

Description of two new Chinese *Subancistrocerus* de Saussure (Hymenoptera, Vespidae, Eumeninae), with a key to the Chinese species

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Abstract

Two new species from Yunnan, China are described and illustrated, namely *Subancistrocerus compressus* and *Subancistrocerus jinghongensis*. In addition, *S. camicus* (Cameron) and *S. sichelii* (de Saussure) are newly recorded from China. A key to the Chinese species of *Subancistrocerus* is provided. Type specimens of the new species are deposited in Chongqing Normal University and Yunnan Agricultural University.

Keywords

Hymenoptera, Vespidae, Eumeninae, *Subancistrocerus*, new species, China

Introduction

De Saussure (1855) provided the name *Subancistrocerus* for his division I of the sub-genus *Ancistrocerus* Wesmael of the genus *Odynerus* Latreille. This genus contains 29 species with three subspecies, and is mainly distributed in the Oriental Region (Giordani Soika 1994; Gusenleitner 2000; Kumar 2013). The Ethiopian Region has five species with one subspecies, and there are two in the Australian Region (Giordani Soika 1961, 1993; Carpenter et al. 2010). In addition, two species occur in more

than one Region (Giordani Soika 1994; Madl et al. 1996; Giordani Soika and Kojima 1988). Only *S. kankauensis* (von Schulthess) was recorded from China so far (Schulthess 1934; Giordani Soika 1994). In our study of the eumenine wasps of China, five species of *Subancistrocerus* have been collected and recognized, of which two are new to science and two are newly recorded from China. In the present paper, the two new species are described and illustrated in detail, and a key to the Chinese species of *Subancistrocerus* is provided. In addition, we also provide the taxonomic information and global distributions for these five species. The key and distributions were produced based on both the examination of specimens and the information extracted from the literature.

Materials and methods

The specimens examined are deposited in the Institute of Entomology and Molecular Biology, Chongqing Normal University, Chongqing, China (CQNU) and Department of Entomology, College of Plant Protection, Yunnan Agricultural University, Kunming (YNAU), respectively. Descriptions and measurements were made under a stereomicroscope (Nikon SMZ1500), and all figures were taken with a stereomicroscope (LEICA EZ4HD) attached to a computer using Leica Application Suite version 2.1.0 software. The ratios used throughout the descriptions were measured in the same amplifying multiple of stereomicroscope. All measurements were taken as the maximal length of body parts measured. Body length was measured from the anterior margin of the head to the posterior margin of metasomal tergum 2. For the density description of punctures, “sparsely” means that the interspaces are larger than one puncture diameter, “moderately” means equal to the diameter, and “densely” means less than one diameter. The abbreviations used in the text are as follows: A1 for antennal segment 1, A2 for antennal segment 2, T1 for metasomal tergum 1, T2 for metasomal tergum 2, S1 for metasomal sternum 1, S2 for metasomal sternum 2, and so on. Terminology principally follows Carpenter (1982) and Carpenter and Cumming (1985).

Taxonomy

Subancistrocerus de Saussure, 1855

Subancistrocerus de Saussure, 1855: 206; Bequaert 1925: 61; Carpenter 1986: 83–85; van der Vecht and Carpenter 1990: 56; Giordani Soika 1994: 4, 11–48.

Type species. *Odynerus sichelii* de Saussure, 1855, by subsequent designation of Bequaert 1925.

Diagnosis. This genus is related to some of *Pseudonortonia* Giordani Soika, with which it shares metasomal tergum 1 with two transverse carinae. However, *Subancis-*

trocerus differs from *Pseudonortonia* in having tergum 1 wider than long in dorsal view and both transverse carinae close to each other at the crest of the declivity (Carpenter et al. 2009).

Distribution. China (Sichuan, Chongqing, Yunnan, Taiwan); Oriental, Ethiopian and Australian Regions.

***Subancistrocerus compressus* Li & Chen, sp. n.**

<http://zoobank.org/F0649BD5-4E1F-4700-9015-7720E0ADA8B5>

Figs 1–11

Material examined. Holotype, ♀, China, Yunnan Province, Xishuangbanna State, Jinghong City, Ancient Forest Park, 22°01'49.76"N, 100°52'25.27"E, 758 m, 31.VII.2003, Zhenshan Geng, No. 1004039 (CQNU). Paratypes: 3 ♂♂, same data as holotype, Nos. 1004040, 1004041, 1004042 (CQNU); 1 ♂, China, Yunnan Province, Xishuangbanna State, Mengla County, Shangyong Town, Longmen Village, 21°16'50.65"N, 101°32'19.44"E, 922.03m, 9. V. 2008, Fangzhou Ma, No. 1004043 (CQNU).

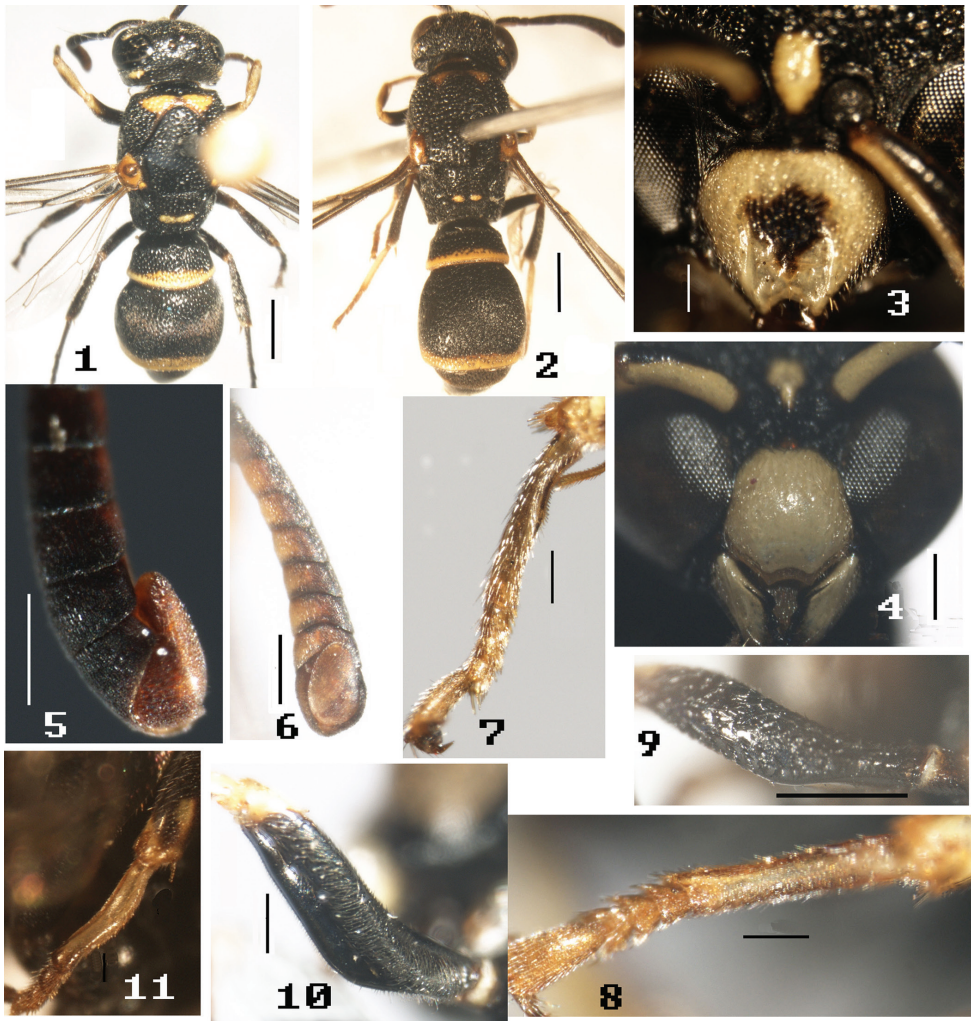
Description. Female (Figs 1, 3): body length 5.0 mm, forewing length 5.5 mm. Black, with the following parts yellow: apex of ocular sinus, postocular spot, interantennal spot, scape ventrally, clypeus except medial dark brown spot (Fig. 3), contiguous triangular pronotal spots, parategula, nearly coterminous spots of metanotum, and apical bands of T1 and T2; antennae ventrally except scape yellow to brown; mandible basally white and apically dark ferruginous; tegula and tibiae outside brownish yellow; apical margin of fore femur to apex of tarsi largely brown, and other parts of legs dark brown.

Head. Frons densely punctate and reticulate; clypeus with silvery setae, sparsely punctate and medially with longitudinal depression, length of clypeus: width = 29:34, clypeal margin emarginate, laterally angulate, and apical width: depth of emargination = 1:0.1; length of A3: width = 4:3, length of A4 equal to width, length of A5: width = 6:7.

Mesosoma. Length of mesosoma: width = 19:12; pronotal carina somewhat rounded laterally; pronotum, scutum, scutellum and mesopleuron except posteriorly densely punctate, the punctures obviously larger and deeper than those on head; punctures on metanotum sparser than those on other parts of thorax, left and right parts of metanotum contiguously tiled, metapleuron impunctate and somewhat coriaceous; propodeum coarse, with lateral carina and densely reticulate ridges, side somewhat coriaceous.

Metasoma. Width of T1: length = 7.1:5.0, T1 and T2 densely punctate, S1 impunctate and coriaceous, punctures on S2 sparser than those on T1, T2 subapically somewhat depressed, T1, T2 and S2 with lamellate apical margin, respectively.

Male. Body length 5.0 mm, forewing length 6.0 mm. Sculpture, punctuation, setae, and coloration similar to those of female except as follows: clypeus entirely whitish yellow (Figs 3–4); mandible largely whitish yellow; spots on pronotum and metanotum smaller and separated (Fig. 2); mid tarsomere 1 and hind tarsomere 1 whitish yellow,



Figures 1–11. *Subancistrocerus compressus* sp. n. **1** habitus of holotype (dorsal view), ♀ **2** habitus of one paratype (dorsal view), ♂ **3** clypeus, ♀ **4** clypeus, ♂ **5** antennae (lateral view), ♂ **6** antennae (ventral view), ♂ **7** fore tarsus (lateral view), ♂ **8** fore tarsus (dorsal view), ♂ **9** fore femur (ventral view), ♂ **10** fore femur (lateral view), ♂ **11** mid tarsomere 1, ♂. Scale bar for **1–10** = 1.0 mm; for **11** = 0.1 mm.

remaining tarsi ferruginous, mid tibia and base of hind tibia with one long whitish yellow elliptic spot, respectively; clypeus medially convex and without depression, length equal to width; length of A4: width = 5:4, length of A5: width = 8:9, A4–A9 laterally with carina-like prominences and ventrally without concavities, A11–A12 ventrally concave, length of A11: width = 17:15, A13 broad, foliaceous, its apex rounded and reaching the basis of A11 and not covering A10 (Figs 5–6), length of A13: width = 18:11; punctures on frons deeper than those in female; metanotum narrower than that in female; fore femur basally with anteroventral compression (Figs 9–10); fore tar-

somere 1 longer than the following segments together (Figs 7–8); mid fore tarsomere 1 curved downward (Fig. 11); width of T1: length = 7.6:5.5, S1 basally depressed, apical depression of T2 less obvious than in female.

Recognition. The species resembles *S. indochinensis* Gusenleitner, 2000 from Laos in having male A4–A9 ventrally without concavities, A13 broad, foliaceous and not covering A10 (Figs 5–6). It differs from *S. indochinensis* and all other members of the genus by the following character combination: the male fore femur basally with an anteroventral compression (Figs 9–10), fore tarsomere 1 longer than the following segments together, not curved or arched (Figs 7–8), and the mid tarsomere 1 curved (Fig. 11).

Distribution. China (Yunnan).

Etymology. The specific name is derived from the Latin word: *compressus* (compressed), with reference to the male fore femur with an anteroventral compression basally.

***Subancistrocerus jinghongensis* Li & Chen, sp. n.**

<http://zoobank.org/00005ACB-87EC-47A2-A34B-E56411D1997B>

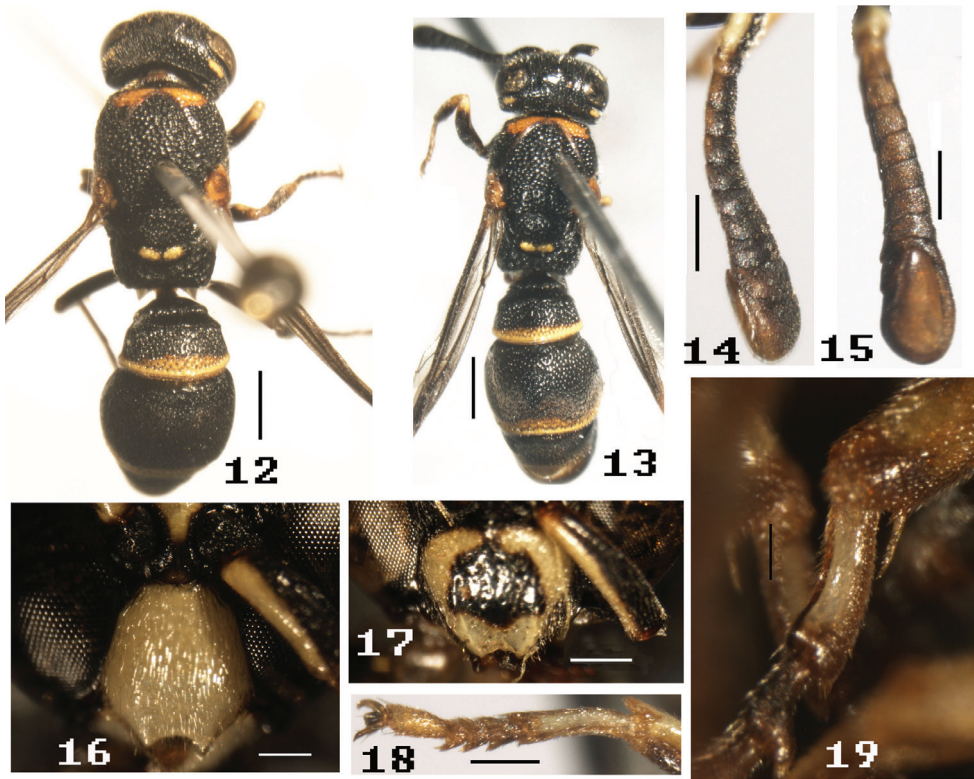
Figs 12–19

Material examined. Holotype, ♀, China, Yunnan Province, Xishuangbanna State, Jinghong City, Ancient Forest Park, 22°01'49.76"N, 100°52'25.27"E, 758 m, 31.VII.2003, Qian Jiang, No. 1004044 (CQNU). Paratype: 1 ♂, same data as holotype, No. 1004045 (CQNU).

Description. Female (Figs 12, 17): body length 6.0 mm, forewing length 5.5.0 mm. Body black; with the following parts whitish yellow to yellow: apex of ocular sinus, interantennal spot, postocular spot, scape ventrally, clypeus except medial spot and apical margin, contiguous triangular pronotal spots, parategula, spots on metanotum, apex of fore femur and fore tibia outside, spots of apex of mid femur and tibia outside, and apical bands of T1, T2 and S2; antennae ventrally except scape yellow to brown; apical margin and medial spot of clypeus dark brown; mandible basally white yellow and apically ferruginous to dark brown; tegula brownish yellow; fore tibia inside to tarsal apex largely ferruginous, and other tarsi brownish yellow to brown; other parts of mid leg dark brown.

Head. Frons densely punctate and reticulate; clypeus sparsely punctate and setose, medially with wide longitudinal spade-formed depression, and clypeal margin bluntly angulate (Fig. 17), length of clypeus: width = 32:35, apical width: depth of emargination = 1:0.1, clypeal margin laterally angulate (Fig. 17), antennae lacking.

Mesosoma. Length: width = 25:16; pronotal carina laterally somewhat rounded; pronotum, scutum, scutellum and mesopleuron except posteriorly densely punctate, punctures obviously larger and deeper than those on head, interspaces with ridges; punctures on metanotum sparser than those above, left and right parts of metanotum uncomtiguously tiled (Fig. 12); metapleuron impunctate and somewhat rugose; propodeum coarse, with lateral carina and densely reticulate ridges, side somewhat coriaceous.



Figures 12–19. *Subancistrocerus jinghongensis* sp. n. **12** habitus of holotype (dorsal view), ♀ **13** habitus of paratype (dorsal view), ♂ **14** antennae (ventral view), ♂ **15** antennae (lateral view), ♂ **16** clypeus, ♂ **17** clypeus, ♀ **18** fore tarsus (dorsal view), ♂ **19** mid tarsomere 1, ♂. Scale bar for **10–18** = 1.0 mm; for **19** = 0.1 mm.

Metasoma. Width of T1: length = 6.3:4.5, T1 and T2 densely punctate, S1 impunctate and coriaceous; punctures on S2 sparser than those on T1 and T2; T1, T2 and S2 with thin lamellate apical margin, respectively, in front view, the lamellate apical margin invisible, T2 subapically somewhat depressed.

Male (Figs 13–16, 18–19). Body length 5.5 mm, forewing length 5.5.0 mm. Sculpture, punctuation, setae, and coloration as in female except as follows: clypeus entirely whitish yellow (Fig. 16); parategula brownish yellow; two spots on metanotum smaller than those in female; fore and mid tarsomere I with long whitish spot, respectively (Figs 18–19), other parts of mid leg dark ferruginous; clypeus medially somewhat convex and without depression, length: width=15:13 (Fig. 16); length of A4: width = 6:7, length of A5: width = 7:8, A4–A9 outside with prominent carina, respectively, A10 apically to A12 ventrally concave, length of A11: width = 19:17, A13 foliaceous, from base to apex gradually narrowing and its apex reaching the base of A10 (Figs 14–15), length of A13:

width = 2:1; transverse ridges on metapleuron and side of propodeum more obvious and denser than those in female; metanotum narrower than that in female (Fig. 13); fore femur normal, fore tarsomere 1 arched, and almost equal to the following segments together (Fig. 18); mid tarsomere 1 curved and short, much shorter than the following segments together (Fig. 19); width of T1: length = 6.4:4.3, S1 normal; T2 medially somewhat convex, its apical margin normal, with a regular series of big punctures, not reflected, and its apex more depressed than that in female.

Recognition. The species is similar to *S. reflexus* Giordani Soika, 1994 from Philippines in mid tarsomere 1 in male curved and short, much shorter than the following segments together (Fig. 19), and A13 foliaceous, gradually narrowing from base to apex, and its apex reaching the base of A10 (Figs 14–15). It differs from that species and all other members of the genus by the following character combination: apical margin of T2 normal, not reflected; fore tarsomere 1 arched, and almost equal to the following segments together (Fig. 18); and body length obviously smaller than in *reflexus*.

Distribution. China (Yunnan).

Etymology. The specific name is the Latinized adjective *jinghongensis*, with reference to the region from which the type-specimens were collected.

***Subancistrocerus camicrus* (Cameron, 1904), new record**

Odynerus camicrus Cameron, 1904: 259.

Ancistrocerus camicrus (Cameron): Giordani Soika 1941: 241, fig. 20.

Subancistrocerus camicrus (Cameron): Gusenleitner 1988: 178; Giordani Soika 1994: 14 (key), 46, Figs 10, 19; Gusenleitner 2006: 689.

Subancistrocerus obscuripennis Gusenleitner, 1987: 263, fig. 6; 1988: 178.

Material examined. 2 ♂♂, China, Sichuan Province, Liangshan State, Minsheng Town, 5. VIII. 2011, Tingjing Li; 3 ♂♂, China, Sichuan Prov., Liangshan State, Xide County, Hongmo Town, 4.VIII. 2011, Tingjing Li & Yuan Bai; 1 ♀, China, Chongqing, Beibei County, Jinyun Mountain, 20.V. 2006, Yin Li; 1 ♂, China, Yunnan Province, Wenshan State, Qiubei County, Chalukou, 3. V. 2004, Peng Wang; 1 ♀, China, Yunnan, Zhaotong State, Yongshan County, Huanghua Town, 16. IX. 2005, Hesheng Wang; 1 ♀, China, Yunnan Province, Xishuangbanna State, Jinghong City, Mengyang Town, Mansahao, 28. VII.2011, Xin Zhou; 1 ♀ 2 ♂♂, China, Yunnan Province, Xishuangbanna State, Jinghong City, Ancient Forest Park, 31.VII.2003, Tingjing Li & Qian Jiang; 1 ♀, China, Yunnan Province, Lincang State, Linxiang County, Fengxiang Town, 5. X. 2004, Kai Wu.

Distribution. China (Sichuan, Chongqing, Yunnan); India; Nepal; Thailand; Burma; Laos; Malaysia.

***Subancistrocerus kankauensis* (von Schulthess, 1934)**

Odynerus kankauensis von Schulthess, 1934: 69.

Nortonia kankauensis (von Schulthess): Iwata 1939: 71–72 (ethology).

Ancistrocerus kankauensis (von Schulthess): Giordani Soika 1941: 241.

Subancistrocerus kankauensis (von Schulthess): Giordani Soika 1981: 170, Figs 3–4; 1994: 14 (key), 44, Figs 7, 16.

Material examined. 2 ♀♀, China, Jiangxi Province, Xingangshan Site A, 1171–216 m, 25.V.2013, Michael Staab.

Distribution. China (Jiangxi, Taiwan).

***Subancistrocerus sichelii* (de Saussure, 1855), new record**

Odynerus sichelii de Saussure, 1855: 206, pl. X fig. 6; Dalla Torre 1894: 96 (catalog); Bingham 1897: 361 (key), 363; Rothney 1903: 107; Dover 1925: 299; Dusmet 1930: 104. *Odynerus intendens* Walker, 1860: 304; Dalla Torre 1894: 449; Bingham 1897: 363 (key), 373; Dover 1925: 299; Giordani Soika 1941: 243.

Ancistrocerus intendens (Walker): 304; Motschoulsky 1863: 23 (catalog).

Ancistrocerus sichelii (de Saussure): Giordani Soika 1941: 242.

Subancistrocerus sichelii (de Saussure): Iwata 1965: 105; van der Vecht 1967: 31, 33; Gusenleitner 1987: 263, fig. 7; 1988: 177; Giordani Soika 1994: 13 (key), 33, Figs 4, 13; Madl et al. 1996: 831; Gusenleitner 2006: 689; Gusenleitner and Madl 2009: 468.

Subancistrocerus tristis Giordani Soika, 1991: 41, 50; Gusenleitner and Madl 2009: 468.

Material examined. 2 ♀♀ 1 ♂, China, Sichuan Province, Panzihua State, Miyi County, Baima Town, 30. VII. 2011, Tingjing Li & Zhenhu Wu; 1 ♀, China, Yunnan Province, Dehong State, Longchuan County, North Outskirts, 17. VIII. 2005, Kai Wu; 1 ♀, China, Yunnan Province, Dehong State, Yinjiang County, Taiping Town, 15. VIII. 2005, Kai Wu; 1 ♂, China, Yunnan Province, Baoshan State, Lujiang Town, 20. VII. 2006, Rui Zhang; 1 ♂, China, Yunnan Province, Lincang State, Shuangjiang County, Mengmeng Town, 22. VII. 2011, Xin Zhou.

Distribution. China (Sichuan, Yunnan); Mauritius; Seychelles; India; Sri Lanka; Chagos Archipelago; Nepal; Burma; Thailand; Cambodia; Vietnam; Malaysia; Singapore.

Key to the Chinese species of *Subancistrocerus* de Saussure**Females**

- 1 Body black, with white spots and bands..... ***S. sichelii* (de Saussure)**
- Body black, with yellow or red-orange spots and bands **2**

- 2 Clypeus almost yellow except margin, without black spots ***S. kankauensis* (Schulthess)**
 — Clypeus at least medially with black spots **3**
 3 Scutum coarsely punctate, interspaces with obvious longitudinal strips ***S. camicrus* (Cameron)**
 — Scutum punctate and interspaces without or with indistinct longitudinal strips **4**
 4 Clypeus medially with narrower longitudinal depression, (Fig. 3) ***S. compressus* sp. n.**
 — Clypeus medially with wider and rounder longitudinal depression (Fig. 17) ... ***S. jinghongensis* sp. n.**

Males

- 1 Fore femur ventrally compressed in basal half (Fig. 9–10) ... ***S. compressus* sp. n.**
 — Fore femur normal, not compressed in basal half **2**
 2 First tarsomere on average straight or very slightly curved, cylindrical and long, its length $7 \times$ width ***S. sichelii* (de Saussure)**
 — First tarsomere on average more arched dorsally and often depressed, its length less than $7 \times$ width **3**
 3 Mid tarsomere 1 very short, much shorter than the following segments together, markedly curved (Fig. 19) ***S. jinghongensis* sp. n.**
 — Mid tarsomere 1 different from above **4**
 4 Flagellomeres 6–8 ventrally not concave, only 9 and 10 ventrally widely and deeply concave ***S. kankauensis* (Schulthess)**
 — Flagellomeres 6–8 ventrally deeply concave ***S. camicrus* (Cameron)**

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