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Four new species of *Scymnus* Kugelann from China

(Insecta, Coleoptera, Coccinellidae)

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Four new species of *Scymnus* Kugelann from China are described: *Scymnus (Pullus) fanjingicus*, *S. (P.) heptaspilicus*, *S. (P.) klinosiphonicus*, *S. (P.) spirosiphonicus*.

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The present paper gives descriptions of four new species of *Scymnus* Kugelann, collected at Mt. Fangjing, Guizhou Province, China, by Ren Shunxiang and Tian Mingyi (July 1990) and at Mt. Fenchihu, Taiwan, China, by Klapperich (April to June 1977). Type specimens are deposited in the South China Agricultural University, Guangzhou, China (SCAU) and in the Zoologische Staatssammlung München, Germany (ZSM).

Scymnus (Pullus) fanjingicus, spec. nov.

Figs 1-7

Types. Holotype: ♂, No. 900261-1, Mt. Fanjing, Guizhou Province, China, 21-VII-1990, Ren Shunxiang leg. (SCAU). - Allotype: ♀, No. 900266-8, same data as holotype (SCAU). - Paratypes: 4♂♂, 2♀♀, same data as holotype; 1♂, same locality as holotype, Tian Mingyi leg. (SCAU); Mt. Fenchihu, Taiwan, China, 3♂♂, 7♀♀, 9-IV-1977, 1♂, 2♀♀, 11-IV-1977, J. Klapperich leg. (SCAU); Mt. Fenchihu, Taiwan, China, 3♀♀, 10-IV-1977, 3♂♂, 15-IV-1977, 1♂, 3♀♀, 23-IV-1977, 1♂, 2♀♀, 30-IV-1977, 1♂, 8-V-1977, 4♀♀, 10-V-1977, 1♀, 14-V-1977, 1♀, 19-V-1977, 2♂♂, 3♀♀, 25-V-1977, 1♂, 1♀, 30-V-1977, 3♂♂, 5♀♀, 3-VI-1977, 1♂, 1♀, 7-VI-1977, 3♀♀, 13-VI-1977, J. Klapperich leg. (ZSM).

Description

Length: 2.29-2.55 mm; width: 1.66-1.77 mm.

Form elongately oval in outline, moderately convex with dorsal pubescence yellowish-white. Head yellow with eyes greyish-brown. Mouthparts brown with tip of mandible dark brown. Pronotum, scutellum, and elytra brown (Fig. 1). Prosternum and hypomeron yellowish-brown; meso- and metasternum dark brown. Abdomen yellowish-brown with the anterior process of 1st abdominal sternum dark brown. Legs yellowish-brown.

Punctures on head fine and spare, separated by 1.5-2 × their diameter; pronotal punctures coarser than those on head, separated by 1-1.5 × their diameter; elytral punctures coarser than those on pronotum, separated by about their diameter; each elytron with two rows of coarse punctures on disc. Prosternum with intercoxal carinae extending to anterior margin, slightly convergent anteriorly, length about 3 × width at base. Postcoxal line complete, almost extending to hind margin of 1st abdominal sternum, the middle of external side very week; area surrounded by postcoxal line irregularly punctate, smooth along postcoxal line (Fig. 3).

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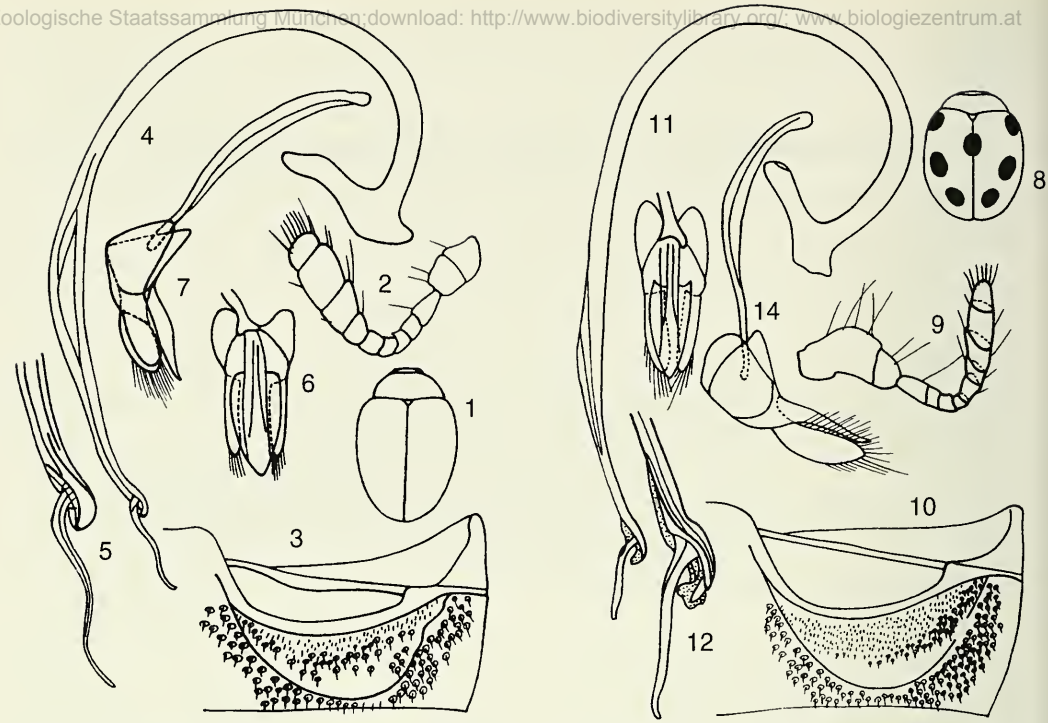

Figs 1-7. *Scymnus (Pullus) fanjingicus*, spec. nov. 1. Outline of body. 2. Antenna. 3. 1st abdominal sternum. 4. Sipho. 5. Apex of sipho. 6. Tegmen, ventral aspect. 7. Tegmen, lateral aspect.
Figs 8-14. *Scymnus (Pullus) heptaspilicus*, spec. nov. 8. Outline of body. 9. Antenna. 10. 1st abdominal sternum. 11. Sipho. 12. Apex of sipho. 13. Tegmen, ventral aspect. 14. Tegmen, lateral aspect.

Male genitalia. Sipho very stout, with long inner process and indistinct outer process of siphonal capsule, about 1/3 of siphonal apex slightly expanded, siphonal apex curved with a thread-like appendix (Figs 4-5). Tegmen moderately stout with lateral lobes distinct shorter than median piece (Figs 6-7).

Remarks: This new species is similar to *S. (P.) prostylotus* Pang & Huang 1985 and *S. (P.) ursulus* Fürsch 1975 in body colouration and sipho of male genitalia, but *S. (P.) prostylotus* has postcoxal line extending to about 3/4 length of 1st abdominal sternum; sipho with very stout outer process and relatively slender inner process of siphonal capsule, and siphonal apex with a prostyle poiting straight to outside; median piece of tegmen oval in ventral aspect, and nearly equal to lateral lobes in length. *S. (P.) ursulus* has tegmen of male genitalia with narrowly and strongly tapered apically lateral lobes and slightly broadened median piece in lateral aspect.

Scymnus (Pullus) heptaspilicus, spec. nov.
Figs 8-14

Types. Holotype: ♂, No. 900264-1, Mt. Fanjing, Guizhou Province, China, 21-VII-1990, Ren Shunxiang leg. (ZSM). - Allotype: ♀, No. 900264-6, same data as holotype, Tian Mingyi leg. (ZSM). - Paratypes: 5♂♂, same data as holotype; 1♂, 2♀♀, same data as allotype (SCAU).

Description

Length: 2.29-3.14 mm; width: 1.71-2.34 mm.

Form shortly oval in outline, moderately convex with dorsal pubescence yellowish-white. Head yellowish-brown except for black eyes and black tip of mandible. Pronotum reddish-yellow. Elytra

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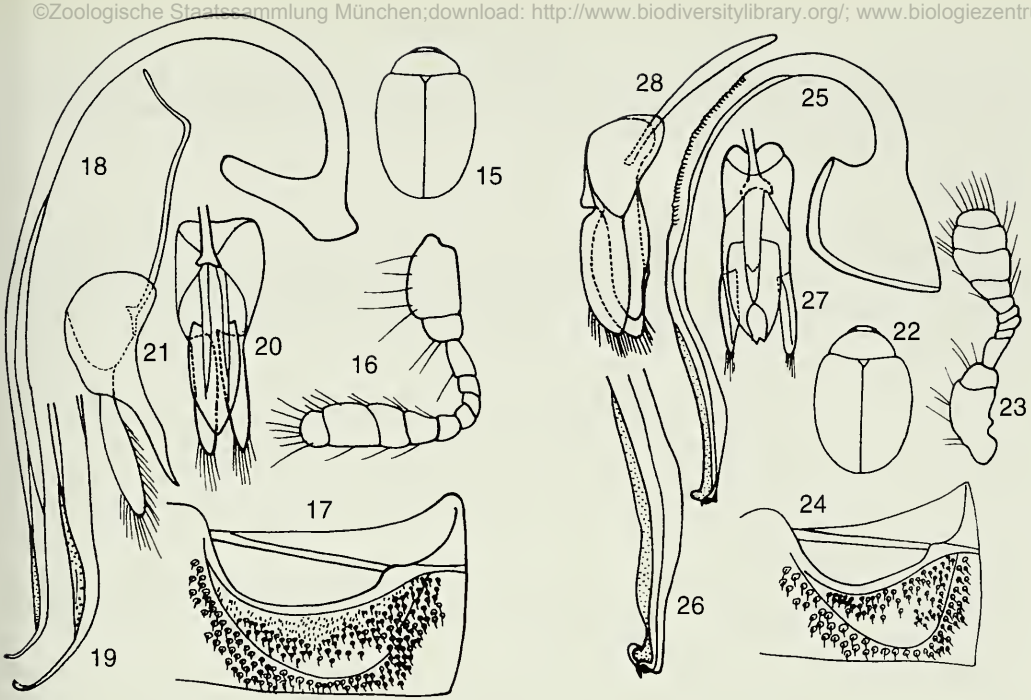

Figs 15-21. *Scymnus (Pullus) klinosiphonicus*, spec. nov. 15. Outline of body. 16. Antenna. 17. 1st abdominal sternum. 18. Sipho. 19. Apex of sipho. 20. Tegmen, ventral aspect. 21. Tegmen, lateral aspect.
Figs 22-28. *Scymnus (Pullus) spirosiphonicus*, spec. nov. 22. Outline of body. 23. Antenna. 24. 1st abdominal sternum. 25. Sipho. 26. Apex of sipho. 27. Tegmen, ventral aspect. 28. Tegmen, lateral aspect.

reddish-brown with 7 nearly round dark brown spots, of which a pair of anterior spots is situated at humera and hardly reaches the lateral margin; a pair of central spots situated at middle of elytron; a pair of posterior spots situated at 5/6 of elytron; a sutural spot situated at anterior 1/3 of suture (Fig. 8). Venter dark brown except for prosternum yellow. Legs yellow.

Punctures on head fine, separated by about their diameter; pronotal punctures coarser than those on head, separated by 1-1.5 × their diameter; elytral puncture coarser than those on pronotum, separated by 0.5-1 × their diameter; each elytron with two rows of coarse punctures on disc. Prosternum with intercoxal carinae extending to anterior margin, slightly convergent anteriorly, length about 3 × width at base. Postcoxal line complete, almost extending to 5/6 length of 1st abdominal sternum, the middle of external surface very week; area surrounded by postcoxal line irregularly punctate, very broadly smooth along postcoxal line (Fig. 10).

Male genitalia. Sipho long and very stout, with long inner process and indistinct outer process of siphonal capsule, and apex of sipho distinctly curved with a sword-like appendix (Figs 11-12). Tegmen very stout with lateral lobes slightly shorter than median piece (Figs 13-14).

Remarks. This new species is similar to *S. (P.) mongolicus* Weise 1890, but the latter has characteristic lateral lobes of tegmen which are breached at base in lateral aspect, and it is very narrowly smooth along postcoxal line.

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Scymnus (Pullus) klinosiphonicus, spec. nov.
Figs 15-21

Types. Holotype: ♂, No. 900265-1, Mt. Fanjing, Guizhou Province, China, 21-VII-1990, Ren Shunxiang leg. (ZSM). - Allotype: ♀, No. 900265-2, same data as holotype (ZSM).

Description

Length: 2.46-2.63 mm; width: 1.66-1.89 mm.

Form elongately oval in outline, moderately convex with dorsal pubescence yellowish-white. Head yellow with eyes greyish-brown. Mouthparts brown with tip of mandible dark brown. Pronotum, scutellum and elytra brown (Fig. 15). Prosternum and hypomeron yellowish-brown; meso- and metasternum dark brown. Abdomen yellowish-brown with the anterior process of 1st abdominal sternum dark brown. Legs yellowish-brown.

Punctures on head fine, separated by 1-1.5 × their diameter; pronotal punctures coarser than those on head, separated by about their diameter; elytral punctures coarser than those on pronotum, separated by 1-1.5 × their diameter; each elytron with two rows of coarse punctures on disc. Prosternum with intercoxal carinae extending to anterior margin, slightly convergent anteriorly, length about 2.5 × width at base. Postcoxal line complete, extending to about 6/7 of length of 1st abdominal sternum, the middle of external surface very week; area surrounded by the postcoxal line irregularly punctated, smooth along postcoxal line (Fig. 17).

Male genitalia. Sipho long and stout, with long inner process and indistinct outer process of siphonal capsule, siphonal apex distinctly bent outside (Figs 18-19). Tegmen moderately stout with lateral lobes slightly shorter than median piece (Figs 20-21).

Remarks. This new species is similar to *S. (P.) impexus* Mulsant, 1850 and *S. (P.) bengalicus* Canepari, 1986, but it can easily be distinguished from *S. (P.) impexus* by siphonal apex distinctly bent outside, and by length of median piece as compared with lateral lobes relatively shorter. *S. (P.) bengalicus* is more oval-shaped, the siphonal capsule is nearly shuttle-shape, and it is smaller (1.65-1.95 mm).

Scymnus (Pullus) spirosiphonicus, spec. nov.
Figs 22-28

Types. Holotype: ♂, No. 900267-1, Mt. Fanjing, Guizhou Province, China, 21-VII-1990, Ren Shunxiang leg. (SCAU). - Allotype: ♀, No. 900267-2, same data as holotype (SCAU).- Paratype: 1♂, same data as holotype (SCAU).

Description

Length: 1.66-1.94 mm; width: 1.20-1.31 mm.

Form elongately oval in outline, moderately convex with dorsal pubescence yellowish-white. Head yellow with eyes greyish-brown. Mouthparts brown with tip of mandible yellowish-brown; meso- and metasternum dark brown. Abdomen yellowish-brown with the anterior process of 1st abdominal sternum dark brown. Legs yellowish-brown.

Punctures on head fine, separated by 1-1.5 × their diameter; pronotal punctures coarser than those on head, separated by about their diameter; elytral puncture coarser than those on pronotum, separated by about 0.5-1 × their diameter. Prosternum with intercoxal carinae extending to anterior margin, slightly convergent anteriorly, length about 3 × width at base. Postcoxal line complete, extending to 6/7 of length of 1st abdominal sternum, very curved; area surrounded by postcoxal line irregularly and sparsely punctate, broadly smooth on inner part of postcoxal line (Fig. 24).

Male genitalia. Sipho very stout, with extremely expanded siphonal capsule, and with many whorls in middle of sipho (Figs 25-26). Tegmen very stout with asymmetrical median piece, lateral lobes slightly shorter than median piece (Figs 27-28).

Remarks. This new species is similar to *S. (P.) syoitii* Sasaji, 1971, but it can be easily distinguished from the latter by the extremely expanded siphonal capsule and the asymmetrical median piece of tegmen.

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