

## Three New Species of the Genus *Sepedophilus* Gistel (Coleoptera: Staphylinidae: Tachyporinae) from Taiwan

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**Abstract** Three new species of the genus *Sepedophilus* Gistel of the family Staphylinidae, *S. attenuatus*, *S. aequalis* and *S. yasutoshii* are described from Taiwan. The aedeagi and the terminalia of both sexes are illustrated for comparison.

**Key words:** Coleoptera, Staphylinidae, Tachyporinae, *Sepedophilus*, new species, Taiwan.

The Taiwanese *Sepedophilus* had been scarcely studied up to the present. Bernhauer (1922) first recorded *Sepedophilus fimbriatus* (Sharp, 1888) and *S. cf. humeralis* (Eppelsheim, 1886). Miwa (1931) added the third species, *S. pedicularius* (Gravenhorst, 1802). Finally, Cameron (1949) described a new species, *S. formosanus*, and recorded *S. plagiatulus* (Fauvel, 1895) and *S. testaceus* (Fabricius, 1792). Thus, six species have been known in total from Taiwan. In this paper, we intend to describe three new species under the name of *S. attenuatus*, *S. aequalis*, and *S. yasutoshii* from Taiwan. The aedeagi and the abdominal terminalia are illustrated in detail for comparison.

### Materials and Methods

This study was carried out mainly on the basis of Mr. Y. Shibata-collection. The aedeagus and the abdominal terminalia were mounted in the Euparal, and the celluloid board with the Euparal was pinned under each specimen. Following parts are measured for comparison: head length (HL); head width (HW); pronotal length (PL); pronotal width (PW); sutural length of elytron (SL); elytral width (EW); proportions in lengths of antennomeres from base to apex (ALP); proportions in lengths of hind tarsomeres from base to apex (TLP). In the figures the arrow indicates the sensory seta. All the holotypes are deposited in the Natural History Museum and Institute, Chiba, while the paratypes are

preserved in Y. Shibata's collection.

### Description

#### *Sepedophilus attenuatus* Naomi et Maruyama, sp. nov (Figs. 1, 3C–D)

*Description of male and female.* Body 1.41–1.61 mm in length, well convex dorsally, moderately shining, with relative proportions: HL: 7; HW: 13; PL: 17; PW: 23; SL: 21; EW: 24. Body yellowish brown to brown; elytra with pair of black small round spots at bases, pair of black relatively large median spots, and also pair of narrow black bands found along posterior margins, but black bands separated each other; 3rd and 6th abdominal segments each with dark brown median transverse band; antennae yellow to yellowish brown, but 6th to 9th segments dark brown; mouth parts and legs yellow to yellowish brown.

Head transverse, with distinct frontoclypeal and midcranial sutures; anterior part between eyes beak-shaped; eyes little longer than 2nd and 3rd antennal segments combined, weakly convex; pubescence sparse, yellow, very thin, occurring concentrically; antennae relatively short, becoming gradually and slightly broader apically in 3rd to 10th segments, 10th distinctly transverse, 11th large, pointed, with ALP: 7 : 5 : 4.5 : 3.5 : 4 : 3.5 : 3 : 3 : 3 : 4 : 6.

Pronotum convex dorsally, rounded laterally, basal margin weakly rounded, pos-

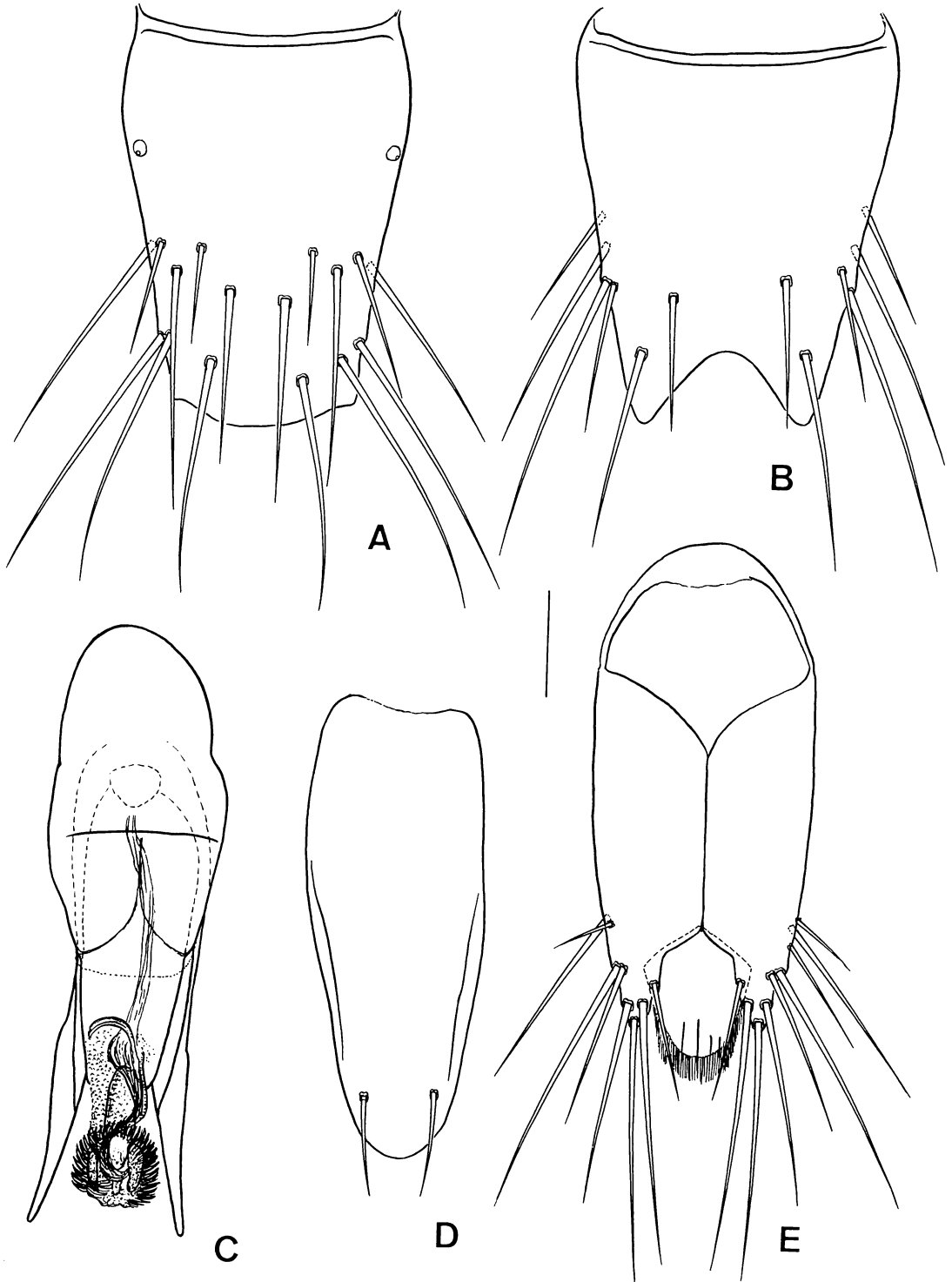


Fig. 1. *Sepedophilus attenuatus* sp. nov. male (holotype). A, Eighth tergite; B, 8th sternite; C, aedeagus in ventral view; D, 9th sternite; E, 9th and 10th tergites. Scale: 0.1 mm.

terolateral corner narrowly rounded; pubescence moderately dense, very thin, almost turning posteriorly; microsculptures found only at basal area, very faint, running transversely.

Fore leg with femur bearing 1 short apicoventral seta; tibia with 1 median seta and 1 apical spur, ventrally with transverse row of setae near apex, externally with yellow ctenidium which occupying distal 5/6, becoming regularly gradually larger distally; 1st and 2nd tarsomeres moderately and 3rd weakly dilated. Mid leg with femur bearing 1 long and 2 short apicoventral setae; tibia with 10 setae, 1 very long and 1 long apical spurs, fimbriate setae at apical margin. Hind leg with femur with 1 long and 2 very short thin apicoventral setae; tibia with about 8 setae, 1 long and 1 short apical spurs, fimbriate setae at apical margin; tarsus slender, with TLP: 12:5:4:2.5:5.5.

Elytra weakly narrowed posteriorly, each elytron weakly rounded at posterior margin, with 6 lateral and 3 apical bristles; epipleuron horizontal; pubescence moderately dense, yellowish; microsculptures very shallow, fingerprint-like.

Abdomen strongly narrowed apically, densely pubescent; chaetotaxy on 3rd to 6th tergites: 1-3-3-3; 7th tergite with 3 short sub-erect bristles.

*Description of male.* Eighth tergite (Fig. 1A) angulate apicolaterally, with 6 long and 2 short bristles; 8th sternite (Fig. 1B) with a large wide-U-shaped emargination, with 4 long and 2 short bristles; 9th tergite (Fig. 1E) completely separated by median suture, apical lobes moderately separated, with 7 long and 1 or 2 short bristles; 9th sternite (Fig. 1D) with 1 bristle; 10th tergite (Fig. 1E) entire, densely ciliate along posterior margin, with 2 very slender bristles. Aedeagus (Fig. 1C) with median lobe weakly bulbous at base, weakly swollen at medio-lateral parts, then weakly narrowed apically; internal structures with tube very weakly curved basally and spiral apically, elongate-oval sclerite, and paired sclerites fringed with row of thick spines; parameres each straight and attenuate, longer than median lobe.

*Description of female.* Eighth tergite (Fig. 3D) moderately narrowed posteriorly, with

inner lobe longer and broader than outer lobe, median emargination very deep, but not extending anteriorly to base of lateral narrow emargination, 10 long and 2 short bristles in addition to 1 sensory seta at the apex of inner lobe; 8th sternite (Fig. 3C) entire, with 3 long and 4 short bristles in addition to 4 long and 1 or 0 short sensory setae.

*Type-series.* Holotype, male (CBM-ZI 34440), Hsinfa, Kaohsiung Hsien, Taiwan, 2. viii. 1976, Y. Shibata leg. Paratypes, 1 female, Lushan, Nantou Hsien, Taiwan, 27. vii. 1977, Y. Shibata leg.; 1 female, Nanshanchi, Puli, Nantou Hsien, Taiwan, 3. iv. 1986, M. Ohara leg.

*Distribution.* Taiwan (Kaohsiung, Nantou).

*Remarks.* *Sepedophilus attenuatus* sp. nov. is allied to *S. armatus* (Sharp, 1888) from Japan, but the 8th tergite of male is angulate posterolaterally, the 3rd abdominal segment is provided with a dark brown median transverse band, and the internal structures of aedeagus are different as follows: the tube is very weakly curved basally, and the paired sclerites are fringed with a line of thick spines.

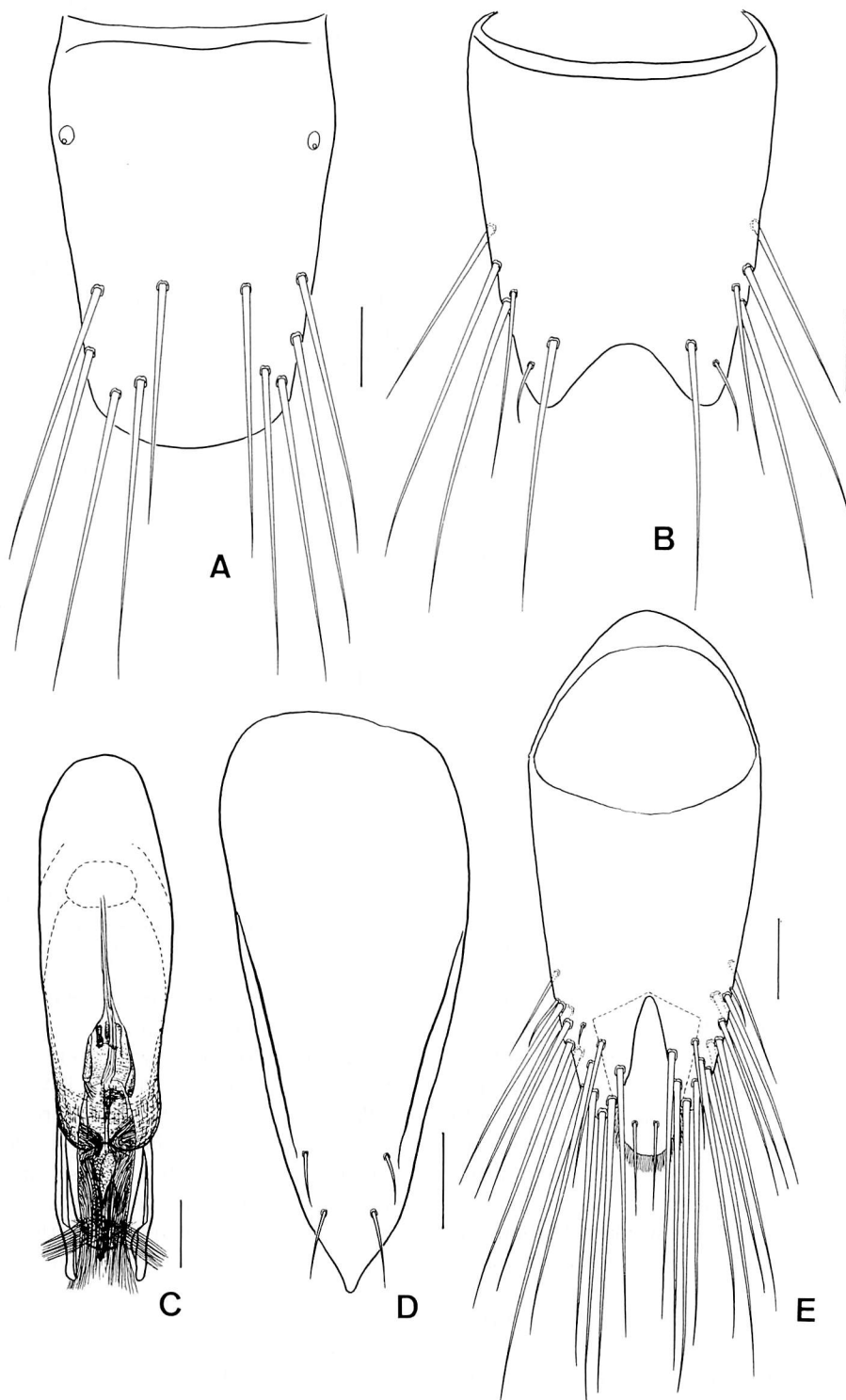
*Etymology.* The specific epithet is derived from the attenuate condition of the paramere.

***Sepedophilus aequalis* Naomi et Maruyama, sp. nov.**

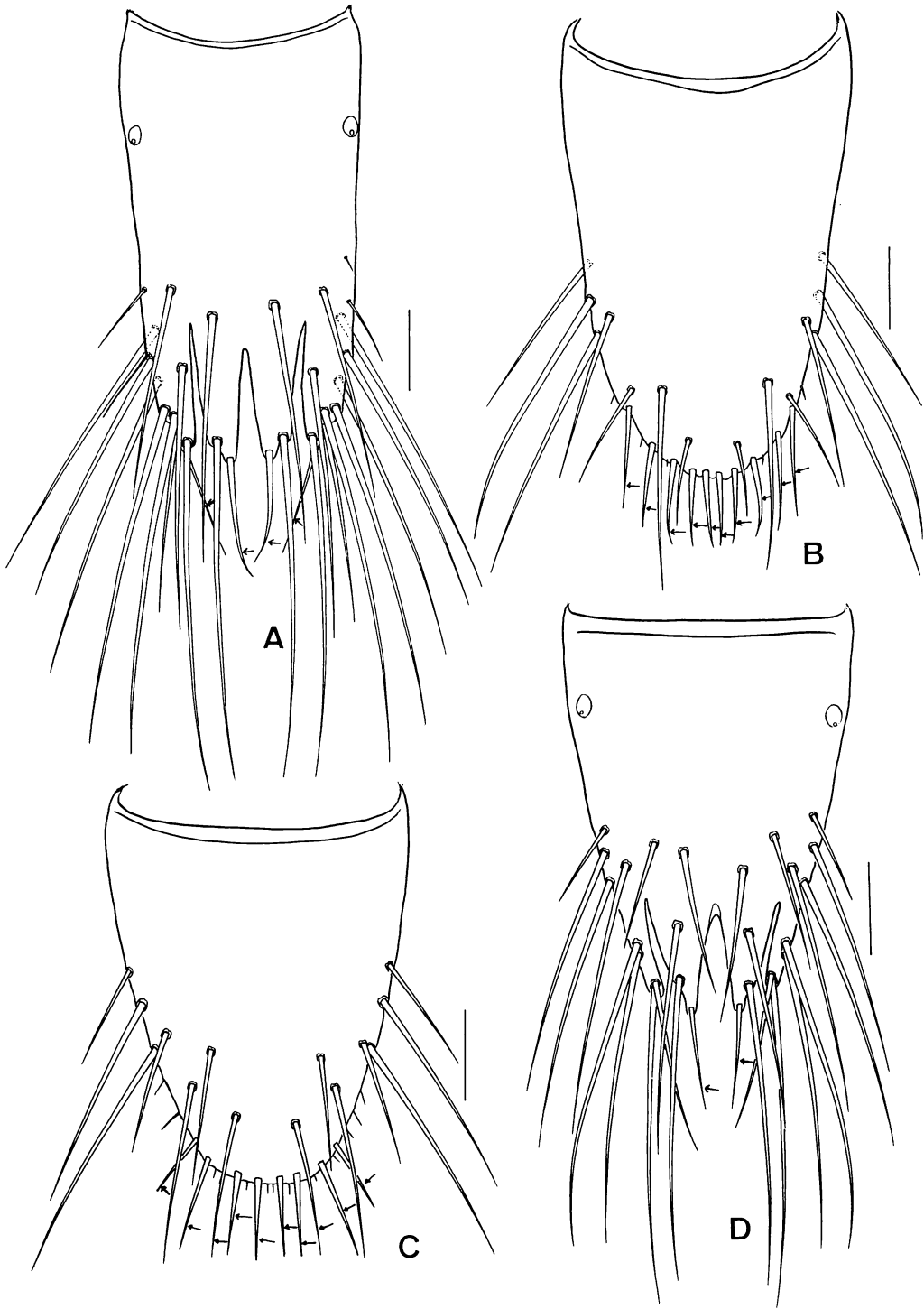
(Figs. 2, 3A-B)

*Description of male and female.* Body 1.62–1.81 mm in length, quite convex dorsally, moderately shining, with relative proportions: HL: 7; HW: 9; PL: 22; PW: 28; SL: 19; EW: 28. Head reddish brown; pronotum reddish brown, with black band along basimedial margin; elytra reddish brown, with pair of black large markings behind the middle, but sutural and posterior marginal areas reddish brown; abdomen reddish brown, but the 6th and 7th segments each with black broad median band; mouth parts yellow to yellowish brown; antennae with 1st, 2nd and 11th segments yellowish brown, 3rd to 9th or 10th brown to dark brown; legs yellowish brown to brown.

Head transverse and elongate-ovoidal behind beak-shaped frontoclypeal area;



**Fig. 2.** *Sepedophilus aequalis* sp. nov. male (C, holotype; A-B, D-E, paratype from Liukuei). A, Eighth tergite; B, 8th sternite; C, aedeagus in ventral view; D, 9th sternite; E, 9th and 10th tergites. Scale: 0.1 mm.



**Fig. 3.** *Sepedophilus* spp. A-B, *S. aequalis* sp. nov. female (paratype from Lushan Spa); C-D, *S. attenuatus* sp. nov. female (paratype from Lushan). A, D, Eighth tergite; B-C, 8th sternite. Scale: 0.1 mm.

frontoclypeal suture little longer than 2nd and 3rd antennal segments combined; eyes weakly or moderately convex, distinctly shorter than 2nd and 3rd antennal segments combined; pubescence sparse, short, very thin; antennae with thin sparse setae, 6th segment weakly, 7th to 10th segments moderately broad, 10th little broader than long, 11th obtusely pointed, with ALP: 7:6:6.5:5:5:4.5:4.5:4:4:4:8.

Pronotum well convex dorsally, moderately rounded laterally, basal margin very weakly bi-sinuate, posterolateral corner narrowly rounded, little protruding posteriorly; pubescence dense, short, thin; surface shining, without microsculptures.

Fore leg with femur with 1 short thick apicoventral seta; tibia ventrally with 1 seta near anterior 1/3, and also with a transverse line of setae near apex, externally with a yellow ctenidium of full length, with several spines of various length at anterior margin; 1st and 2nd tarsomeres weakly dilated. Mid leg with femur with 1 very long and 2 moderately long apicoventral setae; tibia with 4 setae, 1 very long apical spur, dense fimbriate setae at apical margin. Hind leg with femur with 1 long apical spur; tibia with 1 long and 2? short apical spurs, fimbriate setae at apical margin; tarsus slender, with TLP: 18.5:8:6:4:8.

Elytra very weakly narrowed posteriorly; epipleuron subacute; conjoint hind margins very weakly broadly arcuate; pubescence similar to that on pronotum; microsculptures imbricate but faint.

Abdomen moderately narrowed posteriorly, densely covered with thin and minute pubescence; chaetotaxy on 3rd to 6th tergites: 0-1-1-1; 7th tergite without bristle.

*Description of male.* Eighth tergite (Fig. 2A) entire, with 5 long bristles; 8th sternite (Fig. 2B) with large deeply arcuate emargination, 5 long and 1 short bristles; 9th tergite (Fig. 2E) continuous, with very deep median emargination between apical lobes, 11 long and 3 short bristles; 9th sternite (Fig. 2D) slightly asymmetrical basally, tapering apically, pointed at apex, with 2 subterminal bristles; 10th tergite (Fig. 2E) with 1 short bristle. Aedeagus (Fig. 2C) elongate, weakly tuberculate ventrally near apical 1/5; internal struc-

tures with straight tube, median hook, and densely setose apical area with two pairs of tufts, one paired tufts directing posteriorly, the other tufts directing laterally; parameres thin, longer than median lobe, each slightly curved mesially at apical part, weakly swollen at apico-internal part, and narrowly rounded at apex.

*Description of female.* Eighth tergite (Fig. 3A) relatively long, subparallel-sided, with inner lobe being little longer than outer lobe, median emargination very deep, but not extending to base of lateral emargination, 11 long and 1 or 2 short bristles in addition to 2 sensory setae at each apex of inner and outer lobes; 8th sternite (Fig. 3B) entire, with 5 long and 2 short bristles in addition to 5 sensory setae.

*Type-series.* Holotype, male (CBM-ZI 34441), Kenting Park, Pingtung Hsien, Taiwan, 14. viii. 1971, Y. Shibata leg. Paratypes, 1 female, same locality, 13. viii. 1973, Y. Shibata leg.; 1 female, Lushan Spa, Nantou Hsien, Taiwan, 18. viii. 1970, Y. Shibata leg.; 1 female, Nanshanchi, Nantou Hsein, Taiwan, 24. vii. 1974, Y. Shibata leg.; 2 males, Liukuei, Kaohsiung Hsien, Taiwan, 31. vii. 1976, Y. Shibata leg.; 1 female, same locality, 18. iii. 1978, T. Niizato leg.

*Distribution.* Taiwan (Pingtung, Nantou, Kaohsiung).

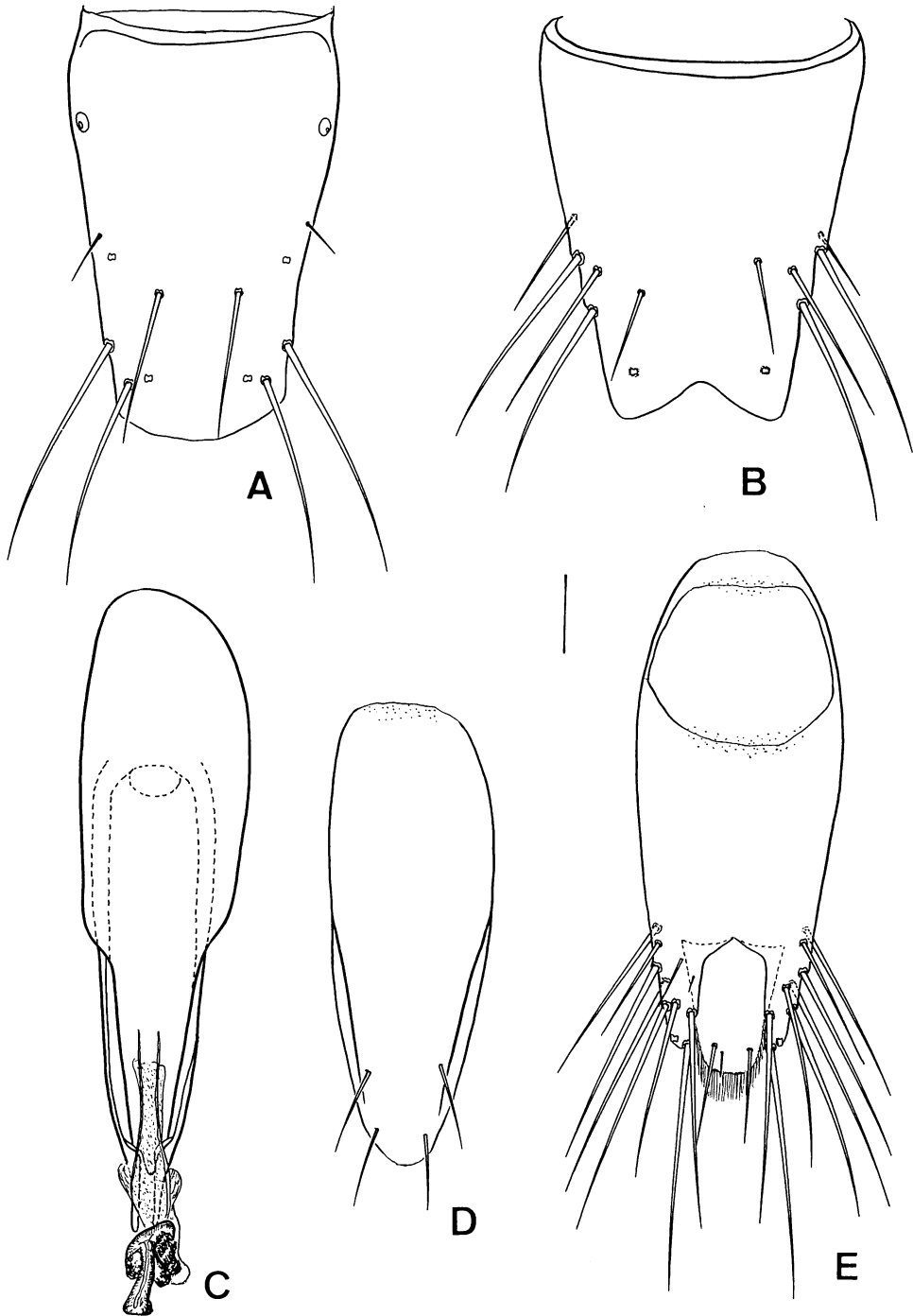
*Remarks.* *Sepedophilus aequalis* sp. nov. is allied to *S. simulans* Nakane et Sawada, 1960, from Yakushima Island, Japan, but the pronotum is reddish brown, with the black basal transverse band, and the elytra are reddish brown, with a pair of large black markings; the 9th sternite of male is pointed at the apex; the inner lobe of the female 8th tergite is slightly longer than the outer lobe; and the median lobe of the aedeagus bears two pairs of tufts of setae at the apical part of the internal structures.

*Etymology.* The specific epithet is derived from the symmetrical condition of the apical part of the male 9th sternite.

***Sepedophilus yasutoshii* Naomi et Maruyama, sp. nov.**

(Fig. 4)

*Description of male.* Body 2.51 mm in length, well convex above, strongly shining,



**Fig. 4.** *Sepedophilus yasutoshii* sp. nov. male (holotype). A, Eighth tergite; B, 8th sternite; C, aedeagus in ventral view; D, 9th sternite; E, 9th and 10th tergites. Scale: 0.1 mm.

with relative proportions: HL: 9; HW: 15; PL: 19; PW: 26; SL: 18; EW: 26. Head yellowish brown in anterior half, dark brown in posteri-

or half; pronotum reddish brown, with dark brown basal transverse band which is partially separated at the middle; elytra reddish

brown, with dark brown basal parts around mesoscutellum, pair of black large markings behind the middle, but the sutural and posterior marginal areas reddish brown; abdomen reddish brown, but 6th and 7th segments each with dark brown broad median transverse band; mouth parts yellowish brown; antennae yellowish brown to reddish brown, but 5th to 9th segments dark brown; legs yellowish brown to reddish brown.

Head transverse and ovoidal except for clypeofrontal area; eyes weakly convex, shorter than 2nd and 3rd antennal segments combined; antennae with 1st to 4th segments shining, sparsely pubescent, 5th to 11th densely pubescent, matt, thick, 10th segment distinctly transverse, 11th obtusely pointed, with ALP: 7:5:5.5:4:5:5:5:5:5:5:8.

Pronotum moderately convex dorsally, very shallowly bi-sinuate at basal margin, obtusely angulate at posterolateral corner; pubescence moderately dense, yellowish, thin; microsculptures fingerprint-like, running transversely, very faint.

Fore leg with femur bearing 1 very thin erect apicoventral seta; tibia with 1 medio-internal seta and 1 thick apical spur, ventrally with transverse row of setae near apex, externally with yellow ctenidium which occupies the apical 5/6; 1st to 3rd tarsomeres moderately dilated. Mid leg with femur bearing 1 long and 2 short apicoventral spurs; tibia with 6 setae, 1 long apical spur, fimbriate setae at apical margin. Hind leg with femur bearing 1 long apical spur; tibia with 1 medio-external seta, 1 long apical spur, fimbriate setae at apical margin; tarsus with TLP: 11:6:5:3:8.

Elytra very weakly narrowed posteriorly, epipleuron almost horizontal; surface similarly pubescent as on pronotum; microsculptures imbricate but faint.

Abdomen moderately narrowed posteriorly, covered with short, moderately dense pubescence; chaetotaxy on 3rd to 6th tergites: 0-1-1-1; 7th tergite without bristle; 8th tergite (Fig. 4A) weakly angulate posterolaterally, with 5 long and 1 short bristles; 8th sternite (Fig. 4B) with a broad V-shaped emargination, 4 long and 2 short bristles; 9th tergite (Fig. 4E) continuous, apical lobes moderately separated, with 8 long and 1 short

bristles; 9th sternite (Fig. 4D) with 2 bristles; 10th tergite (Fig. 4E) entire, with 1 bristle. Aedeagus (Fig. 4C) with median lobe elongate-elliptical at proximal portion, moderately constricted at posterior 2/5, then gradually narrowed apically, pointed at apex, internal structures with T-shaped sclerite and a minutely setous area; parameres slender, uniformly convergent apically, each acutely pointed at apex.

*Female.* Unknown.

*Type-series.* Holotype, male (CBM-ZI 34442), Fenchihu, Chiai Hsien, Taiwan, 9. viii. 1974, Y. Shibata leg.

*Distribution.* Taiwan (Chiai).

*Remarks.* *Sepedophilus yasutoshii* sp. nov. is very similar to *S. aequalis* sp. nov., but the body is much more strongly shining; the elytra are provided with a pair of dark brown basal markings in addition to the paired large markings behind the middle; the 9th sternite of male is rounded apically, and the T-shaped sclerite is found at the apical part of the internal structures of the median lobe instead of tufts.

*Etymology.* This species is named in honour of Mr. Yasutoshi Shibata (Machida, Tokyo), the collector of this interesting new species.

### Acknowledgments

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台湾産ヒメキノコハネカクシ属(甲虫目:  
ハネカクシ科)の3新種の記載

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台湾からこれまで6種のヒメキノコハネカクシ属ハネカクシが記録されているが、新たに3新種を見いだしたので、本稿にて記載した。*Sepedophilus attenuatus* sp. nov. は、日本に広く分布する *S. armatus* Sharp (クロゲヒメキノコハネカクシ) に似るが、第3腹板に黒褐色の横帯があり、雄第8背板の後縁両側が角ばり、雄交尾器内部構造には列生する刺を装う1対の骨片がある点などで、区別できる。*Sepedophilus aequalis* sp. nov. は、屋久島から記載された *S. simulans* Nakane et Sawada に似るが、上翅の斑紋が明瞭で、雄第9腹板が尖り、雌第8背板先端の内突起が外突起より若干長い点などで、区別できる。*Sepedophilus yasutoshii* sp. nov. は、*S. aequalis* sp. nov. に似るが、体の光沢が明らかに強く、上翅には基部と後方に2対の暗黒色斑紋があり、雄交尾器内部構造にはT字状構造が見いだせる点などで容易に区別できる。