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Contributions to the knowledge of the *Staphylinus*-complex of China. (Coleoptera: Staphylinidae: Staphylinini). Part 27. The genus *Sphaerobulbus* Smetana, 2003, section 5.

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Abstract. Three new species of the genus *Sphaerobulbus* are described based on specimens from the People's Republic of China: *S. radani* sp. nov. (Yunnan), *S. thomasi* sp. nov. (Guangxi) and *S. davidi* sp. nov. (Yunnan). Each species is described, illustrated and all available distributional and bionomic data are given. New records of several already described species are given.

INTRODUCTION

This is the twenty-seventh of a series of papers dealing with the genera of the "*Staphylinus*-complex" (see Smetana & Davies, 2000) of the People's Republic of China. Three new species of the genus *Sphaerobulbus* Smetana, 2003 are described: *S. radani* sp. nov. (Yunnan), *S. thomasi* sp. nov. (Guangxi) and *S. davidi* sp. nov. (Yunnan) and new distributional data for several already described species are presented.

The three new species described below are honoring my three sons. None of them choose entomology as the life commitment, as I secretly hoped. However, each of them enjoys the chosen path, the enjoyment being the most important condition for a successful, happy life.

MATERIAL AND METHODS

The acronyms used in the text when referring to the deposition of the specimens are as follows:

ASC collection of Aleš Smetana, deposited at The National Museum of Nature and Science, Toshiba, Japan;
CNC Canadian National Collection of Insects and Nematodes, Ottawa, Canada;
MSC collection of Michael Schülke, Berlin, Germany;
NMW Naturhistorisches Museum Wien, Austria.

The measurement ratios given in the descriptions are average values when more than one specimen was available. Label data for holotypes and allotypes are quoted exactly as they appear on the label.

RESULTS

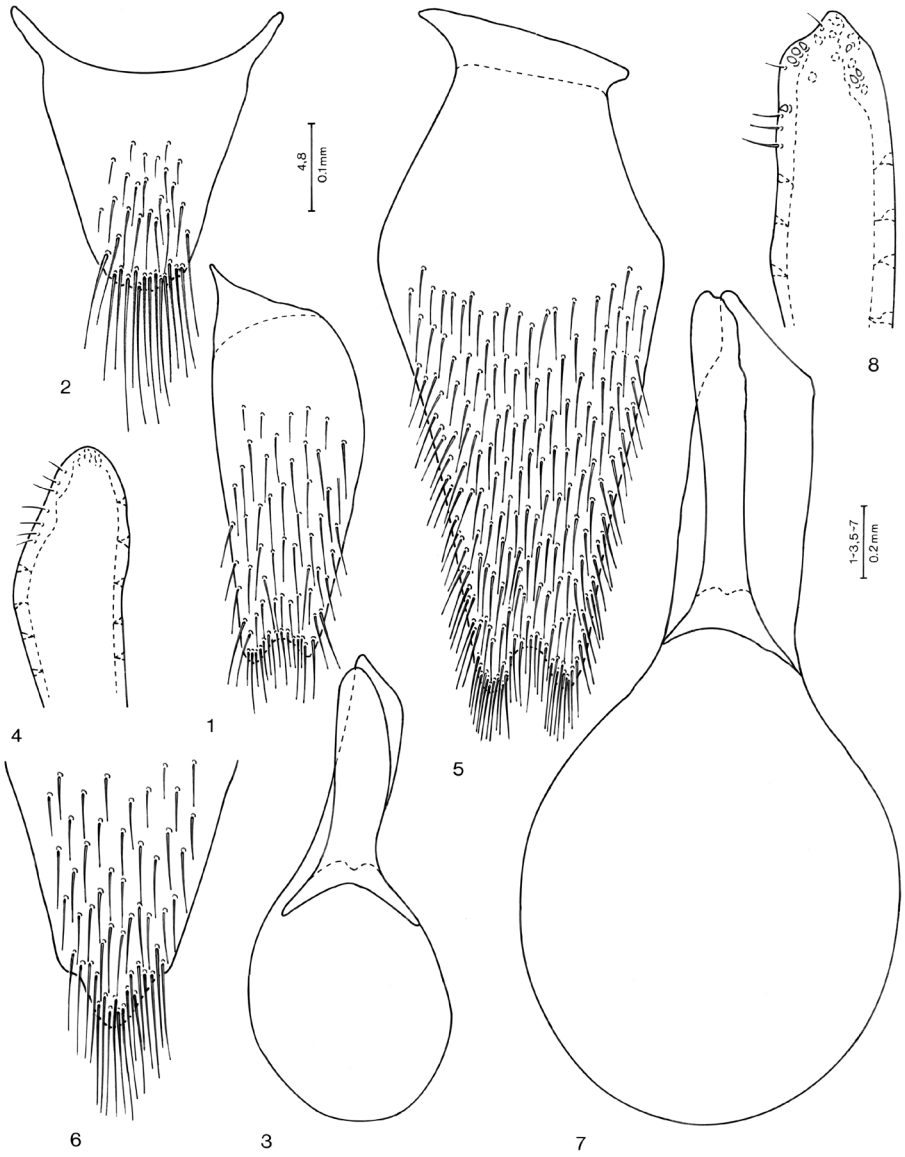
Sphaerobulbus radani sp. nov.
(Figs. 1-4)

Type locality. CHINA: Yunnan, E slope Cangshan at Dali, 25°40'12.4"N 100°07'27.2"E, 2764 m.

Type material. Holotype (♂): CHINA: "P.R. China, Yunnan, E slope Cangshan at Dali N 25°40'12.4" E 100°07'27.2", 10.v.2010, 2764 m, sifting 04, V. Grebennikov", (CNC).

Description. Black, fore body rather dull, pubescence of dorsal side of body black; antennae and legs long; maxillary and labial palpi dark testaceous, each mandible reddish-brown at base, gradually becoming black toward apex; antennae with first three segments rufobrunneous, remaining segments slightly darker; legs rufotestaceous. Head of rounded shape, with entirely obsolete posterior angles, slightly wider than long (ratio 1.11), eyes small, rather flat, tempora almost twice as long as eyes seen from above (ratio 1.88), densely setose; posterolateral portions of head with moderately coarse, very dense punctation, punctation becoming gradually markedly sparser toward vertex and particularly toward frons, interstices between punctures with moderately coarse, dense microsculpture of irregular meshes. Antenna long, when reclined reaching slightly past middle of pronotum; segment 3 longer than segment 2 (ratio 1.18), segments 4-8 longer than wide, gradually becoming shorter, segments 9 and 10 vaguely longer than wide, last segment shorter than two preceding segments combined. Pronotum longer than wide (ratio 1.20), vaguely narrowed anteriad, narrow marginal groove disappearing downwards at about anterior third of pronotal length; punctation similar to that on head, but in general finer, becoming gradually markedly sparser medioapically, interspaces between punctures with microsculpture similar to that on head, but slightly finer and denser; complete, narrow impunctate midline ending just short of posterior margin of pronotum. Scutellum finely punctate and setose, surface with very fine, dense irregular microsculpture. Elytra quite short, at suture considerably (ratio 0.66), at sides distinctly (ratio 0.83) shorter than pronotum at midline; punctation very fine and dense, becoming somewhat obscured by dense granulose microsculpture, rendering surface of elytra dull. Wings reduced to minute nonfunctional stumps. Abdomen with tergite 7 (fifth visible) lacking whitish apical seam of palisade fringe; tergite 2 (in front of first entirely visible tergite) with a few scattered punctures; posterior basal lines on first and fourth visible tergites simple, straight, those on visible tergites two and three bisinuate, basal portions of visible tergites one to four slightly transversely depressed; all tergites finely and densely punctate, punctation gradually becoming slightly sparser toward apex of each tergite, and in general toward apex of abdomen; interspaces with extremely fine, semigranulose microsculpture.

Male. Sternite 8 with moderately wide and deep, obtusely triangular medioapical emargination. Genital segment with sternite 9 with minute, acute basal portion, apical portion with subarcuate medioapical emargination (Fig. 1); tergite 10 markedly, evenly narrowed toward arcuate apex, setose as in Fig. 2. Aedoeagus as in Figs. 3, 4; median lobe



Figs. 1-8. *Sphaerobulbus radani* sp. nov.: 1- sternite 9 of male genital segment; 2- tergite 10 of male genital segment;; 3- aedoeagus, ventral view; 4- apical portion of underside of paramere. *Sphaerobulbus thomasi* sp. nov.: 5- sternite 9 of male genital segment; 6- apical portion of tergite 10 of male genital segment; 7- aedoeagus, ventral view; 8- apical portion of underside of paramere.

with parallel-sided middle portion, apical portion asymmetrical, with right side below acute apex subarcuately dilated; paramere relatively wide, situated on median lobe asymmetrically, apical portion asymmetrical, with arcuate apex not quite reaching apex of median lobe; underside of paramere without sensory peg setae, with several fine setae at right margin.

Female unknown.

Length 13.0 mm.

Geographical distribution. *Sphaerobulbus radani* is at present known only from the type locality in Cang Shan in Yunnan.

Bionomics. Nothing is known about the collecting circumstances of the holotype.

Recognition and comments. *Sphaerobulbus radani* is similar to *S. pusio*, due to its small size, but it differs from it, in addition to the differently shaped aedoeagus, by the rounded head (the head is of rounded quadrangular shape in *S. pusio*), and by the much denser punctuation on the head and pronotum.

Etymology. The specific epithet is patronymic. It honors my oldest son Radan (Dan), who in July 1974 as a teenager accompanied me in my collecting trip to the Pacific Coast that included unforgettable time around Spirit Lake at Mount St. Helens in Washington, before the mountain blew itself half away destroying everything around it. Being a successful car dealer now, Dan is the reason that I can enjoy driving fast cars I could otherwise not afford.

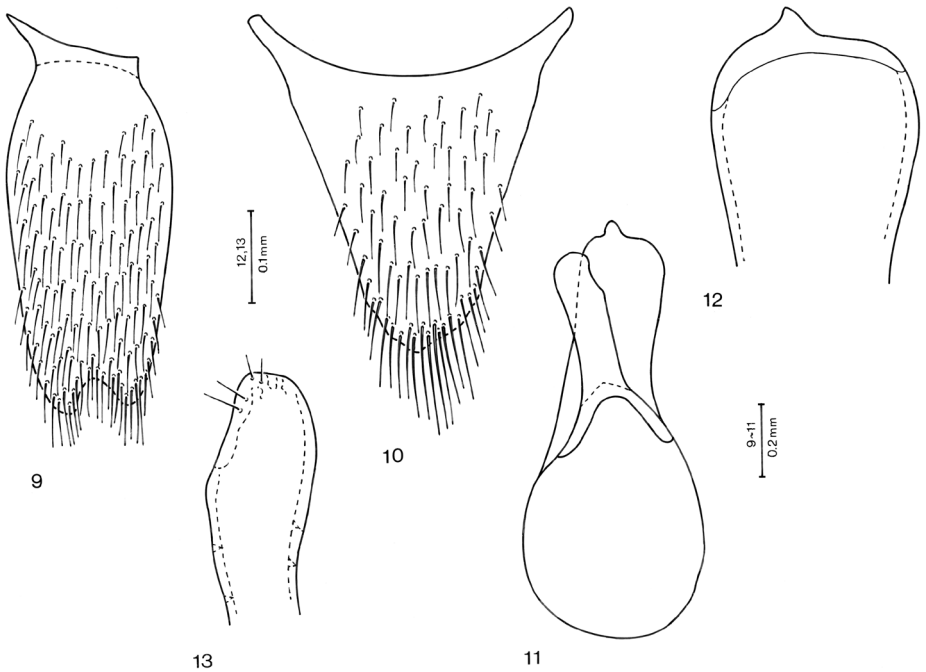
***Sphaerobulbus thomasi* sp. nov.**

(Figs. 5-8)

Type locality. CHINA: NW Guangxi, Yuanbao Shan, 25°25'N 109°09'E, 1200-1500 m.

Type material. Holotype (♂): CHINA: "CHINA: NW Guangxi, 3.-6.6. Yuanbao Shan, 1200-1500 m, 25°25'N 109°09'E, 2009, leg. C. Reuter (4)", (NMW).

Description. Black, fore body slightly dull; pubescence of dorsal side of body piceous-black, visible abdominal tergites one to three with patch of denser black pubescence in middle, visible abdominal tergites four and five each in the middle with yellowish-golden pubescence; antennae and legs long; maxillary and labial palpi dark brownish, each mandible reddish-brown at base, gradually becoming black toward apex; antennae long, when reclined reaching about middle of pronotum, black but becoming gradually slightly paler toward apex; legs piceous-black with indistinctly paler tarsi. Head of rounded quadrangular shape, with entirely rounded posterior angles, wider than long (ratio 1.19); eyes small, somewhat shifted toward dorsal side of head, slightly convex, tempora considerably longer than eyes from above (ratio 1.77; dorsal side of head very densely, moderately coarsely punctate, punctation gradually becoming coarser anteriomediad, extremely narrow interspaces between punctures without any microsculpture. Antenna long, when reclined reaching slightly past middle of pronotum, segment 3 markedly longer than segment 2 (ratio 1.52), segments 4-8 longer than wide, gradually becoming shorter, segments 9 and 10 as long as wide, last segment markedly shorter than two preceding segments combined. Pronotum longer than wide (ratio 1.11), with



Figs. 9-13. *Sphaerobulbus davidi* sp. nov.: 9- sternite 9 of male genital segment; 10- tergite 10 of male genital segment; 11- aedoeagus, ventral vies; 12- apical portion of median lobe, ventral view, paramere removed; 13- apical portion of underside of paramere.

traces of elevated midline on posterior half, widest in middle and from there about equally narrowed posteriad and anteriad, narrow marginal groove disappearing downwards at about anterior third of pronotal length; punctation similar to that on head but finer and denser; extremely narrow interspaces between punctures without any microsculpture. Scutellum finely and densely punctate on semigranulose surface, with black pubescence. Elytra short, somewhat widened posteriad, at suture distinctly (ratio 0.72), at sides slightly (ratio 0.90) shorter than pronotum at midline; punctation quite fine and dense, slightly asperate, somewhat obscured by coarse granulose microsculpture, elytra therefore appearing quite dull. Wings folded under elytra, but apparently non-functional. Abdomen with tergite 7 (fifth visible) lacking pale apical seam of palisade fringe; tergite 2 (in front of first fully visible tergite) densely punctate on apical half, punctation extended basad in middle; posterior basal lines on first three visible tergites obtusely extended posteriad on each lateral portion with base of each tergite between extensions depressed; all tergites extremely finely punctate, punctures almost disappearing among dense granulose microsculpture; surface of tergites appearing dull.

Male. Sternite 8 with moderately wide and deep obtusely triangular medioapical emargination. Genital segment with sternite 9 with minute, short basal portion, apical portion with deep arcuate medioapical emargination (Fig. 5); tergite 10 relatively narrow, sparingly

setose, markedly, evenly narrowed toward slightly differentiated apical portion with subacute apex (Fig. 6). Aedoeagus (Figs. 7-8) with conspicuously large, sphaerical bulbus; median lobe small, rather narrow, with parallel-sided middle portion, anteriorly narrowed into asymmetrical apical portion with subacute apex; paramere quite narrow, situated on median lobe asymmetrically, apical portion asymmetrical, with minute subacute apex about reaching apex of median lobe; underside of paramere with not pigmented sensory peg setae situated below apex along right margin, with three short, curved spine-like setae, and with two minute apical setae and three fine subapical setae at right margin (Fig. 8).

Female unknown.

Length 26.0 mm.

Geographical distribution. *Sphaerobulbus thomasi* is at present known only from the type locality in Yuanbao Shan in northern Guangxi Zhuang Autonomous Region.

Bionomics. Nothing is known about the collecting circumstances of the holotype.

Recognition and comments. *Sphaerobulbus thomasi* is at present the largest member of the genus. It is a distinctive species due to its large size, the dull black surface of the body, patches of yellowish-golden pubescence on visible abdominal tergites three and four, and the shape of the aedoeagus. It cannot be confused with any other species of the genus known at present.

Etymology. The specific epithet is patronymic. It honors my middle son Thomas, in admiration of his rather unusual hobbies that involve model trains and particularly his dedication to chase tornadoes.

Sphaerobulbus davidi **sp. nov.**

(Figs. 9-13)

Type locality. CHINA: Yunnan, Daxue Shan, NW Mengku (S Lincang), 2800 m.

Type material. Holotype (♂): "CHINA, Yunnan, Daxue Shan, NW Mengku (S Lincang), 2800 m, 10.V.2003, leg. S. Murzin", (MSC). Paratype: (1 ♂): same data as holotype, (ASC).

Description. Black, head and pronotum with dark blue hue; fore body slightly dull; pubescence of dorsal side of body piceous-black, testaceous on tempora; maxillary and labial palpi dark testaceous, antennae moderately long, when reclined not reaching middle of pronotum, dark brown to piceous but becoming gradually distinctly paler toward apex; legs dark testaceous middle and hind tarsi somewhat darker. Head of rounded quadrangular shape, with rounded posterior angles, wider than long (ratio 1. 28);with traces of impunctate median line in posterior two thirds; eyes small, somewhat shifted toward dorsal side of head, slightly convex, tempora considerably longer than eyes from above (ratio 1.27); dorsal side of head very densely, moderately finely punctate, punctation gradually becoming slightly coarser and sparser anteriomediad, extremely narrow interspaces between punctures without any microsculpture. Antenna with segment 3 markedly longer than segment 2 (ratio 1.42), segments 4-9 longer than wide, gradually becoming shorter, segment 10 as long as wide, last segment markedly shorter than two preceding segments combined. Pronotum appearing

longer than wide, but at widest point as long as wide, with traces of elevated midline widened before posterior margin, widest at about middle and markedly narrowed anteriad from the point where narrow marginal groove disappears downwards (at about anterior third of pronotal length); punctation similar to that on head but gradually becoming finer and denser toward lateral margins; extremely narrow interspaces between punctures without any microsculpture. Scutellum very finely and densely punctate on semigranulose surface, with black pubescence. Elytra quite short, each markedly, obliquely depressed at base; elytra hardly widened posteriad, at suture considerably (ratio 0.66), at sides markedly (ratio 0.77) shorter than pronotum at midline; punctation quite fine and dense, somewhat obscured by coarse granulose microsculpture, elytra therefore appearing dull. Wings folded under elytra, but apparently non-functional. Abdomen with tergite 7 (fifth visible) lacking pale apical seam of palisade fringe; tergite 2 (in front of first fully visible tergite) densely punctate; posterior basal lines on first three visible tergites vaguely bisinuate to almost straight, with base of each tergite slightly depressed; all tergites very finely and densely punctate and pubescent, surface between punctures with very fine, semigranulose microsculpture.

Male. Sternite 8 with wide, moderately deep, obtusely triangular medioapical emargination. Genital segment with sternite 9 with minute, acute basal portion, apical portion with deep subarcuate medioapical emargination (Fig. 9); tergite 10 sparingly setose, evenly narrowed toward slightly differentiated apical portion with acute apex (Fig. 10). Aedoeagus (Figs. 11-13) short, with large bulbus; median lobe relatively short, parallel-sided, anterior subtruncate margin with minute, acute dent; paramere short and narrow, situated on median lobe quite asymmetrically, apical portion asymmetrical, with apex by far not reaching apex of median lobe; underside of paramere with four apical setae, lower pair longer than upper pair, without sensory peg setae (Fig. 13).

Female unknown.

Length 15.0-16.0 mm.

Geographical distribution. *Sphaerobulbus davidi* is at present known only from the type locality in southwestern Yunnan.

Bionomics. Nothing is known about the collecting circumstances of the specimens of the original series.

Recognition and comments. *Sphaerobulbus davidi* is a distinctive species, due to the coloration of the fore body, in combination with the very short elytra and the shape of the aedoeagus. The only other species with the fore-body with blue hue (*S. cardinalis*) differs, in addition to the entirely differently shaped aedoeagus, by the much longer elytra and by the presence of the pale apical seam of palisade fringe on abdominal tergite 7.

Etymology. The specific epithet is patronymic. It honors my youngest son David, a dedicated outdoors man and a skilful crossbow hunter whose activities allow us to enjoy occasional dinner delights provided by Canadian wilderness.

Sphaerobulbus rex Smetana, 2005

rex Smetana, 2005: 56 (*Sphaerobulbus*; description); Smetana, 2008: 947 (*Sphaerobulbus*; female sexual characters; faunal record: Hubei); Smetana, 2010: 242 (*Sphaerobulbus*; faunal records: Hubei, Sichuan).

New records. China: Guangxi: NW-Guangxi, Mao'erShan,1200-1900 m, 25°52'N 110°29'E, 28.V.-9.VI.2009, C. Reuter leg., 1 spec. (NMW); Guizhou: SW Guizhou, Leishan Xian: Leigong Shan, 1900-2170 m, 26°23.187'N 108°12.173'E, V-VI.2012, M. Häckel & K.+R. Sehnal leg., 3 spec. (ASC); Sichuan: Micang Shan, Daba, 1385 m, 32°40'N 106°55'E, 5.VI.-9.VII.2007, J. Turna leg., 1 spec. (NMW); same, but 1435-1570 m, 32°40'N 106°56'E, 6.VI.-12.VII.2006, J. Turna leg., 1 spec. (NMW).

Comments. These are the first records of this species from Guangxi and Guizhou. Previous records were from Shaanxi, Sichuan and Hubei. The species is obviously widely distributed and it seems to prefer habitats at lower mountain elevations. Altitude range 1200-2600 m.

Sphaerobulbus cardinalis Smetana, 2010

cardinalis Smetana, 2010: 243 (*Sphaerobulbus*; description; habitat).

New record. China: Yunnan: NW Yunnan, N of Liang, Jade Dragon Mt., VI.1998, 1 spec. (ASC).

Comments. The species is at present known from two areas, one in southern Sichuan (mountains west of Xichang), and Yulongxue Shan (Jade Dragon Mountain) in northern Yunnan.

Sphaerobulbus ornatus Smetana, 2006

ornatus Smetana, 2006: 45 (*Sphaerobulbus*; description); Smetana, 2010: 242 (*Sphaerobulbus*; faunal record: Sichuan).

New records. China: Shaanxi: Wulongdong, 1500-1800 m 33°36'N 106°18"E , 18.V.-8. VI.2009, Jaroslav Turna leg., 9 spec. (ASC, NMW); Micang Shan, Liping For. Park, 32°47'N 106°40'E, 1500-17900 m, 18.V.-13.VI.2010, Jaroslav Turna leg., 9 spec. (ASC, NMW); Micang Shan, Daba, 1435-1570 m, 32°40'N 106°56'E, 6.VI.-12.VII.
2006, J. Turna leg., 1 spec. (NMW).

Comments. The species is at present known from Shaanxi and Sichuan.

Sphaerobulbus bicolor Smetana, 2005

bicolor Smetana, 2005: 62 (*Sphaerobulbus*; description).

New record. China: Sichuan: S Sichuan, road Xichang-Yanyuan, pass 15 km SW Pingchuan, cca 3200 m, 27°33'N 101°49'E, 26-27.VI.1998, J. Turna leg., 1 spec. (NMW).

Comments. The species is at present known only from an area around Pingchuan in southern Sichuan.

Sphaerobulbus yunnanus Smetana, 2003

yunnanus Smetana, 2003: 82 (*Sphaerobulbus*; description).

New record. China: Yunnan: E slope Cangshan at Dali, 3815 m, 25°39.54.7"N 100°06'04.05"E, 19.V.2010, V. Grebennikov, 1 spec. (CNC).

Comments. This is another record of this species that is likely endemic to Cangshan.

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