

RESEARCH PAPER

Three new species of the genus *Sphaerobulbus* from China (Coleoptera: Staphylinidae)

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Abstract. Three new species of the genus *Sphaerobulbus* Smetana, 2003 from China are described: *S. smetanai* sp. nov. from Sichuan, *S. guangxiensis* sp. nov. from Guangxi and *S. ningliei* sp. nov. from Yunnan. Diagnostic characters for the new species are illustrated. An updated key to species of *Sphaerobulbus* is provided, and habitus photos of most *Sphaerobulbus* species are provided.

Key words. Coleoptera, Staphylinidae, *Sphaerobulbus*, new species, identification key, China

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Introduction

Sphaerobulbus, established by SMETANA (2003), is a small genus with 17 known species. Presently, the genus is only known from China (Sichuan, Yunnan, Xizang, Qinghai, Shaanxi, Guangxi, Guizhou and Hubei). The species of the genus may be easily distinguished by having the mandibles each with one tooth and the aedeagal bulb sclerotized in the basal half as seen from the dorsal view. In this paper, three new *Sphaerobulbus* species from China are described. Thus, the total number of *Sphaerobulbus* is increased to 20.

Up to the present, all the specimens were collected from the forests of montane areas. Three quarters of species are lacking the apical palisade fringe on abdominal tergites VII. This character may imply the hind wings of those species are degenerated, and their distributions may be limited to relatively small regions. The biological information of the genus is poorly known. The specimen of *S. ningliei* sp. nov. was captured after spotting it crawling on a stone step in the afternoon. The specimens of *S. guangxiensis* sp. nov. were found dead in pitfall traps in the morning of the second day. Thus we infer that the species of the genus may be active at both daytime and night.

Material and methods

The specimens examined in this paper were collected by pitfall traps and sifting leaf litter in forests. For examination of the genitalia, the last three abdominal segments were detached from the body after softening in hot water. The aedeagus or tergite X, together with other dissected pieces, were mounted in Euparal (Chroma Gesellschaft Schmidt, Koengen, Germany) on plastic slides. Photos of sexual characters were taken with a Canon G9 camera attached to an Olympus SZX 16 stereoscope; habitus photos were taken with a Canon macro photo lens MP-E 65 mm attached to a Canon EOS7D camera and stacked with Zerene Stacker.

The specimens treated in this study are deposited in the Department of Biology, Shanghai Normal University, P. R. China (SHNU).

Body measurements are abbreviated as follows:

| | |
|-----|---|
| BL | body length, measured from the anterior margin of the clypeus to the posterior margin of abdominal tergite X; |
| EL | length of elytra, measured from humeral angle; |
| EW | width of elytra at the widest point; |
| EYL | length of eye; |
| FL | forebody length, measured from the anterior margin of the clypeus to the apex of the elytra (apicolateral angle); |
| HL | length of head along the midline; |



| | |
|----|--|
| HW | width of head including eyes; |
| PL | length of pronotum along the midline; |
| PW | width of pronotum at the widest point; |
| TL | length of tempora. |

Taxonomy

Sphaerobulbus smetanai sp. nov.

(Figs 1, 2, 7–12)

Type material. HOLOTYPE: CHINA: SICHUAN: ♂, glued on a card with labels as follows: “China: Sichuan Prov. Shimian County, Liziping, Yele Dam, 28°55'N, 102°13'E, alt. 2600m, 15.VII.2012, Peng & Yin leg.” “Holotype / *Sphaerobulbus smetanai* / Zhao & Tang” [red handwritten label] (SHNU). PARATYPES: 1 ♂ 1 ♀, same as for the holotype (SHNU).

Description. Measurements of male: BL: 13.8–16.8 mm, FL: 7.2–7.8 mm, HL: 1.79–2.15 mm, HW: 2.29–2.40 mm, EYL: 0.61–0.69 mm, TL: 0.86–0.99 mm, PL: 2.68–3.06 mm, PW: 2.15–2.41 mm, EL: 2.23–2.60 mm, EW: 2.62–2.98 mm, HW/HL: 1.12–1.28, TL/EYL: 1.41–1.43, PL/PW: 1.24–1.27, EL/EW: 0.85–0.87.

Measurements of female: BL: 15.6 mm, FL: 7.0 mm, HL: 2.02 mm, HW: 2.34 mm, EYL: 0.57 mm, TL: 0.87 mm, PL: 2.74 mm, PW: 2.23 mm, EL: 2.42 mm, EW: 2.75 mm, HW/HL: 1.15, TL/EYL: 1.50, PL/PW: 1.23, EL/EW: 0.88.

Forebody with dorsal side metallic blue, ventral side reddish brown except for head which is distinctly darker, abdomen reddish brown except for tergites III–VII which are darker and with faint metallic tint in middle portion; appendages light reddish brown.

Head 1.12–1.28 times as wide as long, rounded quadrangular, posterior angles less rounded, tempora longer than eyes (ratio 1.41–1.50), disc with dense and coarse punctures, interstices densely reticulated, narrower than half diameter of punctures in posterior half, equal to or slightly wider than half diameter of punctures in anterior half.

Pronotum 1.23–1.27 times as long as wide, widest in about middle, disc with narrow impunctate midline; punctation somewhat confluent, slightly smaller than that of head, interstices similar to those in posterior half of head; scutellum finely and densely punctate, with black pubescence.

Elytra 0.85–0.88 times as long as wide, shorter than pronotum (ratio 0.83–0.88); punctation quite fine and dense, interstices slightly dull with coarse granulose microsculpture.

Abdomen semi-cylindrical, posterior margin of tergite VII without palisade fringe; posterior basal line of abdominal tergites III–V distinctly bisinuate, median impression after posterior basal line relatively shallow; punctation dense and fine, interstices reticulated.

Male. Stemite VIII emarginate at middle of posterior margin; sternite IX (Fig. 7) emarginate medioapically; tergite X (Fig. 8) subtrapeziform. Aedeagus (Fig. 9) with median lobe distinctly asymmetrical and sharply pointed at apex, paramere a little asymmetrical, slightly shorter than median lobe, underside of paramere (Figs 10, 11) with three degenerated sensory peg setae in subapical portion.

Female. Tergite X (Fig. 12) subtriangular with apex somewhat obtuse.

Differential diagnosis. The new species can be readily distinguished from other species by its metallic blue forebody (shared with *S. ningliei* sp. nov. and *S. cardinalis* Smetana, 2010). From the latter two species, *S. smetanai* differs in the reddish brown abdomen (blackish with metallic blue tint in *S. ningliei* and *S. cardinalis*) and abdominal tergites VII without an apical palisade fringe (with apical palisade fringe in *S. ningliei* and *S. cardinalis*).

Etymology. This species is named in honor of Dr. Aleš Smetana who established the genus *Sphaerobulbus*.

Distribution. China (Sichuan).

Sphaerobulbus guangxiensis sp. nov.

(Figs 3, 4, 13–18)

Type material. HOLOTYPE: CHINA: XIZANG: ♂, glued on a card with labels as follows: “China: Guangxi Prov. Xing’an County, Mao’ershan N. R., 25°51'49.19"N 110°25'02.72"E, alt. 2100 m, 9–11.VII.2011, Tang & He leg.” “Holotype / *Sphaerobulbus guangxiensis* / Zhao & Tang” [red handwritten label] (SHNU). PARATYPE: 1 ♀, same as for the holotype (SHNU).

Description. Measurements of male: BL: 20.0 mm, FL: 11.1 mm, HL: 2.98 mm, HW: 3.21 mm, EYL: 0.75 mm, TL: 1.57 mm, PL: 4.10 mm, PW: 3.14 mm, EL: 4.18 mm, EW: 4.17 mm, HW/HL: 1.08, TL/EYL: 1.97, PL/PW: 1.30, EL/EW: 1.00.

Measurements of female: BL: 22.5 mm, FL: 11.3 mm, HL: 3.06 mm, HW: 3.30 mm, EYL: 0.77 mm, TL: 1.68 mm, PL: 4.35 mm, PW: 3.41 mm, EL: 4.31 mm, EW: 4.3 mm, HW/HL: 1.08, TL/EYL: 2.18, PL/PW: 1.28, EL/EW: 1.00.

Body black, maxillary and labial palpi dark brown, antennae dark brown, becoming gradually paler apicad; legs dark brown with tibiae and tarsi somewhat reddish.

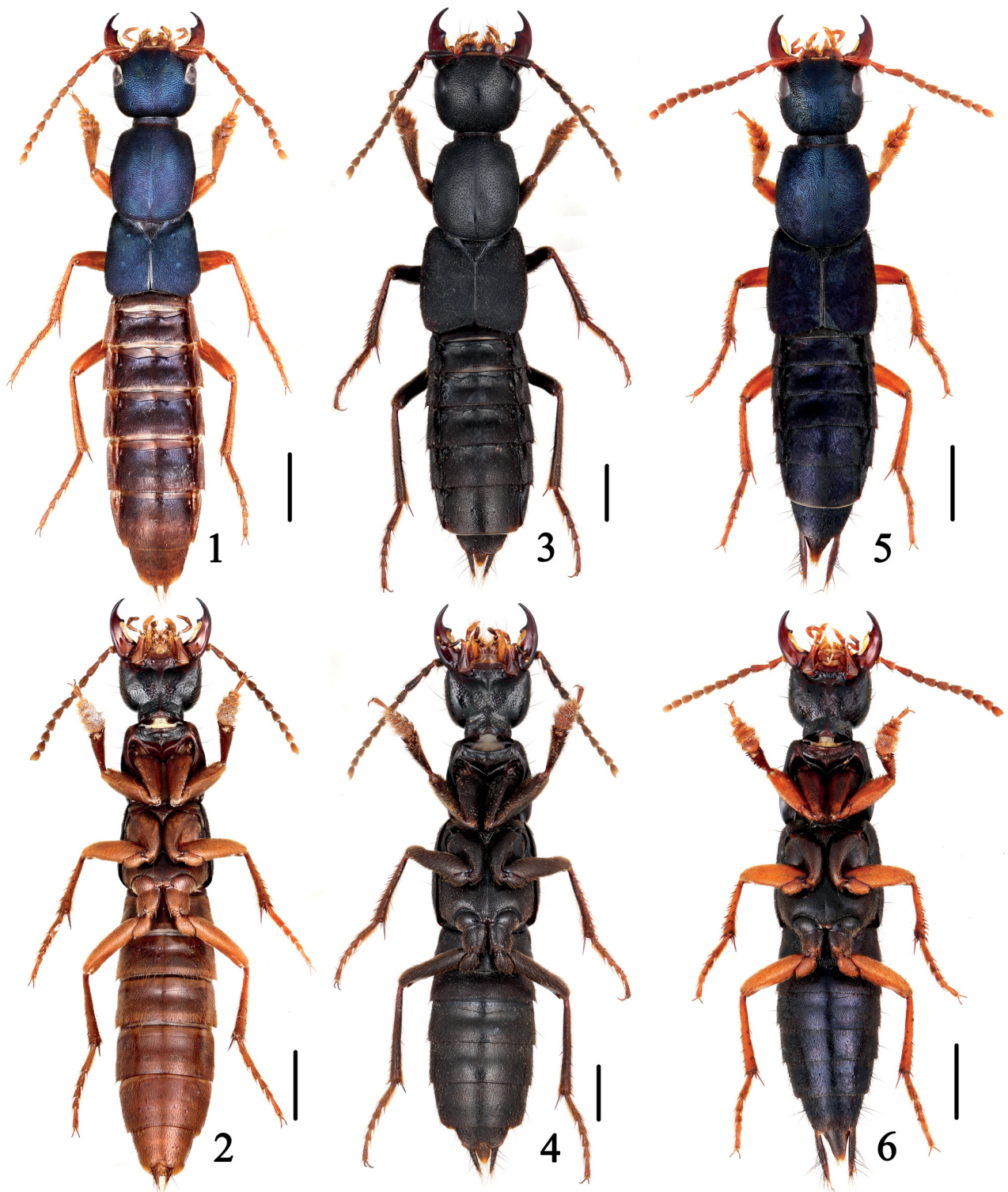
Head 1.08 times as wide as long, rounded quadrangular, posterior angles less rounded, tempora longer than eyes (ratio 1.97–2.18), middle portion with short impunctate midline, disc with dual punctation, smaller punctation mainly on median portion, most punctures well delimited, interstices densely reticulated, narrower than the diameter of punctures on middle and midanterior portions and narrower than half diameter of punctures on remaining portions.

Pronotum 1.28–1.30 times as long as wide, widest point a little before basal half, disc with impunctate midline; punctation of middle and midanterior portions similar to larger punctation of head, punctation near lateral and posterior margins more or less confluent, interstices similar to that of head; scutellum with black pubescence, finely and densely punctate.

Elytra as long as wide and nearly as long as pronotum (ratio 0.99–1.02); punctation quite fine and dense, interstices quite dull with coarse granulose microsculpture.

Abdomen semi-cylindrical, posterior margin of tergite VII with palisade fringe; abdominal tergites III–V each with posterior basal line distinctly bisinuate, and a median impression after posterior basal line which is delimited by two short oblique carinae laterally; punctation of tergites fine and dense, interstices reticulated.

Male. Sternite VIII with triangular emargination in the middle of posterior margin; sternite IX (Fig. 13) with deep



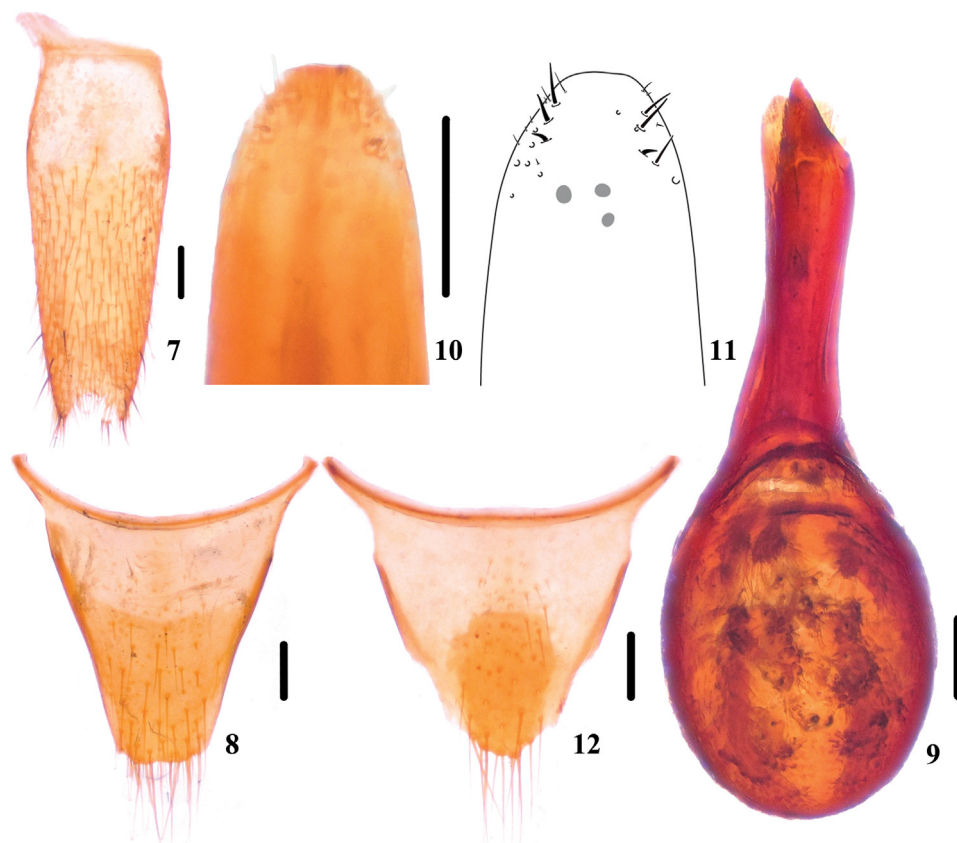
Figs 1–6. Habitus of species of *Sphaerobulbus*. 1, 2 – *S. smetanai* sp. nov. (holotype); 3, 4 – *S. guangxiensis* sp. nov. (holotype); 5, 6 – *S. ningliei* sp. nov. (holotype). Scale bars: 2 mm.

apical emargination; tergite X (Fig. 14) subtriangular. Aedeagus (Fig. 15) with median lobe distinctly asymmetrical and sharply pointed at apex, paramere nearly symmetrical, as long as median lobe, underside of paramere (Figs 16, 17) with five degenerated sensory peg setae in subapical portion.

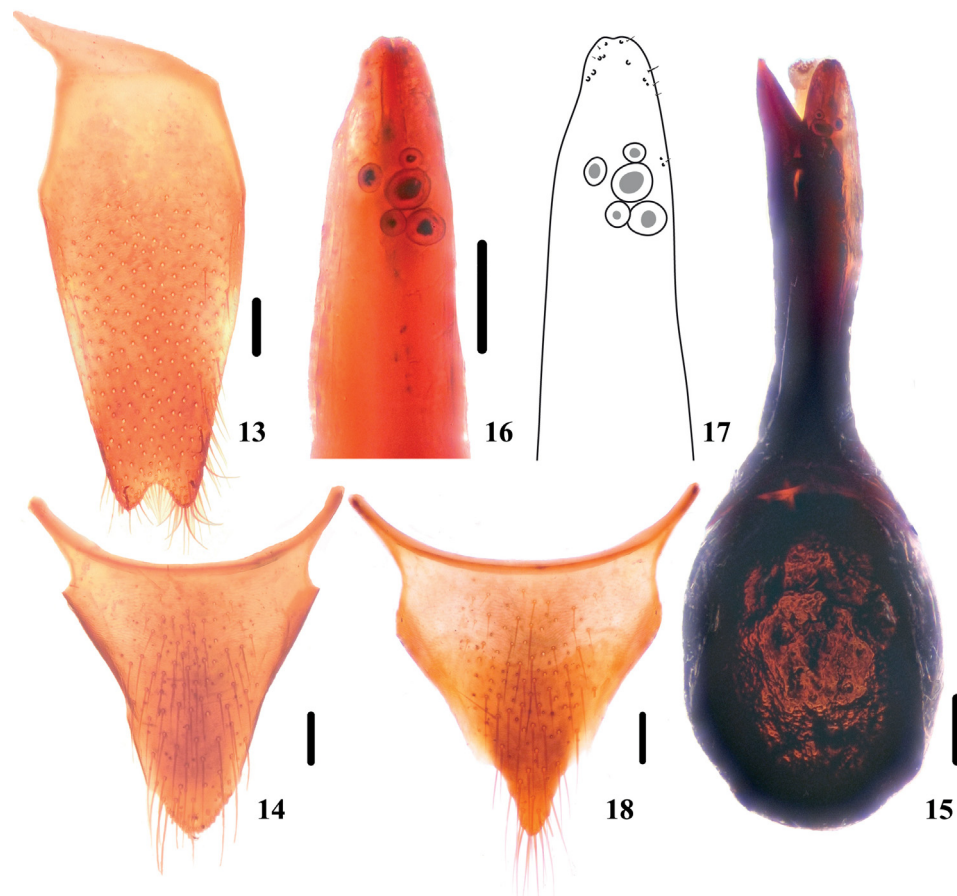
Female. Tergite X (Fig. 18) subtriangular with apex pointed.

Differential diagnosis. The new species is very similar to *S. rex* Smetana, 2005 from Shaanxi, Hubei and Sichuan,

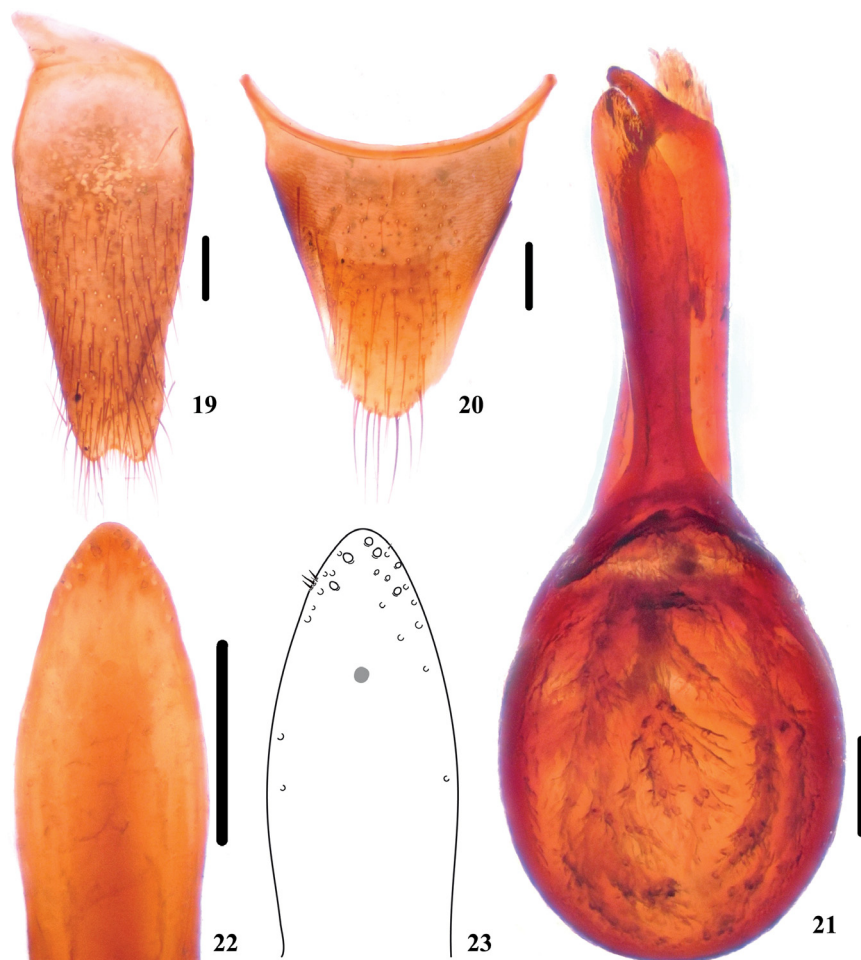
and the only difference of external characters between them is minute: head is 1.08 times as wide as long in *S. guangxiensis* while it is as long as wide in *S. rex*. A reliable identification should be made based on the shape of the aedeagus: paramere is symmetrical with five degenerated sensory peg setae on its underside in *S. guangxiensis* while the paramere is asymmetrical with three degenerated sensory peg setae on its underside in *S. rex*. SMETANA (2016) mentioned new distributional records of Guizhou and



Figs 7–12. *Sphaerobulbus smetanai* sp. nov; 7 – male abdominal sternite IX; 8 – male abdominal tergite X; 9 – aedeagus in ventral view; 10, 11 – underside of apical paramere; 12 – female abdominal tergite X. Scale bars: 0.2 mm.



Figs 13–18. *Sphaerobulbus guangxiensis* sp. nov; 13 – male abdominal sternite IX; 14 – male abdominal tergite X; 15 – aedeagus in ventral view; 16, 17 – underside of apical paramere; 18 – female abdominal tergite X. Scale bars: 0.2 mm.



Figs 19–23. *Sphaerobulbus ningliei* sp. nov.; 19 – male abdominal sternite IX; 20 – male abdominal tergite X; 21 – aedeagus in ventral view; 22, 23 – underside of apical paramere. Scale bars: 0.2 mm.

Guangxi for *S. rex* without dissection. The specimen of *S. rex* from Guangxi is from the exact locality, Mao'ershan, of *S. guangxiensis*, thus the distribution of *S. rex* in Guangxi is most likely a mistake, and the distribution of *S. rex* in Guizhou is doubtful.

Etymology. The specific name is derived from the type locality of this species.

Distribution. China (Guangxi).

***Sphaerobulbus ningliei* sp. nov.**

(Figs 5, 6, 19–23)

Type material. HOLOTYPE: CHINA: YUNNAN: ♂, glued on a card with labels as follows: “China: Yunnan Prov. Binchuan County, Jizu Shan, 25°57'41.76"N 100°23'36.38"E, alt. 3000 m, 16.VII.2010, Liang Tang leg.” “Holotype / *Sphaerobulbus ningliei* / Zhao & Tang” [red handwritten label] (SHNU).

Description. Measurements of male: BL: 14.2 mm, FL: 7.7 mm. HL: 2.06 mm, HW: 2.18 mm, EYL: 0.59 mm, TL: 1.00 mm, PL: 2.88 mm, PW: 2.55 mm, EL: 2.89 mm, EW: 2.95 mm. HW/HL: 1.05, TL/EYL: 1.69, PL/PW: 1.13, EL/EW: 0.98.

Body entirely blackish with metallic blue tint, appendages reddish except mid and hind coxae darker.

Head 1.05 times as wide as long, rounded quadrangular, posterior angles entirely rounded, tempora longer than eyes

(ratio 1.69), disc with punctation well delimited on middle portion and more or less confluent on lateral portions, posterior half of head with impunctate midline, interstices densely reticulated, about equal to diameter of punctures on midanterior portion and mostly narrower than half diameter of punctures on the remaining portions.

Pronotum 1.13 times as long as wide, widest at about basal third, disc with complete impunctate midline, punctation confluent, interstices reticulated, narrower than half diameter of punctures; scutellum with black pubescence, finely and densely punctate.

Elytra 0.98 times as long as wide and as long as pronotum; punctation fine and dense, interstices slightly dull with coarse granulose microsculpture.

Abdomen semi-cylindrical, posterior margin of tergite VII with palisade fringe; posterior basal line of abdominal tergites III–V distinctly bisinuate, median impression after posterior basal line relatively shallow; punctation dense and fine, interstices reticulated.

Male. Sternite VIII emarginate at middle of posterior margin; sternite IX (Fig. 19) emarginate medioapically; tergite X (Fig. 20) subtriangular with apex obtusely pointed. Aedeagus (Fig. 21) with median lobe asymmetrical, apical portion hook-like and pointing to left side in ventral view, paramere slightly asymmetrical, slightly shorter than

median lobe, underside of paramere (Figs 22, 23) with a few sensory peg seta in apical portion and one degenerated sensory peg seta at middle of subapical portion.

Female. Unknown.

Differential diagnosis. The new species is similar to *S. cardinalis* Smetana, 2010 from Sichuan and Yunnan, but can be distinguished from the latter by the posterior angles of the head being rounded (slightly prominent in *S. cardinalis*), the posterior half of the head with the impunctate midline broad (narrow in *S. cardinalis*), the apical portion of the aedeagal median lobe hook-like, and the underside of the paramere with sparser sensory peg setae. Both species seem to differ also in the degree of metallic tint in some cases (compare Figs 5 and 26), but this character seems to be variable in *S. cardinalis* which can also exhibit a bluish-purple tint (A. Smetana, pers. comm. 2020) and the coloration is hence not useful as a diagnostic character. The new species is also a little similar to *S. smetanai* described above in coloration, but it can be distinguished by the head with an impunctate midline, the elytra distinctly longer, and the abdomen distinctly darker in coloration.

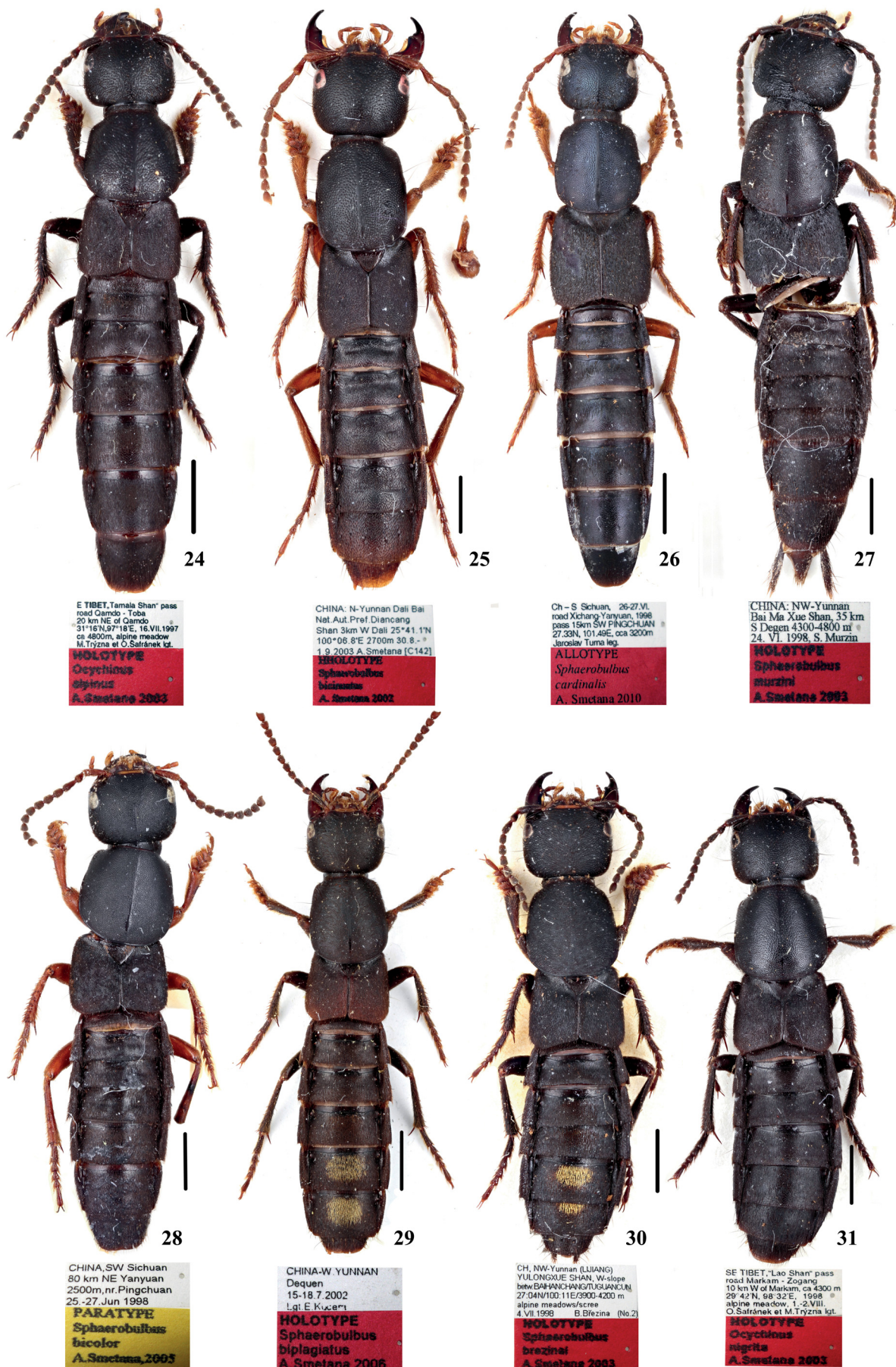
Etymology. This species is named in honor of Mr. Lie Ning who accompanied the second author during the collecting trip.

Distribution. China (Yunnan).

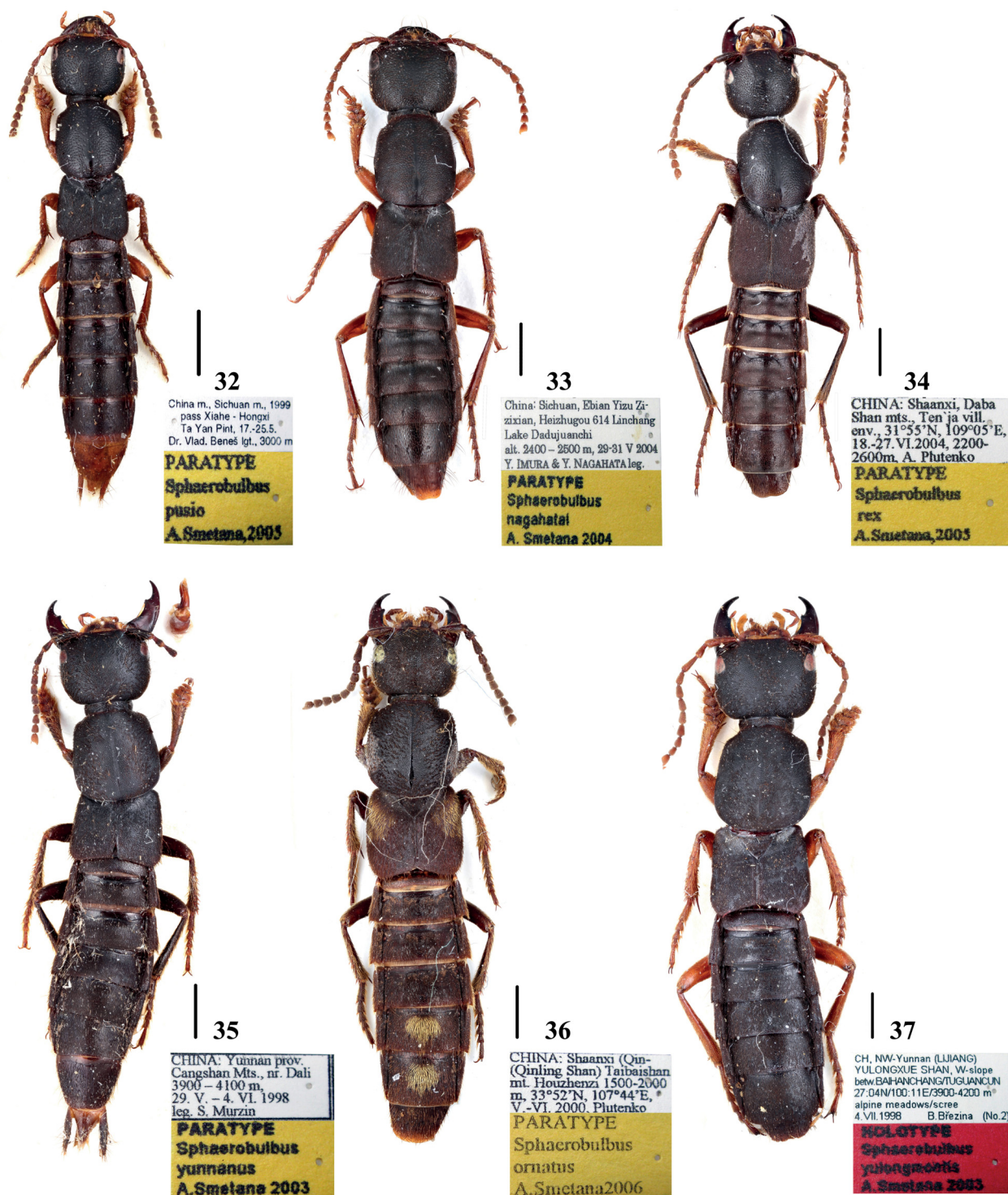
Key to species of *Sphaerobulbus*

The key is based on species descriptions provided by SMETANA (2003, 2005, 2006, 2010, 2016) and the photographs of all species from Smetana's collection taken by the second author in 2012.

- 1 Elytra about as-long-as or longer than pronotum, EL/PL=0.99–1.1; abdominal tergites VII with apical palisade fringe. 2
- Elytra shorter than pronotum, EL/PL=0.77–0.90; abdominal tergites VII without apical palisade fringe. 6
- 2 Abdominal tergites III–V each with deep median impression delimited by two short oblique carinae and posterior basal line; body without bluish tint. 3
- Abdominal tergites III–V each without deep median impression and two short oblique carinae; body with bluish tint. 5
- 3 Pronotum as long as wide, PL/PW=1.00; subhumeral portion of each elytron with gold tomentose pubescence, abdominal tergites VI and VII each with median golden tomentose patch. Habitus: Fig. 36. Aedeagus: SMETANA (2006: Figs 8–10). China (Shaanxi). *S. ornatus* Smetana, 2006
- Pronotum distinctly longer than wide, PL/PW=1.21–1.30; elytra and abdominal tergites without gold tomentose pubescence or patch. 4
- 4 Head as wide as long, HW/HL=1.00; paramere asymmetrical, underside of paramere with three degenerated sensory peg setae in apical portion. Habitus: Fig. 34. Aedeagus: SMETANA (2005: Figs 5–7). China (Shaanxi, Hubei, Sichuan, Guizhou?). *S. rex* Smetana, 2005
- Head a little wider than long, HW/HL=1.08; paramere almost symmetrical, underside of paramere with five degenerated sensory peg setae in subapical portion. Habitus: Figs 3, 4. Aedeagus: Figs 15–17. China (Guangxi). *S. guangxiensis* sp. nov.
- 5 Posterior angles of head rounded; posterior half of head with broad impunctate midline; apical portion of aedeagal median lobe hook-like; underside of paramere with sparse sensory peg setae. Habitus: Figs 5, 6. Aedeagus: Figs 19–23. China (Yunnan). *S. ningliei* sp. nov.
- Posterior angles of head slightly prominent; posterior half of head with narrow impunctate midline; apical portion of aedeagal median lobe straightly pointed apicad; underside of paramere with dense sensory peg setae. Habitus: Fig. 26. Aedeagus: SMETANA (2010: Figs 3, 4). China (Sichuan, Yunnan). *S. cardinalis* Smetana, 2010
- 6 Forebody metallic blue. Habitus: Figs 1, 2. Aedeagus: Figs 7–12. China (Sichuan). *S. smetanai* sp. nov.
- Forebody blackish (head and pronotum with dark blue hue in *S. davidi*). 7
- 7 Abdominal tergites VI and VII each with median golden tomentose patch. 8
- Abdominal tergites VI and VII each without median golden tomentose patch. 10
- 8 Larger species, BL=26 mm. Aedeagus: SMETANA (2016: Figs 7, 8). China (Guangxi). *S. thomasi* Smetana, 2016
- Smaller species, BL=14–16 mm. 9
- 9 Elytra much shorter than wide, EL/EW=0.75; elytra reddish brown. Habitus: Fig. 29. Aedeagus: SMETANA (2006, Figs 3–5). China (Yunnan). *S. biplagiatus* Smetana, 2006
- Elytra shorter than wide, EL/EW=0.86; elytra blackish. Habitus: Fig. 30. Aedeagus: SMETANA (2003: Figs 32–34). China (Yunnan). *S. brezinai* Smetana, 2003
- 10 Smaller species, BL=9–10.5 mm; posterior margin of abdominal segment VII and entire abdominal segments VIII–X reddish yellow. Habitus: Fig. 32. Aedeagus: SMETANA (2005: Figs 10–12). China (Sichuan). *S. pusio* Smetana, 2005
- Larger species, BL=12.5–20 mm; entire abdominal segments VII–X blackish. 11
- 11 Median impression of abdominal tergites III–V relatively deeper, laterally delimited by two short oblique carinae. Habitus: Fig. 25. Aedeagus: SMETANA (2003: Figs 22–25). China (Yunnan, Sichuan). *S. bisinuatus* Smetana, 2003
- Median impression of abdominal tergites III–V shallower or indistinct, laterally without two short oblique carinae. 12
- 12 Legs reddish. 13
- Legs blackish. 16
- 13 Posterior half of head with impunctate midline; punctuation of head and pronotum mostly very dense and well delimited, interstices smooth and ridge-like. Ha-



Figs 24–31. Habitus of species of *Sphaerobulbus*. 24 – *S. alpinus* (Smetana, 2003) (holotype); 25 – *S. bisinuatus* Smetana, 2003 (holotype); 26 – *S. cardinalis* Smetana, 2010 (allotype); 27 – *S. murzini* Smetana, 2003 (holotype); 28 – *S. bicolor* Smetana, 2005 (paratype); 29 – *S. biplagiatus* Smetana, 2006 (holotype); 30 – *S. brezinai* Smetana, 2003 (holotype); 31 – *S. nigrita* (Smetana, 2003) (holotype). Scale bars: 2 mm.



Figs 32–37. Habitus of species of *Sphaerobulbus*. 32 – *S. pusio* Smetana, 2005 (paratype); 33 – *S. nagahatai* Smetana, 2005 (paratype); 34 – *S. rex* Smetana, 2005 (paratype); 35 – *S. yunnanus* Smetana, 2003 (paratype); 36 – *S. ornatus* Smetana, 2006 (paratype); 37 – *S. yulongmontis* Smetana, 2003 (holotype). Scale bars: 2 mm.

- bitus: Fig. 28. Aedeagus: SMETANA (2005: Figs 20–22). China (Sichuan). *S. bicolor* Smetana, 2005
- Posterior half of head without impunctate midline; punctation of head and pronotum mostly less dense and slightly confluent, interstices microsculptured and not ridge-like. 14
 - 14 Head wider than long, HW/HL=1.11. Aedeagus: SMETANA (2016: Figs 3, 4). China (Yunnan). *S. radani* Smetana, 2016
 - Head much wider than long, HW/HL=1.31. 15
 - 15 Midanterior portion of head with sparse punctation; pronotum with broad impunctate midline; posterior basal line of abdominal tergites IV and V bisinuate. Habitus: Fig. 33. Aedeagus: SMETANA (2005: Figs 3–5). China (Sichuan). *S. nagahatai* Smetana, 2005
 - Midanterior portion of head with dense punctation; pronotum with narrow impunctate midline; posteri-

- or basal line of abdominal tergites IV and V simple. Habitus: Fig. 37. Aedeagus: SMETANA (2003: Figs 27, 28). China (Yunnan). *S. yulongmontis* Smetana, 2003
- 16 Head and pronotum with dark blue hue; interstices of head and pronotum smooth. Aedeagus: SMETANA (2016, Figs 11–13). China (Yunnan). *S. davidi* Smetana, 2016
- Head and pronotum without dark blue hue; interstices of head and pronotum microsculptured. 17
- 17 Superior and inferior lines of pronotal hypomeron widely separated at anterior angle. 18
- Superior and inferior lines of pronotal hypomeron joined at anterior angle. 19
- 18 Pronotum with punctation mostly well delimited and interstices even. Habitus: Fig. 31. Aedeagus: SMETANA (2003: Figs 82–84). China (Qinghai, Yunnan, Xizang). *S. nigrita* (Smetana, 2003)
- Pronotum with punctation mostly confluent and interstices bumpy. Habitus: Fig. 24. Aedeagus: SMETANA (2003: Figs 90, 91). China (Xizang). *S. alpinus* (Smetana, 2003)
- 19 Sternite 9 with posterior margin deeply emarginate; median lobe of aedeagus less acute at apex, paramere wider. Habitus: Fig. 35. Aedeagus: SMETANA (2003: Figs 37–39). China (Yunnan). *S. yunnanus* Smetana, 2003
- Sternite 9 with posterior margin shallowly emarginate; median lobe of aedeagus acute at apex, paramere narrower. Habitus: Fig. 27. Aedeagus: SMETANA (2003: Figs 41, 42). China (Yunnan). *S. murzini* Smetana, 2003

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References

- SMETANA A. 2003: Contributions to the knowledge of the genera of the “Staphylinus–complex (Coleoptera: Staphylinidae) of China. Part 4. Key to Chinese genera, treatment of the genera *Collocypus* gen. n., *Ocychnus* gen. n., *Sphaerobulbus* gen. n. *Aulacocypus* and *Apecholinus*, and comment on the genus *Protocypus*. *Folia Heyrovskyana* **11**: 57–135.
- SMETANA A. 2005: Contributions to the knowledge of the genera of the “Staphylinus–complex (Coleoptera: Staphylinidae) of China. Part 7. The genus *Sphaerobulbus* Smetana 2003. Section 2. *Zootaxa* **1006**: 53–64.
- SMETANA A. 2006: Contributions to the knowledge of the genera of the “Staphylinus–complex (Coleoptera: Staphylinidae) of China. Part 13. The genus *Sphaerobulbus* Smetana 2003. Section 3. *Zootaxa* **1318**: 41–47.
- SMETANA A. 2010: Contributions to the knowledge of the genera of the “Staphylinus–complex (Coleoptera: Staphylinidae) of China. Part 24. The genus *Sphaerobulbus* Smetana 2003. Section 4. *Studies and Reports, Taxonomical Series* **6**: 241–246.
- SMETANA A. 2016: Contributions to the knowledge of the Staphylinus–complex of China. (Coleoptera: Staphylinidae: Staphylinini). Part 27. The genus *Sphaerobulbus* Smetana, 2003, section 5. *Studies and Reports, Taxonomical Series* **12** (1): 235–243.

