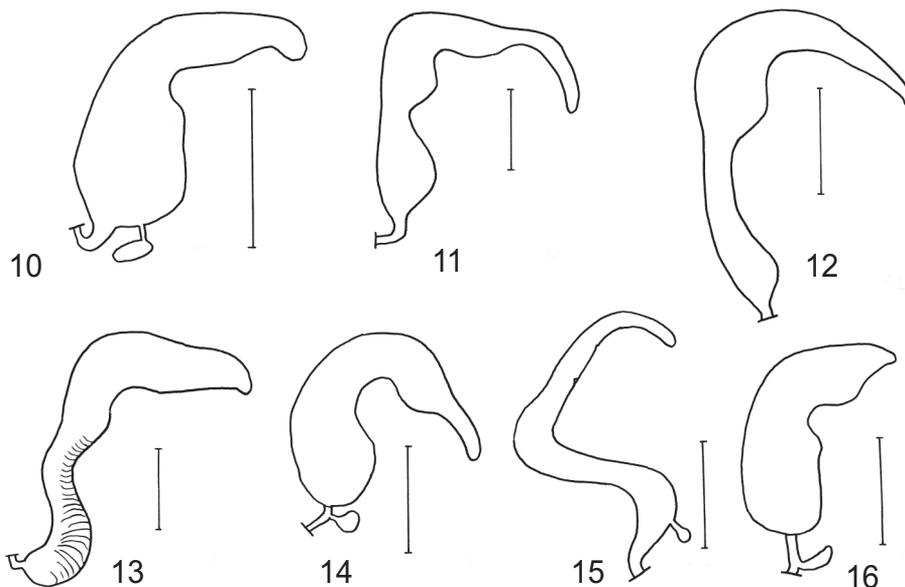
Mesosternum. Mesosternal ridge of type C.

Genitalia. Aedeagus as in Fig. 17, spermatheca as in Fig. 13.

**Variation.** Antennal segments VIII-X somewhat wider than long, rest of the antennal segments longer than wide in female

**Differential diagnosis.** *Pseudocolenis carinata* sp. n. is most closely similar to *P. sedlaceki* Daffner, 1988 by possession low toothed carina on mesosternum. It differs mainly by the 6-segmented club of antennae that are 5-segmented in *P. sedlaceki*.

**Name derivation.** The Latin name of the new species attracts the attention to the carinate mesosternum.



Figs 10-16: spermatheca. 10- *Pseudocolenis annulata* sp. n.; 11- *P. major* sp. n.; 12- *P. flaveola* sp. n.; 13- *P. carinata* sp. n.; 14- *P. strigicollis* sp. n.; 15- *P. fortepunctata* sp. n.; 16- *P. interposita* sp. n. Scale = 0.1 mm.

### *Pseudocolenis strigicollis* sp. n.

(Figs 14, 18, 40)

**Type material.** Holotype (♂): “China: N-Yunnan [C2005-09], Diqing Tibet Aut. Pref., Deqin Co., Meili Xue Shan, E side, 14 km W Deqin, 2850 m; 28°27.47' N, 98°46.35' E, creek valley below glacier, mixed forest, leaf litter, moss, dead wood sifted, 11.vi.2005, M, Schülke”, (MSBC). Paratypes. (1 ♂, 1 ♀): “China: N-Yunnan [C2005-07], Diqing Tibet Aut. Pref., Deqin Co., Meili Xue Shan, E side, 12 km SW Deqin, 2890 m; 28°25.30' N, 98°48.47' E, small creek valley, mixed forest with bamboo, leaf litter, moss, dead wood sifted, 9.vi.2005, leg. M, Schülke”, (MSBC, ZSPC).

**Description.** Total length 2.2-2.5 mm, in holotype 2.2 mm, head 0.3 mm, pronotum 0.5 mm, elytra 1.4 mm, antenna 0.7 mm. Maximum width of head 0.6 mm, pronotum 1.1 mm at base, elytra 1.3 mm at anterior fourth of elytral length.

Oblong oval (as in Fig. 40), dark chestnut, pronotal margins and elytra lighter; antennal segments I-VI yellow-red, segments VII-XI dark brown. Ventral surface yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With punctures distinct but very sparsely, irregularly distributed. Antennal club 5-segmented with segment VII broader than all other segments. Relative width of antennal

segments II-XI (segment II = 1.0): 1.0-1.0-1.2-1.6-1.8-2.6-2.0-2.2-2.4-2.2. Width : length ratios of antennal segments II-XI = 0.5-0.6-1.0-1.3-2.3-1.2-1.4-1.0-1.1-0.7.

Pronotum. With finer microsculpture than on head; strigosites of the same density as on head. With fine punctures separated by about 10 or more times their own diameter. In dorsal view posterior angles obtuse, closely rounded on tip. In lateral view posterior angles obtuse with closely rounded tip.

Elytra. With very sparse strigosites separated by about 0.03-0.04 mm. With feeble rows of small punctures; punctures separated by about 5 or more times of their diameter. Elytral intervals with feeble rows of punctures finer than those in primary rows. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 18, spermatheca as in Fig. 14.

**Variation.** Antennal club 5-segmented with antennal segments VI-X as wide as long or even wider than long; the rest of antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudocolenis strigicollis* sp. n. belongs to the subgroup of species containing *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* sp. n., *P. michaeli* sp. n. and *P. fortepunctata* sp. n. It differs from all the similar species by the same density of pronotal strigosity as on head that is distinctly denser on pronotum than on head in the compared species. It differs also by the shape of the male and female genitalia as well.

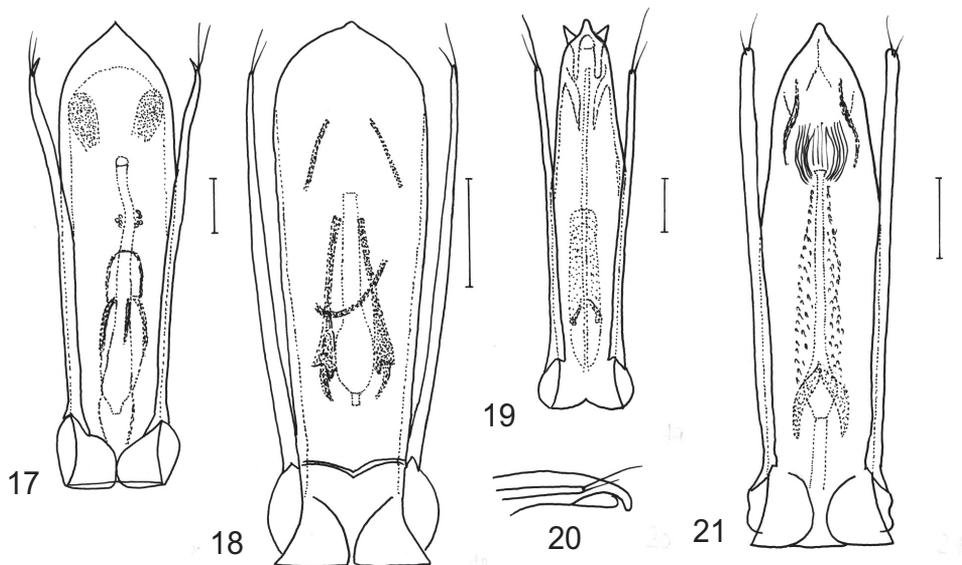
**Name derivation.** The name of the new species reminds the unusually strigose pronotum with strigosity as dense as that on head.

***Pseudocolenis fortepunctata* sp. n.**

(Figs 15, 19, 20, 41)

**Type material.** Holotype (♂): “China: Yunnan [CH07-28A], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley, 19 km NW Liuku, 25°59′02″N, 98°42′23″E, 2730 m, devast. prim. for., litter sifted, 10.vi.2007, M. Schülke”, (MSBC). Paratypes. (4 ♂♂, 4 ♀♀): same data as in holotype, (MSBC, ZSPC); (6 ♂♂, 5 ♀♀): same data as in holotype but leg. A. Pütz, (ZMDC, ZSPC); (3 ♂♂, 4 ♀♀): same data as in holotype, but 10.vi.2007, (MSBC, ZSPC); (1 ♂): “China: Yunnan [CH07-15], Baoshan Pref., Gaoligong Shan, 29 km ESE Tengchong, 24°55′37″N 94°45′09″E, 2350 m, dev. decid. forest, litter, wood, fungi sifted, 1.vi.2007, M. Schülke”, (MSBC); (1 ♀): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50′16″N 98°45′43″E, decid. forest, litter sifted, 30.v.2007, leg. A. Pütz”, (ZMDC).

**Description.** Total length 2.0-2.8 mm, in holotype 2.4 mm, head 0.2 mm, pronotum 0.7 mm, elytra 1.5 mm, antenna 1.0 mm. Maximum width of head 0.7 mm, pronotum 1.4 mm at base, elytra 1.5 mm at anterior fifth of elytral length.



Figs 17-21. Figs 17-19, 21: aedeagus dorsally; Fig. 20: tip of aedeagus laterally. 17- *Pseudocolenis carinata* sp. n.; 18- *P. strigicollis* sp. n.; 19, 20- *P. fortepunctata* sp. n.; 21- *P. interposita* sp. n. Scale = 0.1 mm.

Oval (as in Fig. 41), dorsum chestnut, head and pronotum slightly opalescent. Antennal segments I-VI lightly yellow-red, segment VII-XI brown, apex of segment XI light. Ventral surface lightly chestnut. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With very fine sparse punctures irregularly distributed. Antennal club 5-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-0.7-0.8-0.8-1.7-1.7-1.8-2.0-2.0. Width : length ratios of antennal segments II-XI = 0.5-0.3-0.4-0.5-0.5-0.8-1.3-0.9-1.0-0.6.

Pronotum. With rare very fine very small punctures irregularly distributed. Posterior pronotal angles blunt closely rounded on tip. In lateral view posterior angles rectangular with closely rounded tip.

Scutellum. Surface without structures.

Elytra. With very sparsely arranged strigosities separated approximately by 0.04 mm. With distinct punctures arranged in distinct rows; some rows doubled close to base. Punctures separated by about 1-2 times their own diameter medially and on disc. Punctures become smaller laterally and apically. Intervals with punctured rows of the same character. Sutural stria extending approximately to elytral basal fifth.

Mesosternum. Mesosternal bump of type A.

Legs. Hind tibiae simply curved.

Genitalia. Aedeagus as in Figs 19, 20, spermatheca as in Fig. 15.

**Variation.** Some paratypes with lighter coloured clypeus than the rest of head, antennal

colouring varies from examples with antennae entirely unicolorous to those with antennae infuscate or dark from segment V. Some paratypes with pronotum lighter than elytra. One of the paratypes with distinctly punctured head with punctures separated by about 4-10 times their diameter. Antennal segments VIII-X about as wide as long, rest of the antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudcolenis fortepunctata* sp. n. is most closely similar to *P. indica* (Portevin, 1926) and to *P. yunnanica* sp. n. by the size of body, by pronotal strigosity distinctly denser than that on head, by mesosternal structure, by very sparsely strigose strongly punctuate elytra and by the shape of antennae. It differs from *P. indica* by rows in elytral intervals as strongly punctured as primary rows, while intervals in *P. indica* are punctured by weaker punctures. *P. fortepunctata* differs from *P. yunnanica* by rectangular hind angles of pronotum laterally viewed while the same are obtuse in *P. yunnanica*. All compared species can be also differed by the shape of the genitalia.

**Name derivation.** The name of the new species reminds the strongly punctured elytra.

***Pseudcolenis interposita* sp. n.**

(Figs 16, 21, 30, 42)

**Type material.** Holotype (♂): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC). Paratypes. (1 ♂): same data as in holotype, (ZSPC); (5 ♀♀): same data as in holotype but leg. A. Pütz, (ZMDC, ZSPC); (5 ♀): same data as in holotype but 4.vi.2007, (MSBC).

**Description.** Total length 2.2-2.5 mm, in holotype 2.2 mm, head 0.3 mm, pronotum 0.5 mm, elytra 1.4 mm, antenna 0.9 mm. Maximum width of head 0.6 mm, pronotum 1.2 mm at base, elytra 1.3 mm at anterior third of elytral length.

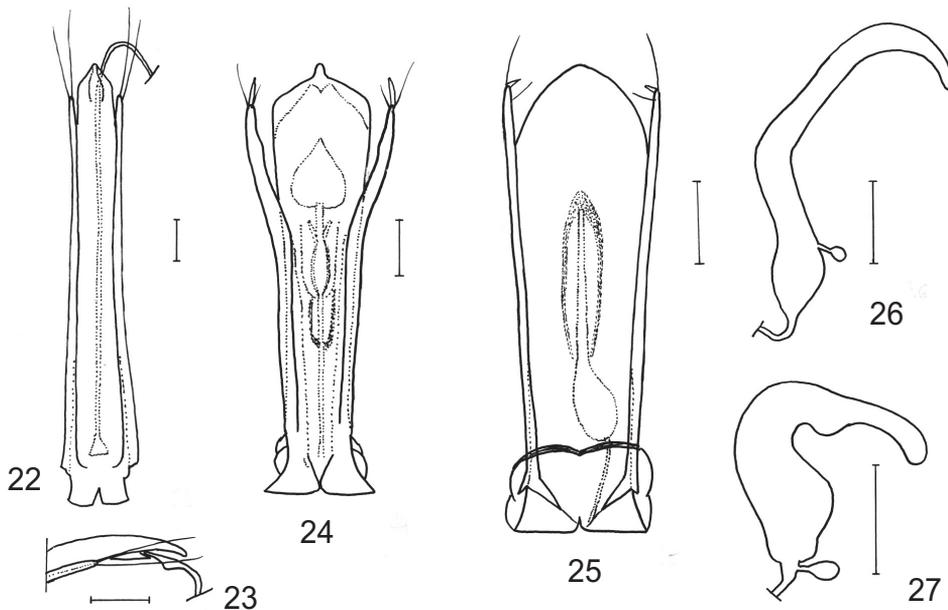
Broad oval (as in Fig. 42). Dorsum dark chestnut with light clypeus and narrowly lighter pronotal and elytral margins. Antennae with segments VI-XI brown, segments I-V and apex of segment XI light. Ventral surface yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. Finely distinctly irregularly punctured; punctures sparse. Antennal club 6-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.0-1.2-1.6-1.8-2.0-2.0-2.0-1.6. Width : length ratios of antennal segments II-XI = 0.4-0.4-0.6-0.8-1.3-0.9-1.3-0.9-0.9-0.4.

Pronotum. With small superficial punctures very scarcely distributed. Posterior pronotal angles acute very closely rounded on tip. In lateral view posterior angles obtuse with closely rounded tip.

Scutellum. Surface without punctures, with strigosity somewhat denser than on head.

Elytra. With densely arranged strigosities separated approximately by 0.01 mm. Elytral punctures small fine, arranged in feeble rows. Punctures separated by about 5-6 times their



Figs 22-27. Figs 22, 24, 25: aedeagus dorsally; Fig. 23: tip of aedeagus laterally; Figs 26, 27: spermatheca. 22,23, 26- *Pseudocolenis michaeli* sp. n.; 24- *P. jaegeri* sp. n.; 25,27- *P. minor* sp. n. Scale = 0.1 mm.

own diameter. Elytral punctured rows becoming indistinct laterally and apically. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal ridge of type B.

Genitalia. Aedeagus as in Fig. 21, spermatheca as in Fig. 16.

**Variation.** Antennal segments VI and VIII-X somewhat wider than long, rest of the antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudocolenis interposita* sp. n. is unique up to now in possessing the type B of mesosternal ridge. That is the most striking character, besides the shape of male and female genitalia, distinguishing *P. interposita* from the group of the similar species - *Pseudocolenis riedeli* Daffner, 1988; *P. klapperichi* Daffner, 1988; *P. hilleri* Reitter, 1884; *P. hoshinai* Park & Ahn, 2007, *P. annulata* sp. n. and *P. acuminata* sp. n.

**Name derivation.** The latin name of the new species attracts the attention to the shape of mesosternal ridge that seems to be interposed between the types A and C of the mesosternal structures.

***Pseudocolenis michaeli* sp. n.**

(Figs 22, 23, 26, 28, 29, 43)

**Type material.** Holotype (♂): “China: Yunnan [CH07-15], Baoshan Pref., Gaoligong Shan, 29 km ESE Tengchong, 24°55′37″N 94°45′09″E, 2350 m, dev. decid. forest, litter, wood, fungi sifted, 1.vi.2007, M. Schülke”, (MSBC). Paratypes. (3 ♂♂, 6 ♀♀): same data as in holotype, (MSBC, ZSPC); (1 ♀): “China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50′16″N 98°45′43″E, decid. forest, litter, sifted, 4.vi.2007, M. Schülke”, (ZSPC); (1 ♀): “China: Yunnan [CH07-24], Nujiang Lisu Aut. Pref., Gaoligong Shan, valley, 18 km W Gongshan, 3020 m, 27°47′54″N, 98°30′13″E, mixed forest, litter, moss, wood sifted, 7.vi.2007, M. Schülke”, (MSBC); (1 ♀): “China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51′22″N 98°45′36″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, (MSBC); (1 ♀): same data as in previous but lgt. A. Pütz, (ZSPC); (1 ♀): “China: Yunnan [CH07-28], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 19 km NW Liuku, 25°59′02″N 98°42′23″E, 2730 m, devast. prim. forest, litter sifted, 9.vi.2007, leg. A. Pütz”, (ZMDC); (1 ♀): “China: Yunnan [CH07-19], Dehong Dai Aut. Pref., mountain range, 31 km E Luxi, 2280 m, 24°29′31″N, 98°52′58″E, second pine forest with old decid. trees, litter sifted, 3.vi.2007, A. Pütz”, (ZMDC); (1 ♂): “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49′32″N 98°46′06″E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz”, (ZMDC).

**Description.** Total length 2.6-2.9 mm, in holotype 2.6 mm, head 0.3 mm, pronotum 0.6 mm, elytra 1.7 mm, antenna 1.0 mm. Maximum width of head 0.7 mm, pronotum 1.3 mm at base, elytra 1.6 mm at anterior third of elytral length.

Oval (as in Fig. 43), elytra from basal third narrowed toward apex. Head and pronotum opalescent, dorsum black-brown, anterior margin of clypeus, hind angles of pronotum and apex of elytra yellow-brown. Antennal segments I-V red-yellow, segment VI infusate, segments VII-X light, segment XI yellow-brown. Ventral surface yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. With very fine sparsely arranged punctures. Antennal club 5-segmented. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-0.8-1.0-1.2-1.8-2.0-2.4-2.4-2.2. Width : length ratios of antennal segments II-XI = 0.4-0.3-0.3-0.4-0.5-0.6-1.0-0.9-0.8-0.6.

Pronotum. With very rare fine very small, punctures. Posterior pronotal angles rectangular closely rounded on tip. In lateral view posterior angles rectangular with closely rounded tip.

Elytra. With very sparsely arranged strigosities separated approximately by 0.04 mm. With small punctures arranged in sometimes less regular rows. Punctures separated by about 4-6 times their own diameter medially and on disc. Punctures become smaller laterally and apically. Intervals with similar punctured rows with somewhat finer punctures. Sutural stria clearly impressed and extending approximately to elytral basal third.

Mesosternum. Mesosternal bump oblong, narrow, of type A.

Genitalia. Aedeagus as in Figs 22, 23, spermatheca as in Fig. 26.

**Variation.** Some paratypes dark chestnut with lighter coloured lateral margins of pronotum,

base of elytra, a strip along suture and with red-brown legs. Antennal colouring varies - some paratypes with antennal segments I-VI yellow-red, segments VII-X brown, segment XI brown with lighter apical half. Antennal segments VIII-X somewhat wider than long, rest of the antennal segments longer than wide in female.

**Differential diagnosis.** *Pseudocolenis michaeli* sp. n. belongs to the species subgroup comprising *P. picea* (Hisamatsu, 1964); *P. sinica* Angelini & Švec, 2000; *P. indica* (Portevin, 1926); *P. grandis* (Portevin, 1905); *P. yunnanica* sp. n.; *P. strigicollis* sp. n.; *P. fortepunctata* sp. n.; due to the characters mentioned in the key to the groups and subgroups of the genus. It differs from *P. picea* by distinctly larger size of body, from all other mentioned species by small and sparse elytral punctuation. Also the shape of the male and female genitalia in *P. michaeli* is distinguishing.

**Name derivation.** The new species is dedicated to its collector, Michael Schülke.

***Pseudocolenis jaegeri* sp. n.**

(Figs. 24, 44)

**Type material.** Holotype (♂): “Nepal, Kali Gandaki Tal, westl. oberh. Lete, degr. Rhododendronwald, 2900 m, 19.v.2002, leg. Jäger, BG N 28°57'24'' E 83°35'38''”, (ZMDC). Paratype (1 ♂): “Nepal, Kali Gandaki Tal, westl. oberh. Lete, Rhod-Tsuga Wald, 2650-2750 m, leg. Jäger, BG N 28°37'28'' E 83°35'45''”, (ZSPC).

**Description.** Total length 2.1-2.5 mm, in holotype 2.5 mm, head 0.2 mm, pronotum 0.7 mm, elytra 1.6 mm, antenna 1.0 mm. Maximum width of head 0.7 mm, pronotum 1.5 mm at base, elytra 1.6 mm at anterior fourth of elytral length.

Oval (as in Fig. 44). Head and elytra brown with light anterior part of clypeus and with lighter elytral base, margins and strip along suture. Pronotum brown with wide yellow-red margins. Head and pronotum opalescent. Antennae with segments VI-X black, segment XI light. Ventral surface red-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. Finely distinctly punctured; punctures separated by about 8-10 or more times their diameter. Antennal club 5-segmented. Segment VII enlarged. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.0-1.2-1.7-2.7-1.7-2.0-2.0-1.8. Width : length ratios of antennal segments II-XI = 0.5-0.5-1.0-1.2-1.7-0.9-1.3-1.0-1.0-0.6

Pronotum. Density of pronotal strigosity equal to that on head. Strigosity somewhat finer than on head. With small fine punctures separated by about 10 or more times their diameter. Posterior pronotal angles acute very closely rounded on tip. In lateral view posterior angles rectangular with closely rounded tip.

Elytra. With sparsely arranged strigosities separated approximately by 0.02 mm. Elytral punctures very small fine, arranged in feeble unobtrusive sometimes irregular rows. Sutural stria extending approximately to elytral basal fifth.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 24.

**Differential diagnosis.** *Pseudocolenis jaegeri* sp. n. is similar to *Pseudocolenis disparilis* Daffner, 1988 and *P. schuelkei* Švec, 2002 by possessing sparse strigose elytra, bump type A on mesosternum and enlarged antennal segment 7 in male. It differs from both species by density of pronotal strigosity equal as on head, while strigosity on pronotum is distinctly denser than on head in both of compared species. Also the aedeagi are different in all of the mentioned species.

**Name derivation.** The new species is dedicated to its collector Olaf Jäger.

***Pseudocolenis minor* sp. n.**

(Figs 25, 27, 45)

**Type material.** Holotype (♂): “ Nepal, Anapurna S-Himal, westl. Mardi Himal, nördl. Bhichok/Deurali, 2100 m, N 28°18'57, E 83°49'59, 10.v.2001, leg. O. Jäger”, (ZMDC). Paratype. (1 ♀): same data as in holotype, (ZMDC).

**Description.** Total length 2.2-2.5 mm, in holotype 2.5 mm, head 0.4 mm, pronotum 0.6 mm, elytra 1.5 mm, antenna 0.9 mm. Maximum width of head 0.7 mm, pronotum 1.3 mm at base, elytra 1.4 mm at anterior third of elytral length.

Broad oval (as in Fig. 45). Dorsum brown with lighter clypeus, antero-lateral margin of head, elytral margin and narrow strip along suture. Antennae with segments VI-X brown, segment XI yellow-red. Head and pronotum opalescent. Ventral surface yellow-brown. Dorsal surface entirely microsculptured by transverse strigosity.

Head. Very finely punctured; punctures rare, irregularly distributed. Antennal club 6-segmented. Segment VII strikingly enlarged. Relative width of antennal segments II-XI (segment II = 1.0): 1.0-1.0-1.2-1.2-1.7-2.7-1.5-1.8-2.2-1.8. Width : length ratios of antennal segments II-XI = 0.5-0.5-1.4-1.4-1.7-0.9-1.3-0.9-1.1-0.6.

Pronotum. With extremely small fine rare punctures. Posterior pronotal angles acute closely rounded on tip. In lateral view posterior angles rectangular with closely rounded tip.

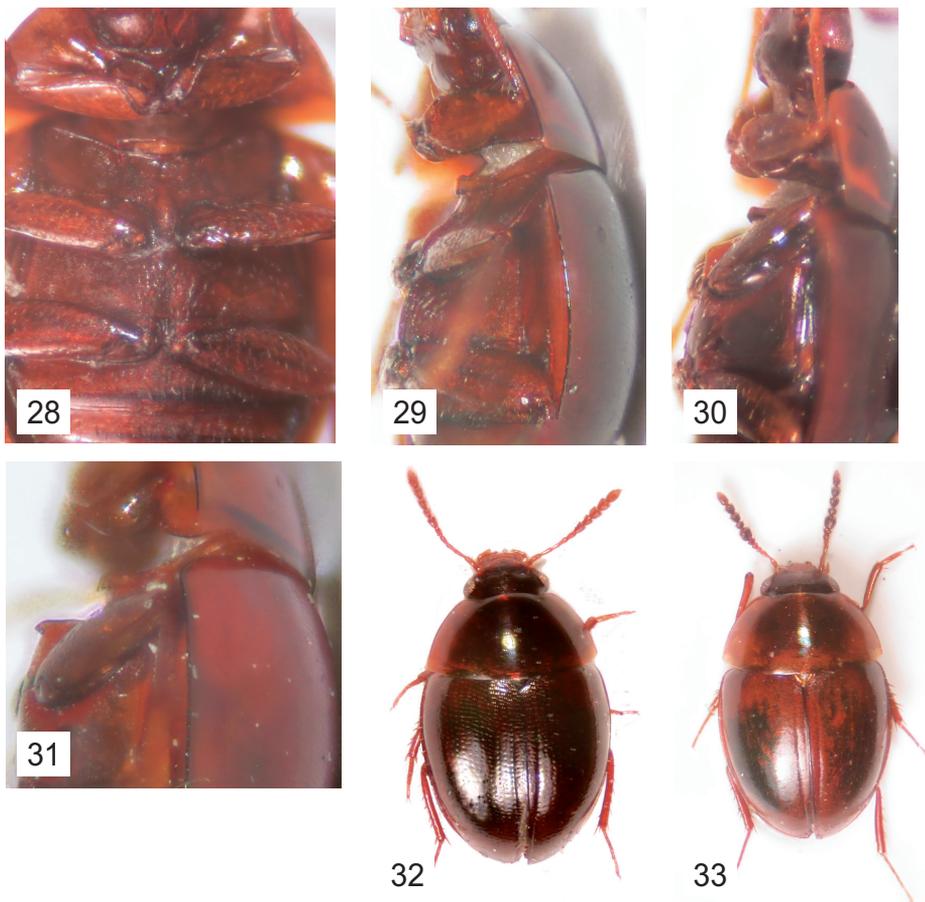
Elytra. With densely arranged strigosites separated approximately by 0.01 mm. Elytral punctures very small very fine, arranged in feeble unobtrusive rows in some places. Sutural stria extending approximately to elytral basal third.

Mesosternum. Mesosternal bump of type A.

Genitalia. Aedeagus as in Fig. 25, spermatheca as in Fig. 27.

**Variation.** Antennal segment VII not enlarged in female.

**Differential diagnosis.** *Pseudocolenis minor* sp. n. is similar to *P. acuminata* sp. n. by density of elytral strigosity, presence of mesosternal bump type A and strikingly enlarged antennal segment VII in male. It differs from *P. acuminata* by 6-segmented antennae that are 5-segmented in the compared species. Also the aedeagi and spermatheca are different in all of the both mentioned species.



Figs 28-33. Fig. 28: mesosternum, ventral view; 29-31: mesosternum lateral view; 32, 33: dorsal view on body. 28, 29- *Pseudolenis michaeli* sp. n.; 30- *P. interposita* sp. n.; 31- *P. carinata* sp. n.; 32- *P. yunnanica* sp. n.; 33- *P. acuminata* sp. n.

**Name derivation.** The Latin name of the new species reminds smaller size of the species in comparison for instance with *P. major* sp. n.

#### FAUNISTIC RECORDS

##### *Pseudolenis hilleri* Reitter, 1884

**Material examined.** “China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49’32’’N 98°46’06’’E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke”, 13 spec., (MSBC, ZSPC); “China, Jilin Prov., Bai He, 750-800 m,

N 42°24.092' E 128°06.437', 1.-6.vi.2004, J. Cooter", 1 spec., (JHC); "China, Shaanxi, Lueang env., 15 km NW, 26.-31.v.2001, leg. E. Kučera", 1 spec., (JHC).

**Distribution.** Japan, Far East of Russia, Korea, Nepal, China (Fujian, Jilin, Yunnan, Shaanxi). New for Yunnan, Shaanxi, Jilin.

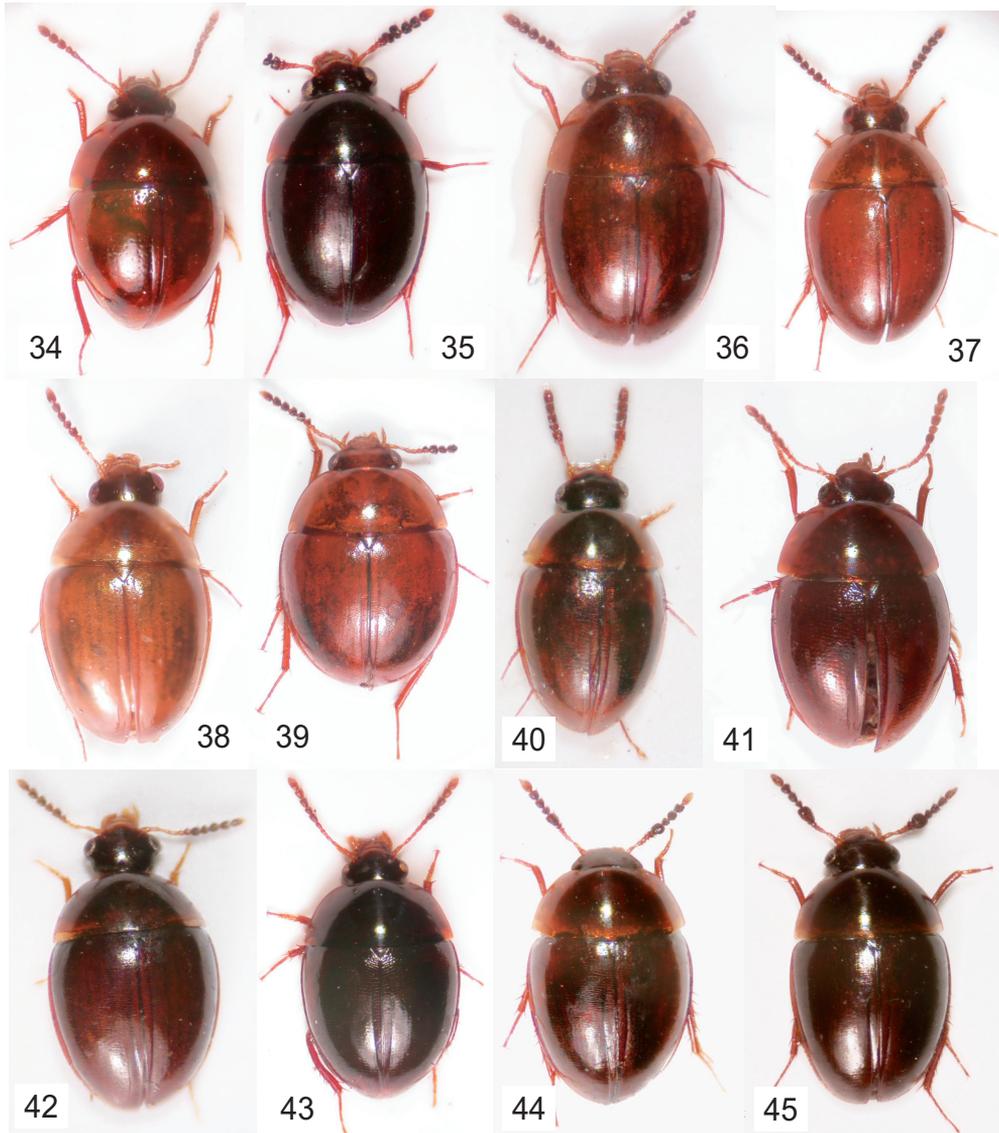
*Pseudocolenis rastrata* (Champion, 1923)

**Material examined.** "China: Yunnan [CH07-14], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51'22''N 98°45'36''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke", 11 spec., (MSBC, ZSPC); same data but 4.vi.2007, 9 spec., (MSBC, ZSPC); "China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke", 26 spec., (MSBC, ZSPC); "China: Yunnan [CH07-17], Baoshan Pref, mountain range 25 km S Tengchong, 1900 m, 24°48'28''N, 98° 32'03''E, dev. primary decid. forest, litter, fungi sifted, 2.vi.2007, M. Schülke", 3 spec., (MSBC, ZSPC); "China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz", 3 spec., (ZMDC); "China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16''N 98°45'43''E, decid. forest, litter sifted, 30.v.2007, leg. A. Pütz", 2 spec., (ZMDC, ZSPC); "China: Yunnan [CH07-11B], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16''N 98°45'43''E, decid. forest, litter sifted, 4.vi.2007, leg. A. Pütz", 1 spec., (ZMDC).

**Distribution.** India, China (Yunnan). New for Yunnan.

*Pseudocolenis dilatata* Angelini & Švec, 2000

**Material examined.** "China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, M. Schülke", 12 spec., (MSBC, ZSPC); "China: Yunnan [CH07-14A], Baoshan Pref., Gaoligong Shan, 33 km SE Tengchong, 2100-2200 m, 24°51'22''N 98°45'36''E, decid. forest, litter, wood, fungi sifted, 4.vi.2007, M. Schülke", 1 spec., (MSBC); "China: Yunnan [CH07-11A], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 25 km SE Tengchong, 2110 m, 24°50'16''N, 98°45'43''E, decid. forest, fungi, sifted. 4.vi.2007, M. Schülke", 1 spec., (MSBC); "China: Yunnan [CH07-17], Baoshan Pref, mountain range 25 km S Tengchong, 1900 m, 24°48'28''N, 98° 32'03''E, dev. primary decid. forest, litter, fungi sifted, 2.vi.2007, M. Schülke", 1 spec., (ZSPC); "China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan E pass, 36 km SE Tengchong, 2200 m, 24°49'32''N 98°46'06''E, decid. forest, litter, wood, fungi sifted, 31.v.2007, leg. A. Pütz", 4 spec., (ZMDC, ZSPC); "China: Yunnan [CH07-28], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 19 km NW Liuku, 25°59'02''N 98°42'23''E, 2730 m, devast. prim. forest, litter sifted, 9.vi.2007, leg. A.



Figs 34-45. Dorsal view of body (holotype except Fig. 41: paratype). 34- *Pseudocolenis schawalleri* sp. n., 35- *P. crassicornis* sp. n.; 36- *P. annulata* sp. n.; 37- *P. major* sp. n.; 38- *P. flaveola* sp. n.; 39- *P. carinata* sp. n. 40- *P. strigicollis* sp. n.; 41- *P. fortepunctata* sp. n.; 42- *P. interposita* sp. n.; 43- *P. michaeli* sp. n.; 44- *P. jaegeri* sp. n.; 45- *P. minor* sp. n.

Pütz”, 1 spec., (ZMDC); “China: W-Sichuan, Ya’an Pref., Shimian Co., Xiaoxiang Ling, pass betw. Shimian-Ganluo, 27 SE Shimian, 2450 m, springfed-swamp, 29.02.75, 102.31.48 E, 8.vii.1999, leg. A. Pütz”, 2 spec., (ZMDC).

**Distribution.** China (Sichuan, Shaanxi, Hubei, Yunnan). New for Yunnan.

### *Pseudocolenis laticornis* Angelini & Švec, 2000

**Material examined.** “China: Yunnan [CH07-17], Baoshan Pref, mountain range 25 km S Tengchong, 1900 m, 24°48'28''N, 98° 32'03''E, dev. primary decid. forest, litter, fungi sifted, 2.vi.2007, M. Schülke”, 3 spec., (MSBC, ZSPC).

**Distribution.** China (Hubei, Shaanxi, Yunnan). New for Yunnan.

### *Pseudocolenis neglecta* Angelini & Švec, 2000

**Material examined.** “China (N.Yunnan), Lijiang Naxi Aut. Co., E Yulongxue Shan, 30 km N Lijiang, 2800-2900 m, 27°09.0'N/100°14.9'E, creek valley, secondary mixed forest, 13.viii.2003, Wrase [01]”, 1 spec., (JCHC).

**Distribution.** China (Sichuan, Yunnan, Hubei, Yunnan). New for Yunnan.

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