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Taxonomic study of the subfamily Steninae MacLeay (Coleoptera, Staphylinidae) from Japan, with descriptions of 14 new species of the genus *Stenus* Latreille

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Abstract This is the 47th taxonomic study of the subfamily Steninae (Coleoptera, Staphylinidae) from Japan, with descriptions of 14 new species of *S. asyura*-group of the genus *Stenus* Latreille. The new species of *Stenus* described herein are as follows: *S. gracilior* (Kanagawa); *S. anfractus* (Mie); *S. komonoensis* (Mie); *S. tumifactus* (Shiga); *S. davidhulli* (Tottori, Hyogo); *S. yatsugatakensis* (Nagano); *S. inbecillus* (Fukushima, Niigata, Gunma, Tochigi, Nagano and Gifu); *S. nemoralis* (Yamanashi); *S. incalcaratus* (Shizuoka); *S. clio* (Mie); *S. araiorum* (Saitama); *S. ellipsoides* (Yamagata, Fukushima); *S. alesi* (Shizuoka); *S. praeclarus* (Tokushima). *Dianous gongen* Y. Watanabe, 1984 is newly placed in synonym with *D. japonicus* Sawada, 1960; *Stenus ambiguellus* Naomi, 1998a is with *S. shuheii* Naomi, 1990a; *S. geisha* Puthz, 2001 is with *S. nyorai* Naomi, 1990a; and *S. tengu* Hromádka, 1990a is with *S. santira* Naomi, 1988a. *S. bunraku* Hromádka, 1990b is here resurrected as a distinct species (but not as a synonym of *S. zdenae* Hromádka, 1990b). *Stenus asyura hakonensis* Naomi, 2004a is upgraded to a distinct species (*S. hakonensis* Naomi stat. nov.). *Dianous iwakisanus* Y. Watanabe, 1984 and *Stenus carura* Naomi, 1989a are redescribed and illustrated.

Kew words: Coleoptera, Staphylinidae, Steninae, *Dianous*, *Stenus*, new species, new synonym, taxonomic status change, redescription, Japan.

At present, the fauna of rove beetle subfamily Steninae (Coleoptera, Staphylinidae) of Japan consists of 258 species and 8 subspecies which belong to two genera *Dianous* and *Stenus* (Naomi and Puthz, 2013). From various localities in Honshu and Shikoku districts, Japan I discovered 14 new *Stenus* species, all of which belong to the species group of *S. asyura* Naomi. Thus, in this paper (47th contribution to the studies of Steninae) I describe and illustrate them, together with changes of taxonomic status on some Japanese *Dianous* and Stenus species. I also redescribe two little-known Stenine species, together with illustrations of their important characters.

Depositories of Stenine specimens treated in this paper

The type specimens of *Stenus* and *Dianous* treated in this paper are deposited in the following public collections:

KUF: Kyushu University, Fukuoka
CBM-ZI: Natural History Museum and Institute, Chiba (Zoology, Insecta)
NMNST: National Museum of Nature and Science, Tsukuba
OMNHO: Osaka Museum of Natural History, Osaka
TUAA: Tokyo University of Agriculture, Atsugi

All specimens (including paratypes) of *Stenus* species treated in this paper are deposited in Naomi Collection (Chiba) when no depositories are specified.

Dianous iwakisanus Y. Watanabe

(Fig. 1A-E)

Dianous iwakisanus Y. Watanabe, 1984, Mem. Nat. Sci. Mus., 17: 134.

Male. Brachypterous species; body 4.3-4.8 mm (fore body 2.2-2.5 mm) in length, moderately shining. Head and abdomen black; prothorax and elytra dark bronze; antennae black, with 9th to 11th segments red to reddish brown; labrum and legs black. Head large, with a pair of narrow but distinct longitudinal depressions, punctures relatively dense, round; pronotum uneven, with a large, shallow, indistinct V-shaped depression, punctures dense, somewhat irregular, round; elytra with sutural area elevated,

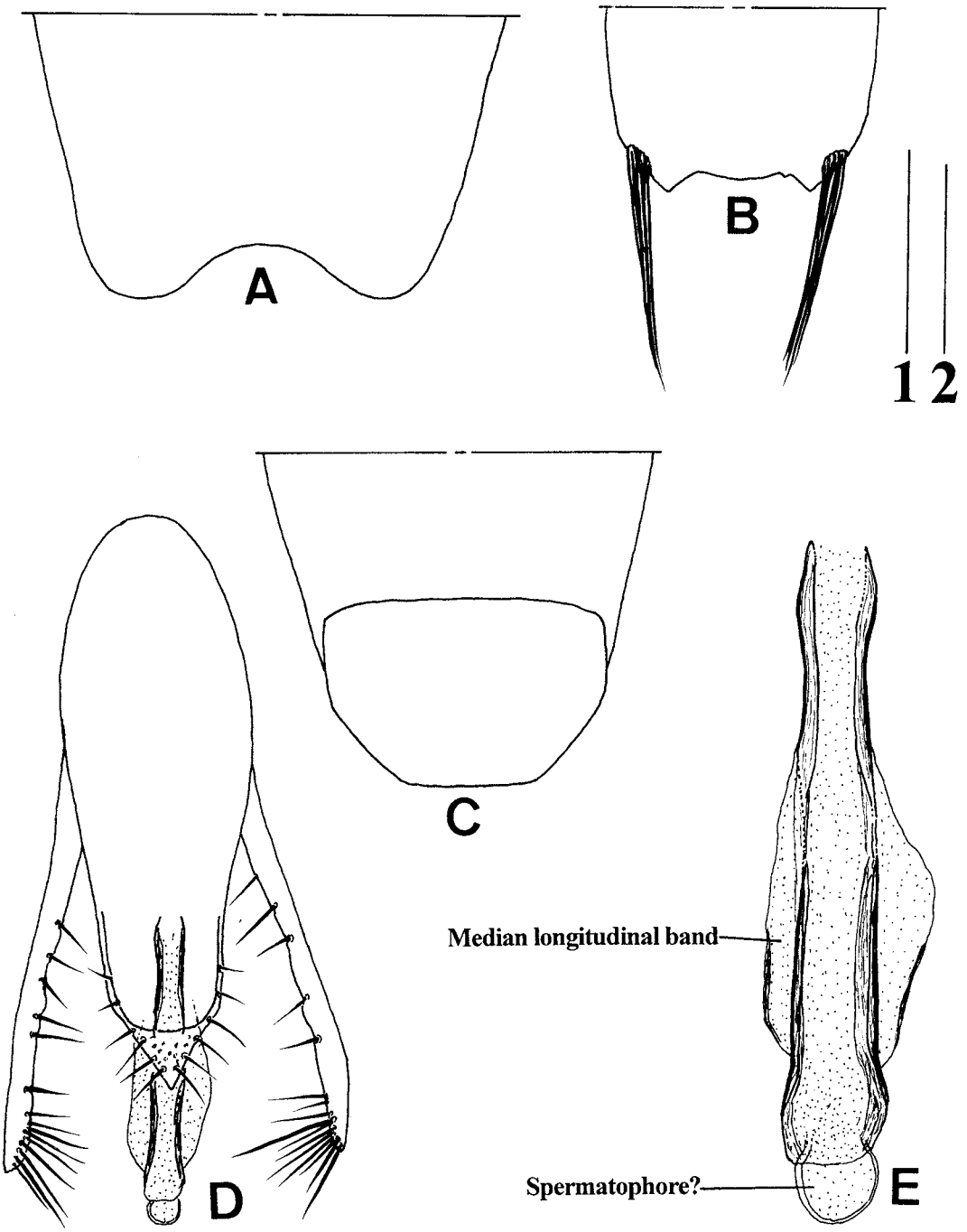

Fig. 1. *Dianous iwakisanus* Y. Watanabe. A, Apical part of 8th venter of male; B, apical part of 9th venter of male; C, 9th and 10th terga of male; D, aedeagus of ventral view; E, endophallus. Scale 1: 0.2 mm for D and 0.1 mm for E; scale 2: 0.2 mm for A-C.

punctures round, dense, irregular, sometimes contiguous; tarsi with 4th tarsomeres weakly bilobed; abdomen with punctures very small, very sparse; paratergites broad, with small, sparse and setiferous punctures.

Seventh venter posteromedially with a flat area which is very weakly, arcuately emarginate at its posterior margin; 8th venter (Fig. 1A) posteromedially with a very large, broad emargination; 9th tergum with its posterior part as in Fig. 1C; 9th venter (Fig. 1B) not serrate and very weakly rounded between apicolateral teeth, the apicolateral teeth very broad, short but pointed, and apicolateral tufts of setae very long; 10th tergum (Fig. 1C) truncate at posterior margin. Aedeagus (Fig. 1D) with median lobe almost elongate-ovoidal in basal 2 / 3, then becoming gradually narrower posteriorly, apicolateral corners distinct, apical sclerotized area triangular in shape, furnished with several setae at each latero-marginal area, sporadically covered with pores, with its anterior margin arcuate. Endophallus with expulsion clasps missing; median longitudinal bands (Fig. 1E) deformed, partially fused with basal tube; basal tube (Fig. 1E) elongate, moderate in length, subparallel-sided, well sclerotized excepting its submembranous median part, with its apical part weakly swollen laterally. Parameres (Fig. 1D) long, elongate, extending posteriorly much beyond the apex of median lobe, each very weakly sinuate at the middle of its mesial margin, furnished sparsely with setae at mesial side of basal 2 / 3, and also with dense setae at apico-mesial part.

Specimen examined. Holotype (TUAA): ♂ labelled "[HOLOTYPE] *Dianous iwakisanus* Y. Watanabe, 1984 / (Mt. Iwaki) Aomori, Japan, 26. Viii. 1969, Coll. T. Kiuti".

Distribution. Japan: Honshu (Aomori Pref.).

Remarks. *D. iwakisanus* is closely allied to *D. japonicus* Sawada, 1960, but this species is clearly distinguishable from the latter by the following points: the prothorax and elytra are dark bronze in coloration; the posterior margin between apicolateral projections in the 9th venter of male is very weakly rounded, without serration (Fig. 1B); the apex of aedeagal median lobe is more strongly pointed (Fig. 1D); the endophallic median longitudinal bands are deformed, and partially fused with basal tubes (Fig. 1E); and the basal tube is well sclerotized except the submembranous median part (Fig. 1E); and the parameres are longer, and extending posteriorly much beyond the apex of median lobe (Fig. 1D).

***Dianous japonicus* Sawada**

Dianous japonicus Sawada, 1960, Ent. Rev. Jpn., 11: 9.
Dianous gongen Y. Watanabe, 1984, Mem. Nat. Sci. Mus., 17: 131. (New synonym.)
Dianous morimotoi Naomi, 1988b, Trans. Shikoku Ent. Soc., 19(1/2): 48. (Synonym.)
Dianous septentrionalis Naomi, 1988b, Trans. Shikoku Ent. Soc., 19(1/2): 50. (Synonym.)

Specimens examined. Holotype of *D. gongen* (NMNST): ♂ [HOLOTYPE] *Dianous gongen* Y. Watanabe, 1984 / Mt. Ushiroeboshi, Mt. Zao, Miyagi Pref., 10. vi. 1976, Coll. Y. Watanabe; allotype of *D. gongen* (NMNST): ♀ [ALLOTYPE] *Dianous gongen* Y. Watanabe, 1984 / Mt. Ushiroeboshi, Mt. Zao, Miyagi Pref., 10. vi. 1976, Coll. Y. Watanabe.

Distribution. Japan: Honshu, Shikoku and Kyushu.

Remarks. As pointed out by Naomi (2011), the shape of aedeagus varies between the local populations of *D. japonicus.* Out of the parts of aedeagus, the apical part of median lobe is highly variable in shape; and thus some local populations of *D. japonicus* characterized mainly by that shape were once described as independent species (Naomi, 1988b). However, since various intermediate conditions exist between the (somewhat characteristic) shapes of apical parts of aedeagus that the local populations show, each shape cannot be used as the key character by which to recognize one local population as new species to science. This is also the case of *D. gongen* that was described from Mt. Zao, Miyagi Pref. by Watanabe (1984); and the somewhat characteristic aedeagal shape that it shows is considered an infraspecific variation of *D. japonicus*. Thus, *D. gongen* Y. Watanabe is here newly placed in synonymy with *D. japonicus* Sawada.

***Stenus gracilior* Naomi sp. nov.**

(Fig. 2A-E)

Male. Brachypterous species; body 3.5-3.6 mm (fore body 1.5-1.6 mm) in length, elongate, moderately shining, with thin legs. Head and abdomen black; prothorax and elytra dark red to black; antennae reddish brown, with infuscate apical segments; labrum black with anterior marginal area reddish brown; legs reddish brown with apical parts of femora infuscate. Head with a pair of shallow longitudinal depressions, punctures dense, round; pronotum with surface almost even, punctures very dense, round to elliptical, with vague median longitudinal depression; elytra (Fig. 2D) with surface very weakly uneven, punctures very

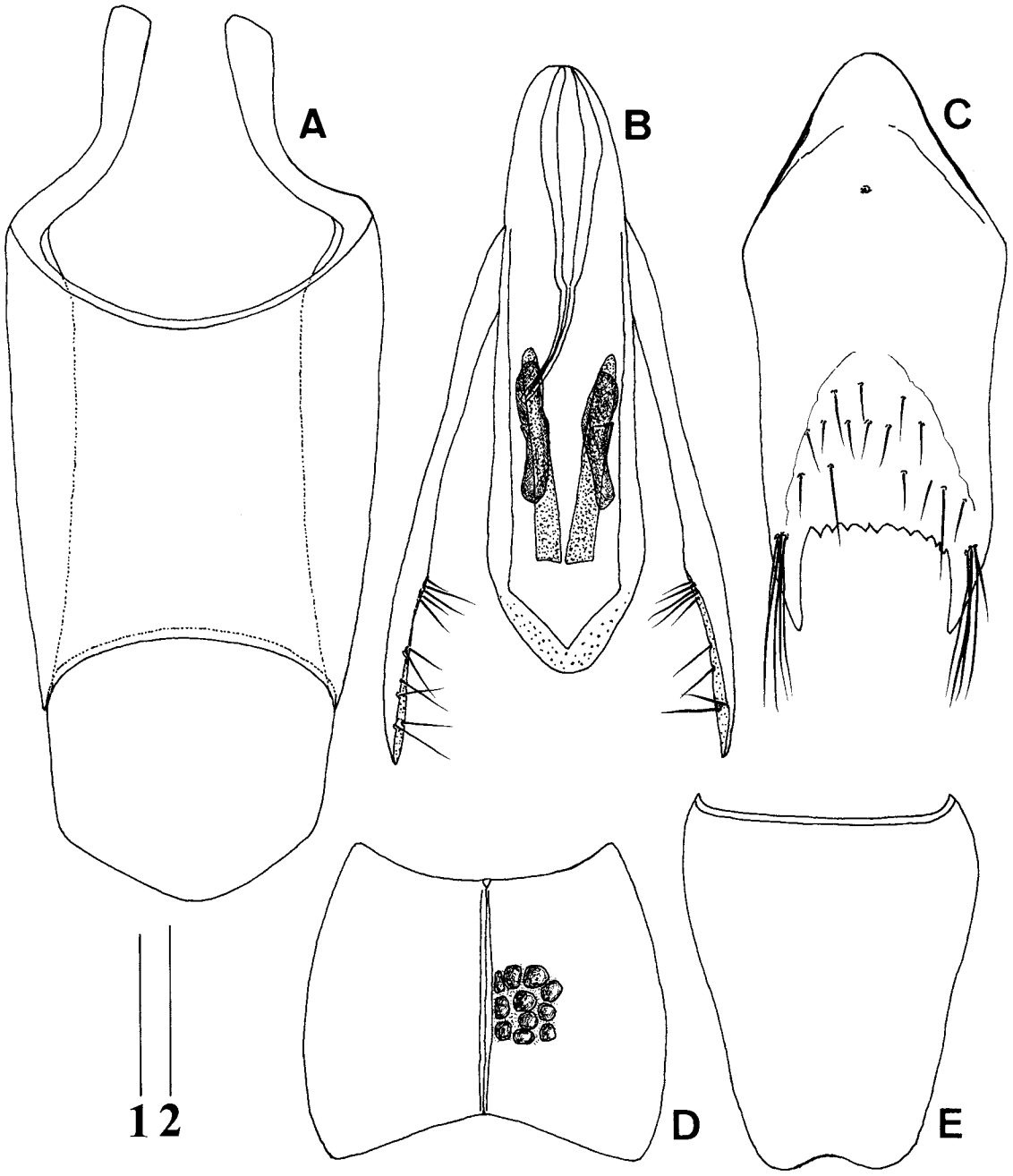

Fig. 2. *Stenus gracilior* Naomi sp. nov. A, Ninth and 10th terga of male; B, aedeagus of ventral view; C, 9th venter of male; D, Elytra; E, 8th venter of male. Scale 1: 0.1 mm for A-C and 0.2 mm for E; scale 2: 0.3 mm for D.

dense, round to nearly round in most cases; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, regular, round, small to moderate in size; 3rd to 6th segments without paratergites nor tergoventral sutures.

Eighth venter (Fig. 2E) posteromedially with a small shallow emargination; 9th tergum (Fig.2A) with ventral apophyses short and thick; 9th venter (Fig. 2C)

serrate between apicolateral teeth, with the apicolateral teeth moderately long and pointed; 10th tergum (Fig. 2A) entire at posterior part. Aedeagus (Fig. 2B) small; median lobe very slender, rounded at apex, with indistinct apicolateral corners; apical sclerotized area covered with small pores. Endophallus (Fig. 2B) with median longitudinal bands narrow, relatively short; expulsion clasps elongate, with anterior plate partially divided from posterior plate by a distinct transverse ridge; basal tube with basal room very large, elongate-ovoidal, tube body thin, attenuate, weakly curved, distinctly constricted behind the middle. Parameres (Fig. 2B) slender, robust; apical part of paramere long but hardly swollen except for weakly swollen apicomesial corner, with 5 or 6 setae at its apicomesial corner, and with other several setae at its marginal area behind apicomesial corner.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157094): ♂, Fudakake, Mts. Tanzawa, Kanagawa Pref., 8. ix. 2011, T. Watanabe leg. Paratype: 1♂, Mt. Ooyama, Mts. Tanzawa, Kanagawa Pref., 3. vii. 2006, T. Watanabe leg.

Distribution. Japan (Honshu: Kanagawa Pref.).

Remarks. *S. gracilior* is closely allied to *S. utan* Naomi, 1998b, but it is clearly distinguishable from the latter by the following points: the aedeagus is more slender and narrower, the endophallic median longitudinal bands are shorter, the expulsion claps are longer, the basal tube body is distinctly constricted behind the middle, and the apical part of paramere is longer (Fig. 2B).

Etymology. The specific epithet of this new species is the comparative degree of Latin adjective "*gracilis*" which means slender and thin; and the median lobe of aedeagus is slender.

Stenus anfractus **Naomi sp. nov.**

(Fig. 3A-E)

Male. Brachypterous species; body 4.5 mm (fore body 2.2 mm) in length, robust, weakly shining, with slender antennae and moderately thick legs. Head black; prothorax, elytra and abdomen dark red; antennae reddish brown, with infuscate apical segments; labrum reddish brown; legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures moderately dense, small, round; pronotum with punctures very dense, round, median longitudinal depression narrow; elytra with surface very weakly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct, regular, round, small to moderate in size, 3rd to 6th segments without paratergites nor tergoventral sutures.

Sixth venter (Fig. 3E) posteromedially with a semicircular flat area; 7th venter (Fig. 3E) anteromedially with a very shallow depression, posteromedially with a shallow, semi-round depression, the depressed area weakly, arcuately emarginate at its posterior margin; 8th venter (Fig. 3D) posteromedially with a medium-sized, subtriangular emargination; 9th tergum with ventral apophyses short, thin; 9th venter (Fig. 3B) irregularly serrate between apicolateral teeth, the apicolateral teeth short, pointed; 10th tergum entire at posterior part. Aedeagus (Fig. 3A) robust; median lobe thick, weakly bulbous at basal part, bluntly pointed at apex, with distinct apicolateral corners; apical sclerotized area broad, subtriangular in shape, ridged laterally, shallowly arcuate at anterior margin. Endophallus with median longitudinal bands (Fig. 3A) narrow, relatively long; expulsion clasps (Fig. 3C) large, slightly asymmetrical, separated but broadly combined by submembrane behind the middle, anterior plate pointed, and demarcated from posterior plate by a distinct transverse suture; basal tube (Fig. 3A) moderately thick, sinuous, basal room elongate-oviodal in shape, basal constriction distinct, tube body weakly constricted twice, then strongly curved near the apex to form a C-shaped tube. Parameres (Fig. 3A) acutely pointed at apex; apical part of paramere long, weakly swollen, with 8 to 9 setae at its marginal area.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157095): ♂, Kamaga-dake, Komono-cho, Mie Pref., 27. viii. 1994, H. Yokozeki leg.

Distribution. Japan (Honshu: Mie Pref.).

Remarks. *S. anfractus* is allied to *S. incommodus* Puthz, 1993, *S. hayashii* Puthz, 2003, and *S. shuheii* Naomi, 1990a, but this new species is clearly distinguishable from the latters by the following points: the aedeagal median lobe has distinct apicolateral corners (Fig. 3A), and the endophallic basal tube strongly curves near the apex to form a C-shaped tube (Fig. 3A).

Etymology. The specific epithet of this new species is derived from the Latin adjective "*anfractus*" which means "sinuous" because the tube body of endophallic basal tube is sinuous.

Stenus komonoensis **Naomi sp. nov.**

(Fig. 4A-E)

Male. Brachypterous species; body 4.1 mm (fore

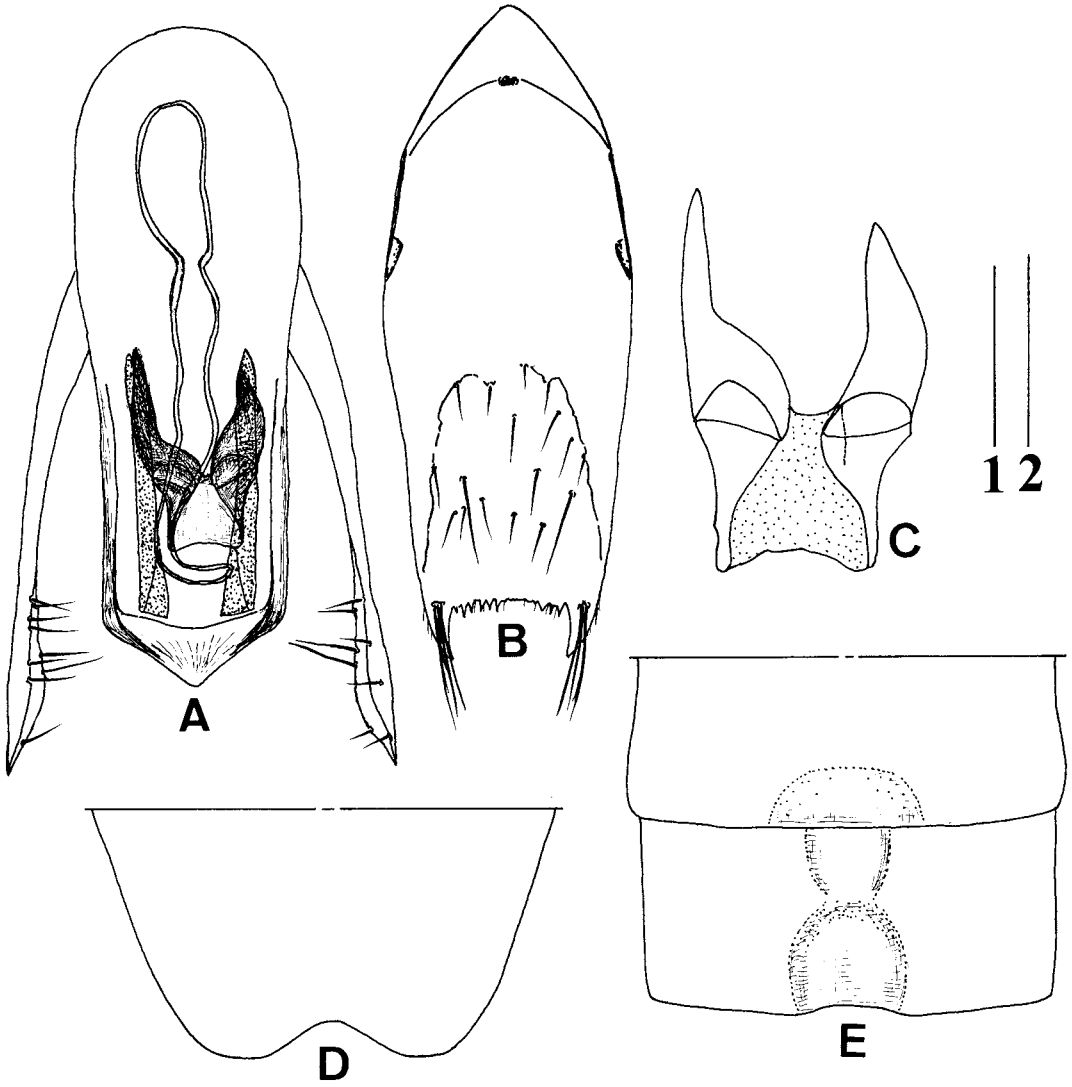

Fig. 3. *Stenus anfractus* Naomi sp. nov. A, Aedeagus of ventral view; B, 9th venter of male; C, expulsion clasps; D, apical part of 8th venter of male; E, 6th and 7th venters of male. Scale 1: 0.2 mm for A, B, D and 0.1 mm for C; scale 2: 0.3 mm for E.

body 2.0 mm) in length, elongate, moderately shining, with antennae and legs moderate in length. Head black; prothorax, elytra and abdomen reddish brown to dark reddish brown; antennae reddish brown, with infuscate apical segments; labrum reddish brown; legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures moderately dense, round; pronotum (Fig. 4A) with punctures very dense, round, median longitudinal depression narrow; elytra (Fig. 4A) with surface very weakly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct, regular, round, small to moderate in size; 3rd to 6th segments without paratergites nor tergoventral sutures.

Sixth venter posteromedially with a semicircular flat area; 7th venter with a shallow depression located from the central to posteromedian part, and unique in shape as in Fig, 4D, the depressed area weakly, arcuately emarginate; 8th venter (Fig. 4D) posteromedially with a medium-sized, subtriangular

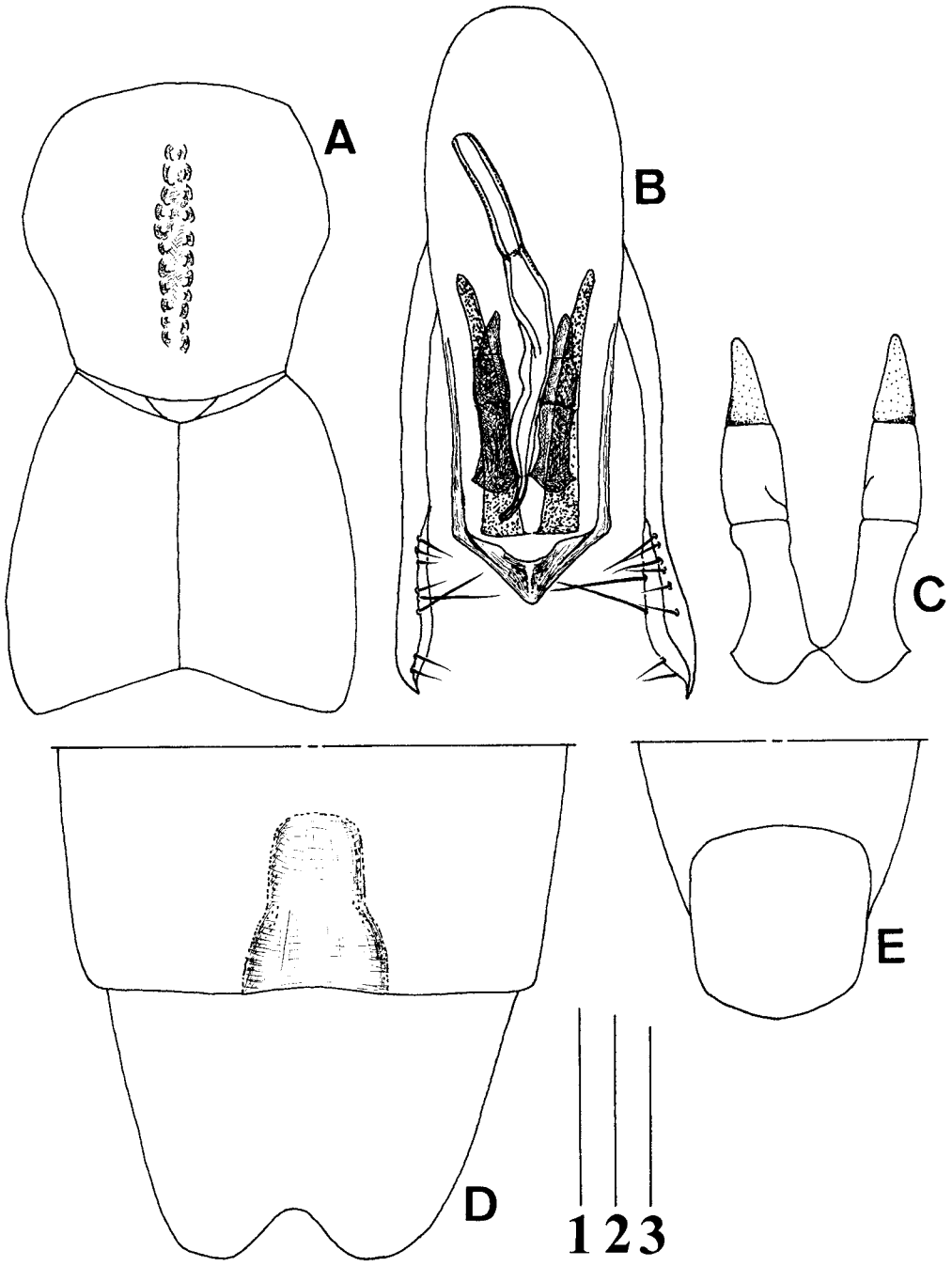

Fig. 4. *Stenus komonoensis* Naomi sp. nov. A, Pronotum and elytra; B, aedeagus of ventral view; C, expulsion clasps; D, 7th and 8th venters of male; E, 9th and 10th terga of male. Scale 1: 0.3 mm for A; scale 2: 0.2 mm for B and 0.1 mm for C; scale 3: 0.2 mm for E.

emargination; 9th tergum with apical part as in Fig. 4E; 9th venter arcuately emarginate and minutely serrate between apicolateral teeth, the apicolateral teeth moderately long, acutely pointed; 10th tergum (Fig. 4E) entire at posterior part. Aedeagus (Fig. 4B) robust; median lobe thick, weakly bulbous at basal part, bluntly pointed at apex, with distinct apicolateral corners; apical sclerotized area subtriangular in shape, weakly ridged laterally, anteromedially with a narrow, arcuate emargination. Endophallus with median longitudinal bands (Fig. 4B) moderately bread, long; expulsion clasps (Fig. 4C) large, combined by a point at the posteromesial margin of posterior plate, anterior plate demarcated from posterior plate by a transverse suture, anterior plate divided into two parts by a distinct transverse suture, posterior plate broadened posteriorly, with its posterior margin rounded; basal tube (Fig. 4B) with basal room thin, cylindrical, basal constriction indistinct, tube body weakly sinuous, weakly curved near the apex. Parameres (Fig. 4B) robust, acutely pointed at apex; apical part of paramere long, moderately swollen, with 8 to 10 setae at its marginal area.

Female. Unknown.

Specimen examined. Holotype (CBM-ZI: 157096): ♂, Komono-cho, Mie Pref., 26. xi. 1989, A. Amagasu leg.

Distribution. Japan (Honshu: Mie Pref.).

Remarks. *S. komonoensis* is considered the sister species of *S. anfractus* because they share the common, basic external as well as aedeagal structures, including the structure and punctation of pronotum (Fig. 4A), the shape of aedeagal median lobe and endophallic basal tube (Fig. 4B). However, this new species is clearly distinguishable from the latter by the following points: the body is thinner; the antennae are shorter; the 7th venter is not depressed at the basimedian part (Fig. 4D); the apical sclerotized area of aedeagal median lobe is anteromedially with a narrow, arcuate emargination (Fig. 4B); the endophallic expulsion clasps are symmetrical, and combined each other by a point at the posteromesial margin of posterior plate (Fig. 4C); the basal room of basal tube is thinner (Fig. 4B); and the tube body of basal tube is only weakly curved near the apex (Fig. 4B).

Etymology. The specific epithet of this new species is derived from the name of type locality of this species, “Komono” in Mie Pref.

Stenus shuheii **Naomi**

Stenus shuheii Naomi, 1990a, Akitu, New Ser., 113: 2.
Stenus ambiguellus Naomi, 1998a, Ent. Sci., 1: 101. (New synonym.)

Specimens examined. Holotype of *Stenus shuheii* (KUF): ♂ [Holotype] *Stenus shuheii* Naomi, 1990 / Otomizudani, Hyogo P., 6. vi. 1984. S. Nomura leg.; 1♀, Onzui, Hyogo Pref., 15. ix. 1992, T. Ito leg.; 1♂ 2♀, Ashiu, Kyoto-fu, 15. viii. 1992, T. Ito leg.; 2♂, Hanase, Kyoto-fu, 4. ix. 1987, T. Ito leg.

Distribution. Japan: Honshu (Hyogo and Kyoto Prefs.).

Remarks. I described *S. shuheii* based on 3 male specimens from Onzui, Hyogo Pref. (Naomi, 1990a). When I reexamined its paratypes several years after I described it, I noticed that one male paratype of *S. shuheii* has a different form of aedeagus that I illustrated in the paper of Naomi (1990a, fig. 2E). Thus, I described *S. ambiguellus* based on the male paratype of *S. shuheii* (Naomi, 1998a). The aedeagus of *S. shuheii* illustrated in the paper of Naomi (1990a, fig. 2E) was, however, that of the other paratype specimen; and the aedeagus of the holotype specimen of *S. shuheii* has not been examined so far. This time I examined it, and I found that it is different in structure from the aedeagus of fig.2E (Naomi, 1990a) and is just equivalent with that of *S. ambiguellus*. In addition, regarding the other characters found in the external structure of body, those specimens identified as *S. ambiguellus* show the same conditions as in the holotype of *S. shuheii*. Thus, *S. ambiguellus* Naomi, 1998a is here newly placed in synonymy with *S. shuheii* Naomi, 1990. I also found that the paratype specimen of *S. shuheii* (whose aedeagus is illustrated in Naomi, 1990a, fig. 2E) is a new species, but since it belongs to the *S. cephalotes*-group, I do not treat it taxonomically in this paper.

Stenus tumifactus **Naomi sp. nov.**

(Fig. 5A-E)

Male. Brachypterous species; body 4.0 mm (fore body 1.9 mm) in length, elongate, moderately shining, with antennae and legs moderate in length. Head black; prothorax, elytra and abdomen dark reddish brown to dark brown; antennae reddish brown; labrum reddish brown; legs yellowish brown to reddish brown. Head with a pair of shallow longitudinal depressions, punctures moderately dense, round; pronotum with surface slightly uneven, punctures very dense, round, median longitudinal depression narrow, indistinct; elytra narrowed anteriorly, with sutural area elevated, punctures very dense, round; tarsi with 4th tarsomeres

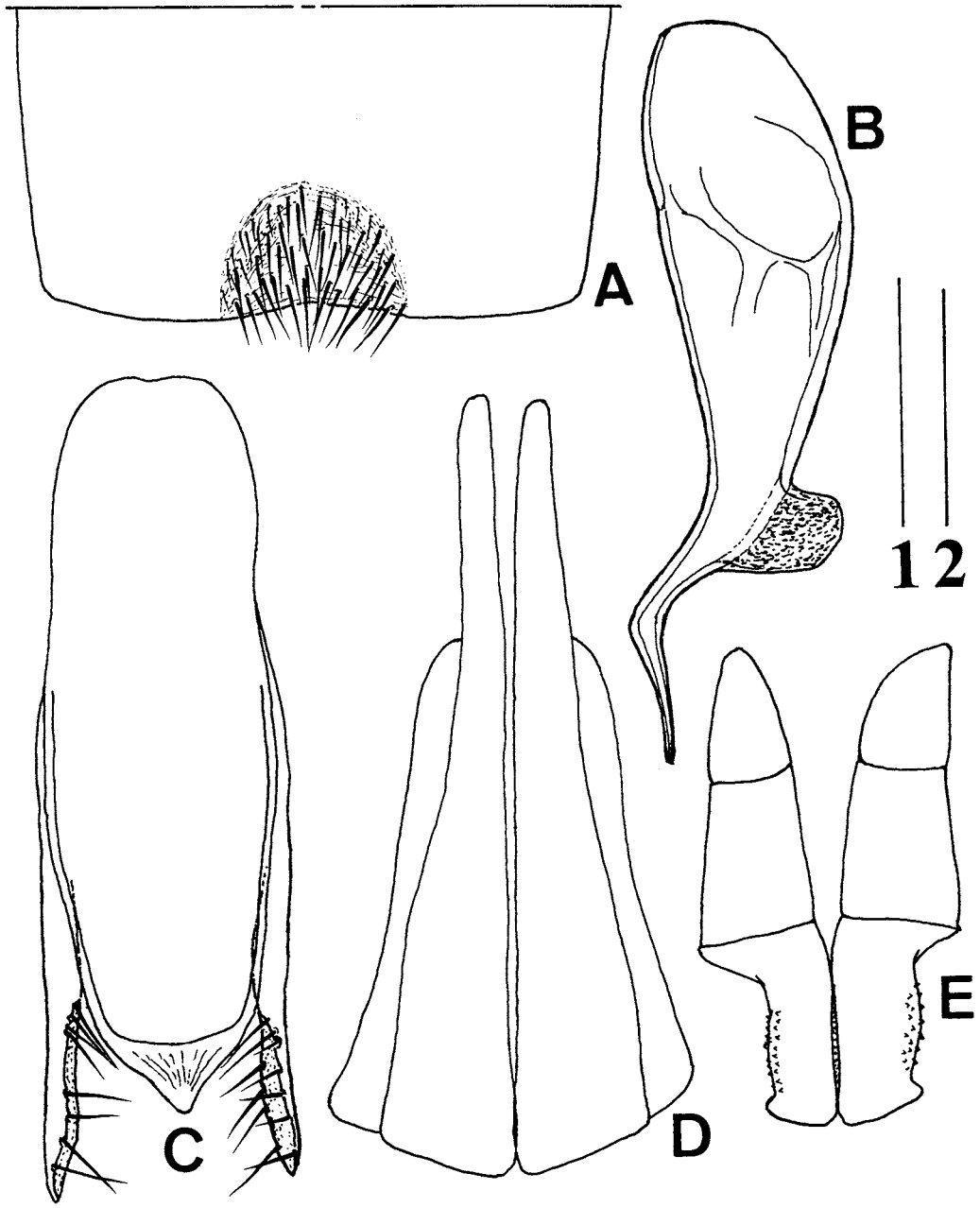

Fig. 5. *Stenus tumifactus* Naomi sp. nov. A, Posterior part of 7th venter of male; B, basal tube; C, external structure of aedeagus; D, median longitudinal bands; E, expulsion clasps. Scale 1: 0.3 mm for A; scale 2: 0.2 mm for B, C and 0.1 mm for D, E.

bilobed; abdomen with punctures moderately dense, distinct, round, very small to moderate in size; 3rd to 6th segments without paratergites nor tergoventral sutures.

Seventh venter (Fig. 5A) posteromedially with a shallow semicircular depression, the depression posteriorly with a very shallow emargination; 10th tergum entire. Aedeagus (Fig. 5C) robust; median lobe

elongate, bluntly pointed at apex, with apicolateral corners gently rounded; apical sclerotized area subtriangular in shape, with anterior margin shallowly arcuate. Endophallus with median longitudinal bands (Fig. 4D) long, broad, flanked with lateral bands; expulsion clasps (Fig. 5E) large, connate by the mesial margin of posterior plate, anterior plate narrowed anteriorly, demarcated from posterior plate by a transverse suture, and furthermore divided antero-posteriorly into two parts by a distinct transverse suture, posterior plate abruptly narrowed at about anterior 1/3, its lateral marginal area very slightly swollen, and covered with minute denticles; basal tube (Fig. 5B) with basal room very large, ovoidal, and without basal constriction, tube body strongly swollen laterally at anterolateral part, then narrowed apically but distinctly curved when seen dorsally, acutely pointed at apex. Parameres (Fig. 5C) almost straight, pointed at apex; apical part of paramere relatively long, hardly swollen, with 8 to 11 setae at its marginal area.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157097): ♂, Samegai Valley, Samegai-cho, Shiga Pref., 5. vi. 1997, S. Nomura leg.

Distribution. Japan (Honshu: Shiga Pref.).

Remarks. *S. tumifactus* is closely allied to *S. shuheii* Naomi, and they basically share the common conditions regarding the coloration of body and the external structure of aedeagal median lobe and parameres, but this new species is clearly distinguishable from the latter by the following points regarding the structure of endophallic expulsion clasps (Fig. 5E): the anterior plate is larger than the posterior plate, and is divided antero-posteriorly into two parts by a distinct transverse suture; and the posterior plate is abruptly narrowed at about anterior 1/3, its lateral marginal area is very slightly swollen, and covered with minute denticles, and also by the following points regarding the structure of basal tube (Fig. 5B): the basal tube is shorter, distinctly thicker in basal 2/3 but narrower in apical 1/3, attenuate behind the second turn, and acutely pointed at apex; and the basal room is larger and ovoidal, with no basal constriction. The 8th segment and 9th venter of abdomen are missing in the holotype specimen.

Etymology. The specific epithet of this new species is derived from the Latin participle "*tumifactus*" which means "swollen"; the anterolateral part of the tube body of endophallic basal tube is swollen.

Stenus nyorai **Naomi**

Stenus nyorai Naomi, 1990a, Akitu, New Ser., 113: 8.
Stenus geisha Puthz, 2001, Rev. Suis. Zool., 108: 45. (New synonym.)

Specimens examined. Paratype of *Stenus nyorai*: 1♀, Aokigahara, Mt. Fuji, Yamanashi Pref., 23. vii. 1984, S. Nomura leg.; 1♂1♀, same locality, 28. vi. 1991, T. Ito leg.; 2♂2♀, Mt. Yanbushi, Shizuoka City, Shizuoka Pref., 1. viii. 2001, T. Watanabe leg.; 2♂3♀, Fijinomiya, Mt. Fuji, Shizuoka Pref., 8. vi. 1996, S. Nomura leg.; 1♂, Mt. Takahachi, Fijinomiya City, Shizuoka Pref., 17. vi. 2010, T. Watanabe leg.

Distribution. Japan: Honshu (Yamanashi and Shizuoka Prefs.).

Remarks. *S. nyorai* was described by Naomi (1990a) based on 3 males and 1 female collected from Aokigahara located at the northern slope of Mt. Fuji in Yamanashi Pref., while *S. geisha* was described by Puthz (2001) based on 1 female collected from Ohsawa, Subaru-line located also at the northern slope of Mt. Fuji. Both holotype localities of these two species are located at the northern slope of Mt. Fuji; and furthermore these species are similar in external structure to each other. Thus I compared *S. geisha* with *S. nyorai* in some important characters, using the data of the holotype of *S. geisha* that I obtained from the original description by Puthz (2001). First, the spermatheca of *S. geisha* is basically the same in structure as that of *S. nyorai.* In addition, the female of S. geisha has the unique, ovoidal structure between 9th gonocoxites (Puthz, 2001, fig.6) as in *S. nyorai.* The observation suggests that these two species are conspecific. Thus, *S. geisha* Puthz, 2001 is here newly placed in synonymy with S. nyorai Naomi, 1990a.

Stenus carura **Naomi**

(Fig. 6A-E)

Stenus carura Naomi, 1989a, Elytra, Tokyo, 17: 48.

Male. Brachypterous species; body 3.7 mm (fore body 1.9 mm) in length, elongate, moderately shining, with relatively thick legs. Head black; prothorax, elytra and abdomen reddish brown to dark reddish brown; antennae reddish brown with infuscate apical segments; labrum and legs clear reddish brown. Head with a pair of large longitudinal depressions, punctures moderately dense, round, somewhat umbilicate; pronotum with surface a little uneven, punctures very dense, round, median longitudinal depression vague; elytra with surface a little uneven, punctures very dense, rough; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct,

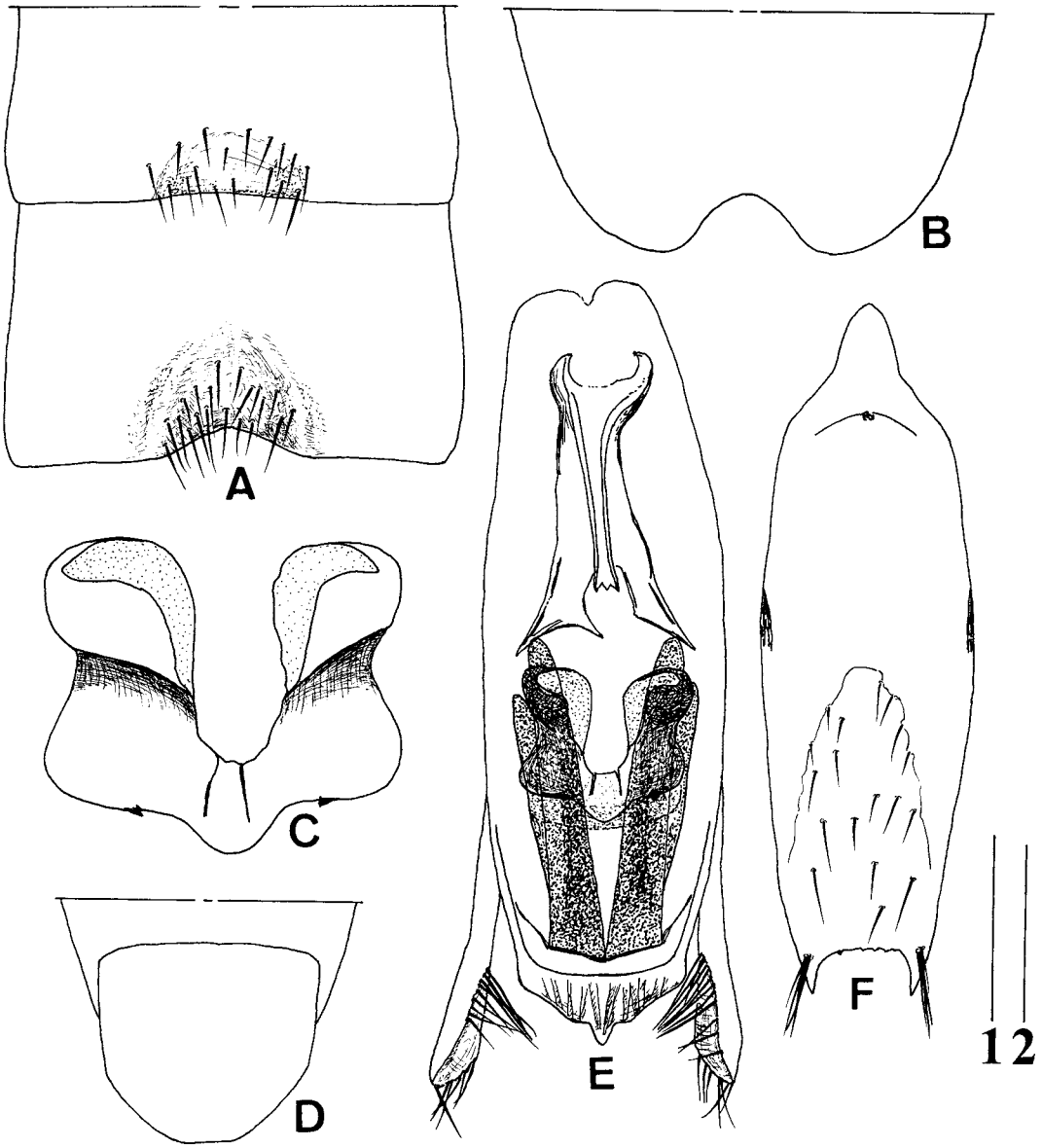

Fig. 6. *Stenus carura* Naomi. A, Sixth and 7th venters of male; B, apical part of 8th venter of male; C, expulsion clasps; D, 9th and 10th terga of male; E, aedeagus of ventral view; F, 9th venter of male. Scale 1: 0.3 mm for A; Scale 2: 0.2 mm for B, D-F and 0.1 mm for C.

small to very small, round to elliptical; 3rd to 6th segments without paratergites nor tergoventral sutures.

Sixth venter (Fig. 6A) posteromedially with a very shallow, semicircular depression, the depressed area very weakly, arcuately emarginate; 7th venter (Fig. 6A) posteromedially with a moderately deep, semicircular depression, the depressed area weakly swollen at its lateral sides, moderately emarginate; 8th venter (Fig. 6B) posteromedially with a large semicircular emargination; 9th tergum with its apical part as in Fig. 6D; 9th venter (Fig. 6F) with apicolateral projections short, acutely pointed, posterior margin hardly serrate; 10th tergum (Fig. 6D) entire. Aedeagus (Fig. 6E) large, robust; median lobe

elongate with distinct apicolateral corners; apical sclerotized area longitudinally striated, with a pointed apicomedian tooth. Endophallus (Fig. 6E) with median longitudinal bands very broad, long; expulsion clasps (Fig. 6C) large, relatively thick, connate by posteromesial parts, each broad-bean-shaped, its anterior plate pigmented (Fig. 6E), opened mesially, demarcated from posterior plate by a distinct oblique ridge (Fig. 6C), posterior plate with a small, sclerorized tooth at posterior margin; basal tube (Fig. 6E) almost Y-shaped, broad, weakly asymmetrical, basal constriction distinct, tube body with its apical right process bifurcate, acutely pointed at the apices of branches, apical left process mesially angulate, acutely pointed at apex. Parameres (Fig. 6E) slender, with apical areas each weakly swollen, almost rounded apically, furnished with moderately long setae at its basiventral margin and with relatively short setae at apical margin.

Female. Unknown.

Specimen examined. Holotype (KYF): ♂, Holotype *Stenus carura* Naomi, 1989 / Mt. Ishizuchi, Ehime Pref., 16. vi. 1981, S. Naomi leg.

Distribution. Japan (Shikoku: Ehime Pref.).

Remarks. *S. carura* Naomi is allied to *S. bishamon* Naomi, 1998b, but it is clearly distinguishable from the latter by the following points: the paratergites and tergoventral sutures are missing in 3rd to 6th abdominal segments, the aedeagal median lobe is provided only with one apicomedian tooth (Fig. 6E), the endophallic expulsion clasps are connate by posteromesial parts (Fig. 6C), and the basal tube is broad and Y-shaped (Fig. 7E). This species has been so far known only by the holotype specimen, suggesting that this seems to be a rare species.

Stenus davidhulli **Naomi sp. nov.**
(Fig. 7A-F)

Male and female. Brachypterous species; body 4.2-4.3 mm (fore body 2.0-2.1 mm) in length, elongate, moderately or strongly shining. Head black; prothorax, elytra and abdomen reddish brown to dark reddish brown; labrum reddish brown; antennae and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures moderately dense, round, distinct; pronotum with surface slightly uneven, punctures very dense, round to elliptical, median longitudinal depression indistinct; elytra with punctures very dense, round to elliptical, somewhat rough; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct, round to elliptical in anterior segments, very small in posterior segments; 3rd segment with distinct paratergites; 4th to 6th segments without paratergites nor tergoventral sutures.

Male. Sixth venter (Fig. 7D) posteromedially with a large, semicircular flat area, which is very shallowly emarginate; 7th venter (Fig. 7D) with a very large, moderately deep depression, the depressed area moderately emarginate; 8th venter (Fig. 7D) posteromedially with a V-shaped emargination; 9th tergum with ventral apophyses thick, short; 9th venter (Fig. 7B) with apicolateral projections acutely pointed, posterior margin irregularly serrate; 10th tergum entire. Aedeagus (Fig. 7A) large, robust; median lobe angulate at apicolateral corners; apical sclerotized area provided with an apicomedian cusp, shallowly notched just at sides of the cusp to form a pair of blunt subcusps (i.e., tricuspidate), bidentate on its anterior margin. Endophallus with median longitudinal bands (Fig. 7F) relatively broad, distinctly divergent anteriorly; explusion clasps (Fig. 7A) combined only by the posteromesial corner of posterior plate, partially pigmented, anterior plate distinctly demarcated from posterior plate by a transverse suture, posterior plate shortly projecting posterolaterally; basal tube (Fig. 7E) with basal room ovoidal, basal constriction very indistinct, tube body very thick, about as thick as basal room at basal part, abruptly constricted near the middle to form a thin tube which is slightly sinuous. Parameres (Fig. 7A) slender, straight, rounded at apex; apical part of paramere relatively long, moderately swollen, with 6 to 7 setae of moderate length on its ventro-marginal area, and also with a few short setae on its dorso-marginal area.

Female. Eighth venter bluntly pointed at the middle of posterior margin; gonocoxites each with apicolateral tooth acutely pointed, posterior margin minutely serrate; 10th tergum gently rounded at posterior margin. Spermatheca (Fig. 7C) robust, with capsule small, short, RT-duct thick, only indistinctly demarcated from spermathecal duct; spermathecal duct relatively thick, strongly coiled with 4 turns, basal valve short, basal duct sclerotized, basal pouch large, mushroom-shaped, submembranous.

Type series. Holotype (CBM-ZI: 157098): ♂, Mt. Hisamatsu, Tottori Pref., 9. vi. 1984, S. Nomura leg. Paratypes: 2♂3♀, Akazai, Hyogo Pref., 23. ix. 1979, T. Ito leg.; 3♀, same locality, 15. ix. 1986, T. Ito leg.

Distribution. Japan (Honshu: Tottori and Hyogo Prefs.).

Remarks. *S. davidhulli* is allied to *S. carura* Naomi from Shikoku, but the former is distinguishable from

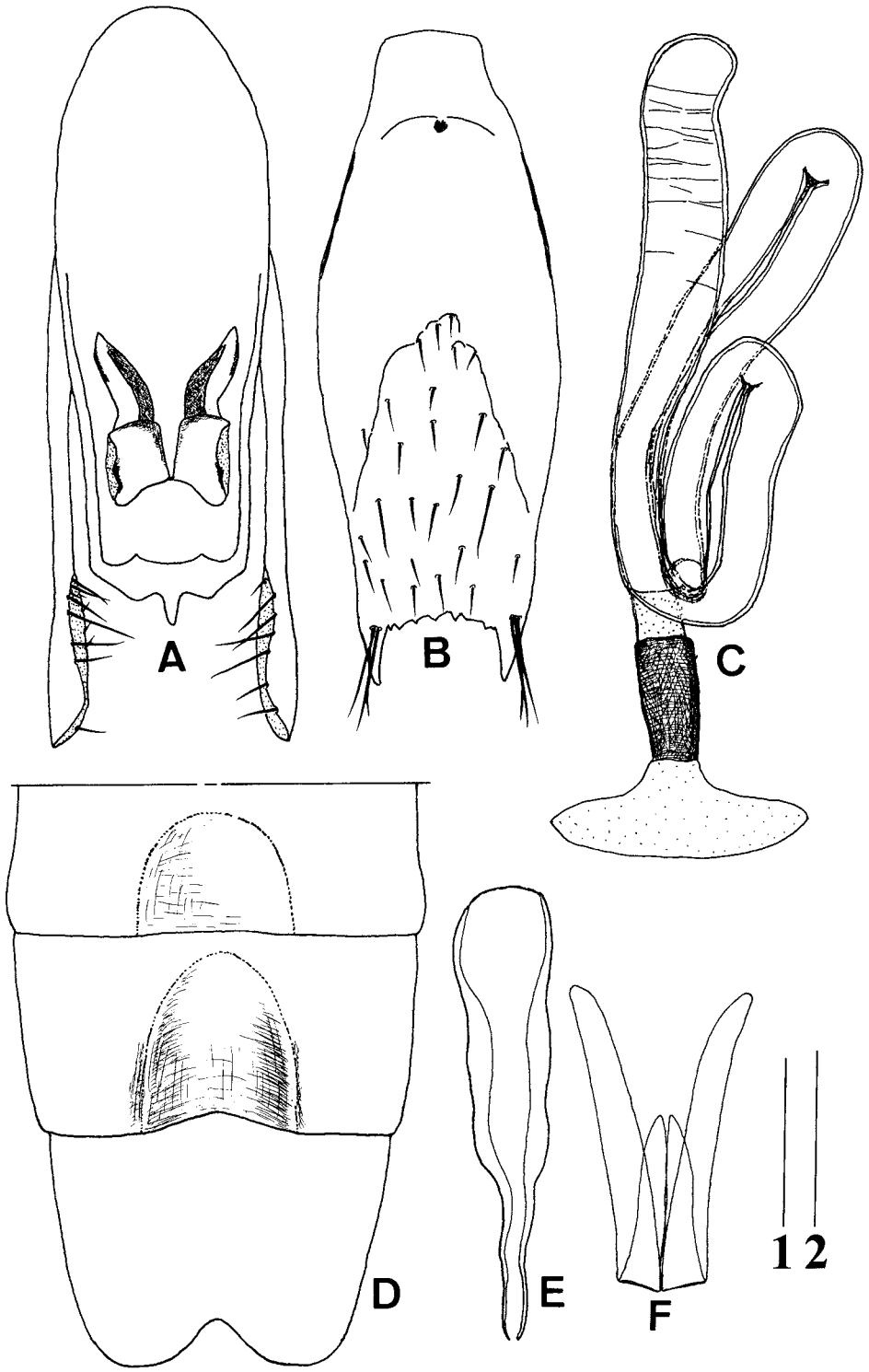

Fig. 7. *Stenus davidhulli* Naomi sp. nov. (A, E, F, Hisamatsu; B-D, Akazai). A, Aedeagus of ventral view; B, 9th venter of male; C, spermatheca; D, Sixth to 8th venters of male; E, basal tube; F, median longitudinal bands. Scale 1: 0.2 mm for A, B, E, F and 0.1 mm for C; scale 2: 0.3 mm for D.

the latter by the following points: the posteromedian depression of 7th venter in male is much larger and longer (Fig. 7D); the emargination at the posterior margin of 8th venter in male is V-shaped (Fig. 7D); the apical part of aedeagal median lobe is provided with a median cusp and a pair of blunt, lateral subcusps (Fig. 7A); the endophallic explusion clasps are combined only by the posteromesial corner of posterior plate (Fig. 7A); the apical part of endophallic basal tube is composed of a simple, thin and slightly sinuate tube (Fig. 7E); and the parameres are longer (Fig. 7A). As in *S. tsurusakii* Naomi, 1998a and *S. akojagai* Hromádka, 1982 (see Naomi, 2006, p.19), *S. davidhulli* is characteristic in that the paratergites are developed in full length in the 3rd segment while they are completely missing in the 4th to 6th segments.

Etymology. The specific epithet of this new species is named in honor of a biophilosopher, late Dr. David L. Hull of Northwestern University, Evanston. He extended his idea on the social and conceptual development of science, paying special attention to the demic structure of scientific theories; and he also played a significant role in disseminating the species-as-individual thesis of Dr. Michael Ghiselin.

Stenus yatsugatakensis **Naomi sp. nov.**
(Fig. 8A-F)

Male and female. Brachypterous species; body 4.1-4.2 mm (fore body 2.0-2.1 mm) in length, elongate, weakly shining. Head black; prothorax and elytra dark reddish brown; abdomen dark brown; labrum dark brown; antennae and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures moderately dense to dense, round, distinct; pronotum with surface uneven, punctures very dense, rough, median longitudinal depression indistinct; elytra with surface uneven, punctures very dense, rough; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, round to elliptical in anterior segments, very small, regular in posterior segments; 3rd segment with reduced paratergites and tergoventral sutures; 4th to 6th segments without paratergites nor tergoventral sutures.

Male. Eighth venter (Fig. 8F) posteromedially with a broad, relatively deep emargination; 9th tergum with ventral apophyses moderately thick and long; 9th venter (Fig. 8B) with apicolateral projections acutely pointed, posterior margin irregularly serrate; 10th tergum rounded at posterior part. Aedeagus (Fig. 8C) robust; median lobe broad, strongly angulate at apicolateral corners; apical sclerotized area tricuspidate with a long apicomedian cusp and paired broad, blunt subcusps. Endophallus with median longitudinal bands (Fig. 8C) broad, divergent anteriorly; explusion clasps (Fig. 8E) separated, anterior plate distinctly demarcated from posterior plate by a transverse suture, posterior plate narrowed behind the anterior broad portion, rounded at posterior margin; basal tube (Fig. 8D) robust, with basal room simple, not swollen laterally, basal constriction very indistinct, tube body very thick, with paired lateral projections incurved and pointed, submembranous flap existing between the lateral projection and apical part of tube. Parameres (Fig. 8C) almost straight, short and pointed; apical part of paramere short, hardly swollen, with 7 to 9 setae of various length on its marginal area.

Female. Eighth venter bluntly pointed at the middle of posterior margin; gonocoxites each with apicolateral tooth small, short and pointed, posterior margin serrate; 10th tergum gently rounded at posterior margin. Spermatheca (Fig. 8A) robust, with capsule small, short, RT-duct moderately thick; spermathecal duct relatively thick, loosely coiled, basal valve moderately long, basal duct sclerotized, running inside sclerotized subconical structure, basal pouch large, mushroom-shaped, submembranous except for its internal structure existing around the opening of spermatheca.

Type series. Holotype (OMNH): ♂, Shirakoma, Kitayatsu, Mt. Yatsugatake, Nagano Pref., 13-16. ix. 1996, T. Ito leg. Paratypes: 1♂1♀, same data as holotype.

Distribution. Japan (Honshu: Nagano Pref.).

Remarks. *S. yatsugatakensis* is allied to *S. houou* Naomi, 2010 and *S. inaequatus* Puthz, 1993 because they share the peculiar conditions of endophallic basal tube (e.g., the basal tube is equipped with paired lateral projections; Fig. 8D), but this new species is distinguishable from them by the combination of following points: the apicomedian cusp of median lobe is longer (Fig. 8C); the parameres are shorter (Fig. 8C); the anterior plate of explusion clasp is completely demarcated from posterior plate (Fig. 8E); and the lateral projection of basal tube is ventrally located, relative to the tube body of basal tube (Fig. 8D).

Etymology. The specific epithet of this new species is derived from the name of holotype locality, "Yatsugatade".

Stenus inbecillus **Naomi sp. nov.**
(Fig. 9A-F)

Stenus sawadaiellus Naomi et Puthz, 1994, Jpn. J.

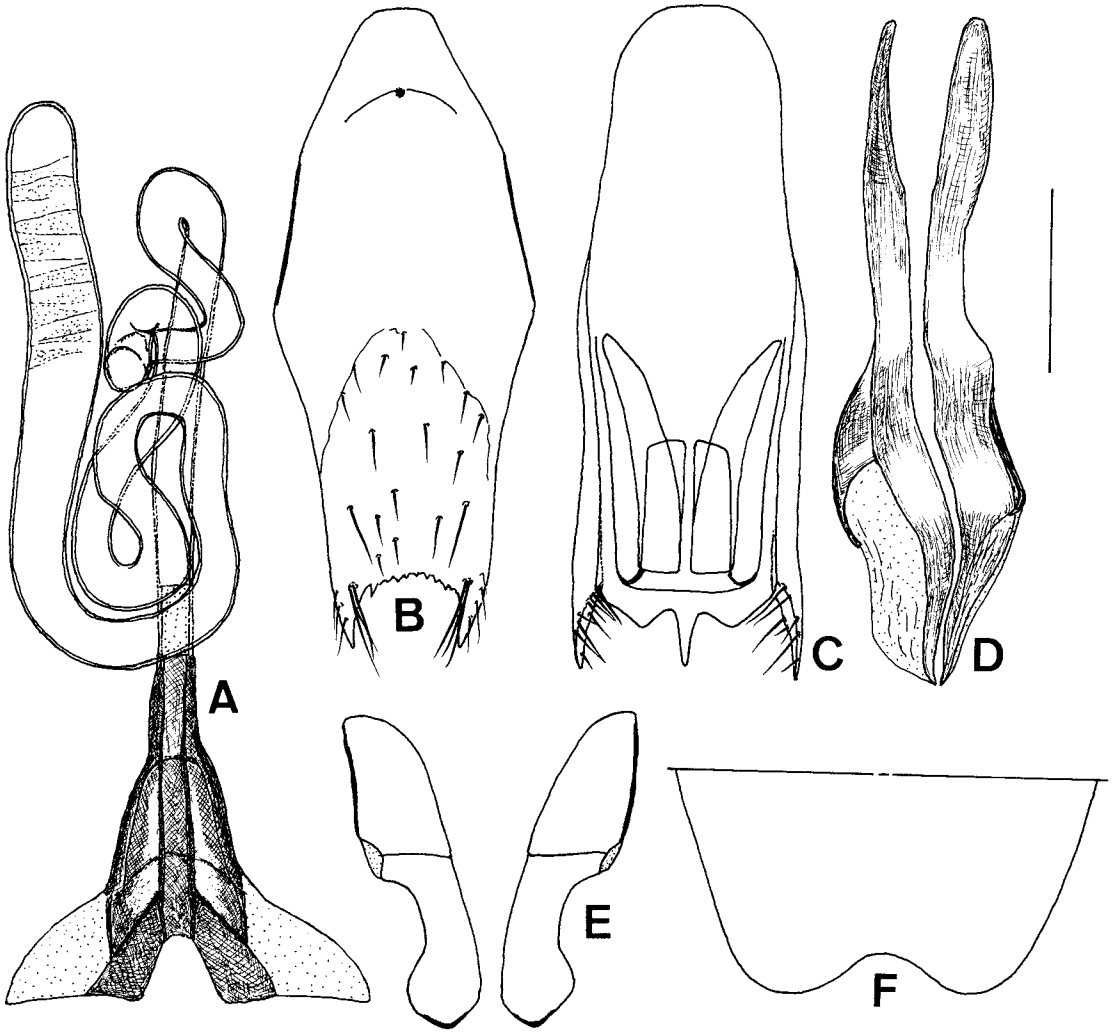

Fig. 8. *Stenus yatsugatakensis* Naomi sp. nov. A, Spermatheca; B, 9th venter of male; C, aedeagus of ventral view; D, basal tube; E, expulsion clasps; F, apical part of 8th venter of male. Scale: 0.2 mm for B, C, F and 0.1 mm for A, D, E.

Ent., 62: 299. (Partim.)

Male and female. Brachypterous species; body 3.6-4.5 mm (fore body 1.8-2.3 mm) in length, elongate, moderately shining. Head black; prothorax and elytra reddish brown; abdomen reddish brown to dark brown; antennae, labrum and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures moderately dense to dense, round, somewhat umbilicate; pronotum with surface slightly uneven, punctures very dense, rough, median longitudinal depression shallow, indistinct; elytra with surface uneven, punctures very dense, rough; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, round to elliptical in anterior segments, very small, regular in posterior segments; 3rd segment with paratergites and tergoventral sutures; 4th to 6th segments without paratergites nor tergoventral sutures.

Male. Seventh venter (Fig. 9F) posteromedially with a subtriangular flat area; 8th venter (Fig. 9F) posteromedially with a relatively deep emargination; 9th tergum with ventral apophyses thin and short; 9th venter (Fig. 9B) with apicolateral projections acutely pointed, posterior margin serrate; 10th tergum rounded at posterior part. Aedeagus (Fig. 9E) with median lobe

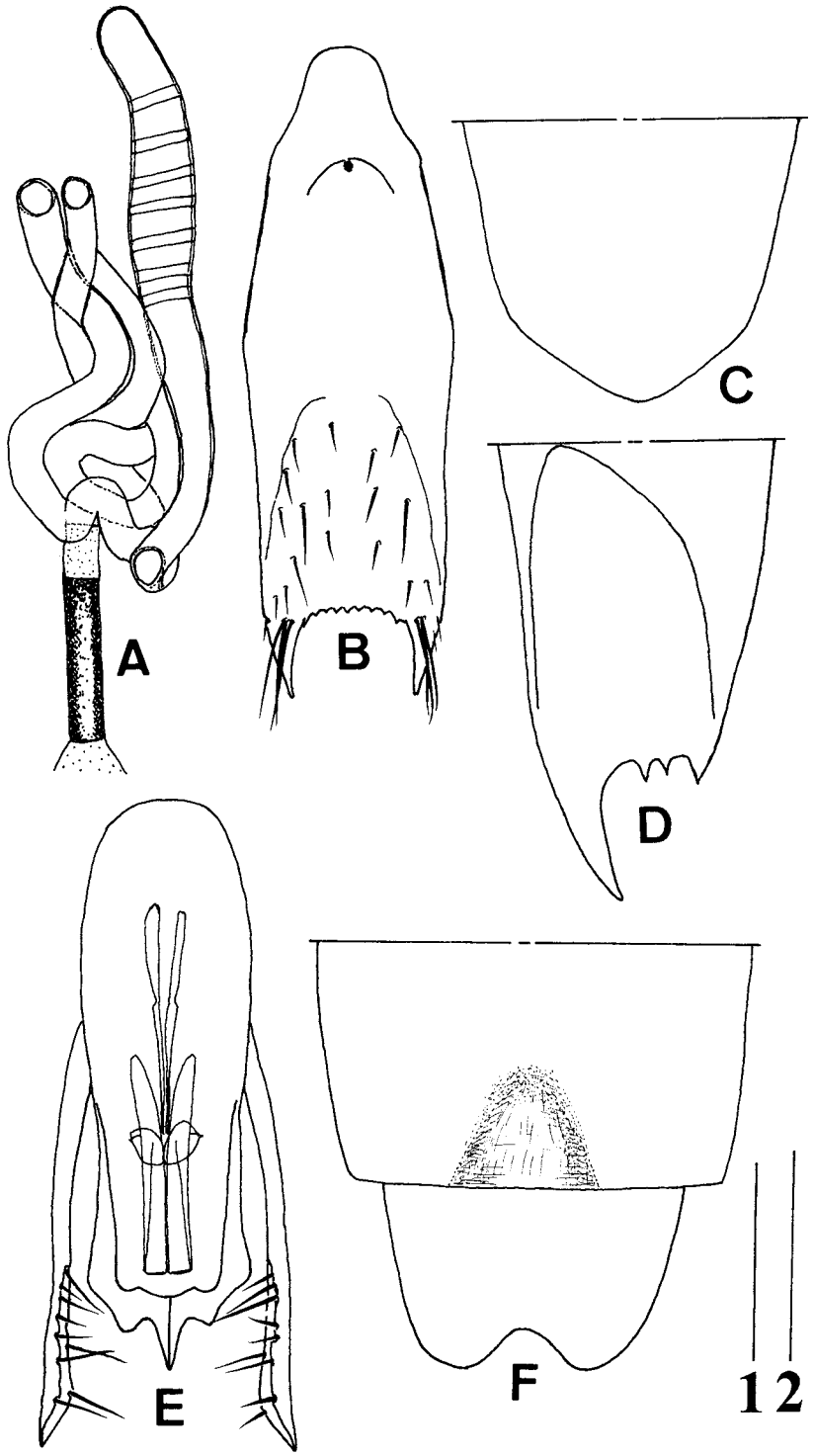

Fig. 9. *Stenus inbecillus* Naomi sp. nov. (Hinoemata, A; Nomugi, B-F). A, Spermatheca; B, 9th venter of male; C, posterior part of 8th venter of female; D, apical part of gonocoxite of female; E, aedeagus of ventral view; F, 7th and 8th venters of male. Scale 1: 0.2 mm for B, E and 0.1 mm for A, D; scale 2: 0.4 mm for C, F.

weakly bulbous in basal 1/2, apicolateral corners weakly expanded laterally and angulate; apical sclerotized area tricuspidate with a long, stout apicomedian cusp and paired blunt subcusps, bidentate on its anterior margin, with a median longitudinal suture running at its full length. Endophallus with median longitudinal bands (Fig. 9E) narrow, moderately long; explusion clasps (Fig. 9E) combined mesially, small, each almost leaf-shaped, anterior plate very small, partially demarcated from posterior plate, posterior plate with a very small denticle on anterolateral corner; basal tube (Fig. 9E) simple, thin, basal room composed of two straight shafts, basal constriction shallow but distinct, tube body straight, attenuate. Parameres (Fig. 9E) slender, very slightly incurved, pointed; apical part of paramere very long, weakly swollen a little before the tip, with 9 setae of various length on its marginal area.

Female. Eighth venter (Fig. 9C) bluntly pointed at the middle of posterior margin; gonocoxites (Fig. 9D) each with apicolateral tooth moderately long, acutely pointed, posterior margin with 3 dents; 10th tergum gently rounded at posterior margin. Spermatheca (Fig. 9A) with capsule long, rounded apically, RT-duct moderately thick; spermathecal duct thinner that RT-duct, tightly coiled, basal valve short, basal duct relatively long, sclerotized, basal pouch almost submembranous.

Type series. Holotype (CBM-ZI: 157099): ♂, Nomugi-pass, Nagawa-mura, Nagano Pref., 8. viii. 1996, T. Kishimoto leg. Paratypes: 2♂6♀, Kozodaira, Hinoemata-vil., Fukushima Pref., 26. vii. 1996, S. Naomi leg.; 1♂, Mt. Azuma, Fukushima Pref., 10. vii. 1985, S. Nomura leg.; 3♂1♀, Nakatsugawa, Mt. Azuma, Fukushima Pref., 19. viii. 1996, S. Naomi leg.; 1♂, Renge Spa, Itoigawa-shi, Niigata Pref., 8. vi. 1990, T. Kishimoto leg.; 2♂, Mikuni Pass, Niiharu-vil., Gunma Pref., 27. vi. 1997, S. Naomi leg.; 1♂, Mihira Pass, Ozegahara, Gunma Pref., 24. vii. 1995, H. Tamura leg.; 1♂, Near Marunuma, Gunma Pref., 7. ix. 1965, Y. Watanabe leg.; 1♂, Yumoto, Nikko, Tochigi Pref., 10. vii. 1994, S. Naomi leg.; 1♂, near Marunuma, Nikko, Tochigi Pref., 19. viii. 1991, Y. Shibata leg.; 5♀, same data as holotype; 2♂2♀, Mt. Ontake, Kiso, Nagano Pref., 25. vii. 1986, T. Ito leg.; 1♂1♀ (paratypes of *S. sawadaiellus*), Nigorigo Spa, Gifu Pref., 22. ix. 1972, R. Yosii leg. (Notice that two paratypes of *S. sawadaiellus* are *S. inbecillus.*)

Distribution. Japan (Honshu: Fukushima, Niigata, Gunma, Tochigi, Nagano and Gifu Prefs.).

Remarks. *S. inbecillus* is very characteristic in having the following points: first, the apicolateral corner of median lobe is weakly expanded laterally so that the broad lateral rim of posterior half of median lobe exists as a continuation from the apical sclerotized area; and second, the endophallic expulsion clasps are very small and combined mesially (Fig. 9E). Thus, *S. inbecillus* is clearly distinguishable from all other members of *S. asyura*-group by the two characters mentioned above. This new species seems to be a common species which is widely distributed in the mountainous areas of central Honshu.

Etymology. The specific epithet of this new species is derived from the Latin adjective "*inbecillus*" which means "weak" and "feeble"; and the endophallic expulsion clasps are feeble and small indeed.

Stenus nemoralis **Naomi sp. nov.**

(Fig. 10A-E)

Male. Brachypterous species; body 3.2-3.3 mm (fore body 1.6-1.7 mm) in length, elongate, moderately shining. Head and abdomen black; prothorax and elytra dark brown to black; antennae and legs reddish brown; labrum dark red to dark brown. Head with a pair of longitudinal depressions, punctures moderately dense to dense, round, umbilicate; pronotum with surface slightly uneven, punctures very dense, irregular, median longitudinal depression shallow, indistinct; elytra with surface slightly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, round to elliptical in anterior segments, very small, regular in posterior segments; 3rd segment with reduced paratergites; 4th to 6th segments without paratergites nor tergoventral sutures.

Eighth venter (Fig. 10A) posteromedially with a shallow emargination; 9th tergum (Fig. 10D) with ventral apophyses thin and short; 9th venter (Fig. 10B) with apicolateral projections pointed, posterior margin arcuate, finely, irregularly serrate; 10th tergum (Fig. 10D) rounded at posterior part. Aedeagus (Fig. 10C) with median lobe broad, bluntly angulate at apicolateral corners, broad-triangular in apical part, pointed at apex; apical sclerotized area very narrow, covered with fine pores, and arcuate at anterior margin. Endophallus with median longitudinal bands (Fig. 10C) moderately broad, short; explusion clasps (Fig. 10C, E) widely separated, anterior plate acutely pointed and incurved at apex, partially demarcated from posterior plate, posterior plate narrowed posteriorly, with a small denticle at anterolateral corner; basal tube (Fig. 10C) large, basal room composed of two straight shafts, basal constriction

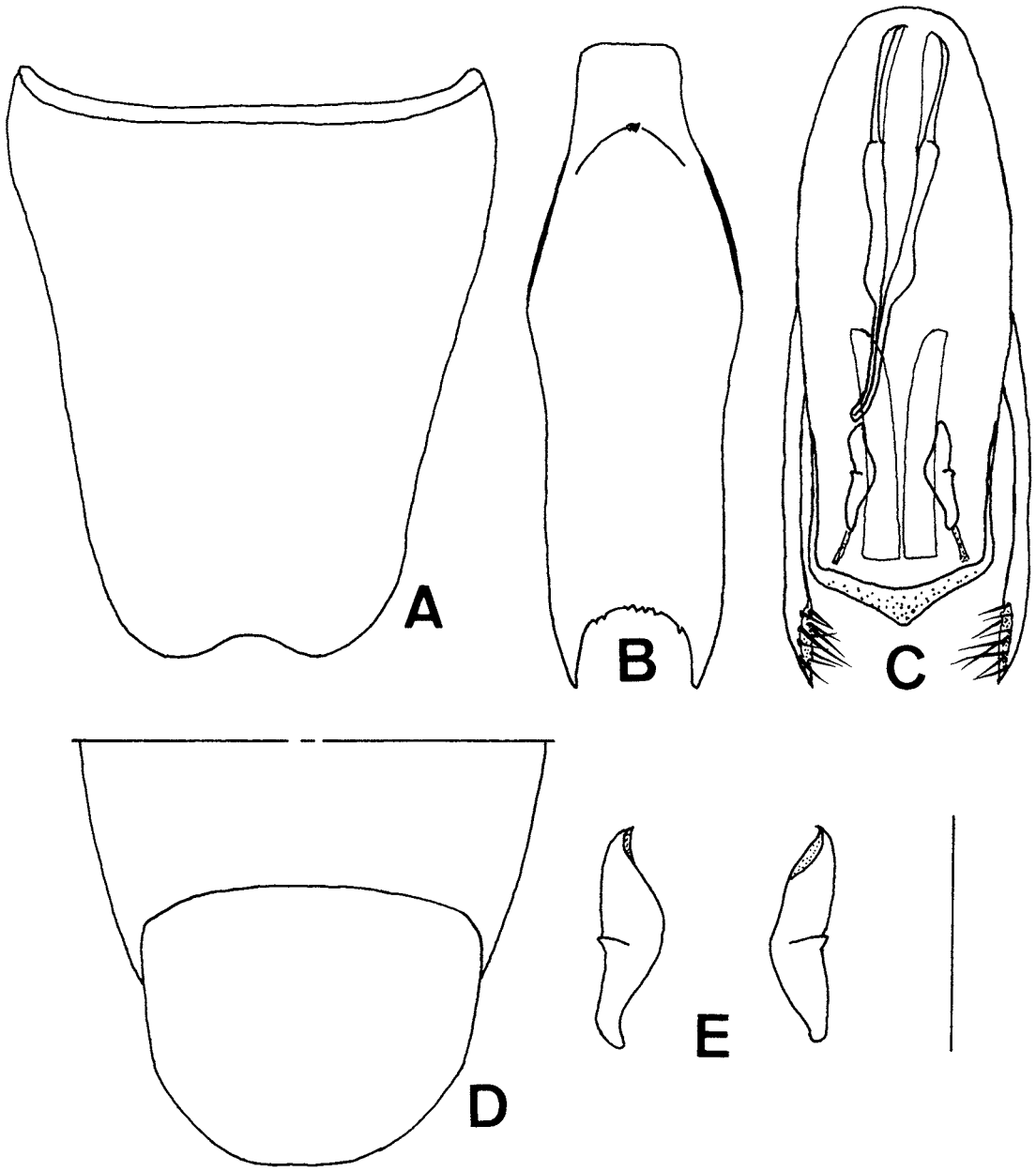

Fig. 10. *Stenus nemoralis* Naomi sp. nov. A, Eighth venter of male; B, 9th venter of male; C, aedeagus of ventral view; D, 9th and 10th terga of male; E, expulsion clasps. Scale: 0.2 mm for A-C and 0.1 mm for D, E.

indistinct, tube body thick in about basal 1/2, abruptly constricted to form the thin tube behind the constriction, weakly curved at apex. Parameres (Fig. 10C) simple, slender, acutely pointed; apical part of paramere short, hardly swollen, with 9 to 10 short setae on its marginal area.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157100): ♂, Kami-nikkawa Pass, Enzan, Koshu-shi, Yamanashi Pref., 16. x. 2010, T. Watanabe leg. Paratype: 1♂, Daibosatsu, Yamanashi Pref., 26. vi. 1991, T. Ito leg.; 1♂2♀, same locality, 17. v. 1964, Y. Watanabe leg;

2♂, same locality, 25 v. 1980, Y. Watanabe leg.

Distribution. Japan (Honshu: Yamanashi Pref.).

Remarks. *S. nemoralis* is allied to *S. fujimontis* Puthz, 2001, but this new species is easily distinguishable from the latter by the following points: the median lobe is broader (Fig. 11C); the apical part of median lobe is broad-triangular in shape and only bluntly pointed at apex, without any posteromedian process such as cusp nor denticle (Fig. 10C); the endophallic expulsion clasps are widely separated (Fig. 10E); the posterior plate of expulsion clasp is narrowed posteriorly and pointed (Fig. 10E); and the apical thin tube of basal tube body is longer (Fig. 10C).

Etymology. The specific epithet of this new species is derived from the Latin adjective "*nemoralis*" which means "woody" or "wooded"; this new species was collected in the wonderful woodlands at the foot of Mt. Daibosatsu, Yamanashi Pref.

Stenus incalcaratus **Naomi sp. nov.**

(Fig. 11A-G)

Stenus toshiharui Naomi, 1990b, Elytra, Tokyo, 18: 46. (Partim.)

Male and female. Brachypterous species; body 2.7-3.0 mm (fore body 1.5-1.6 mm) in length, elongate, moderately shining. Head dark reddish brown to black; prothorax, elytra and abdomen reddish brown; labrum reddish brown; antennae and legs yellowish brown to reddish brown. Head with a pair of shallow, broad longitudinal depressions, punctures round but those on central area distinctly sparser and smaller than on lateral areas; pronotum with surface slightly uneven, punctures very dense, subrugose, median longitudinal depression distinct, with its central area relatively deep; elytra with punctures very dense, round to elliptical; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct and elliptical in anterior segments, very small in posterior segments; 3rd to 6th segments without paratergites nor tergoventral sutures.

Male. Seventh venter posteromedially with a very shallow, elongate-elliptical depression which does not reach the posterior margin; 8th venter (Fig. 11B) posteromedially with a shallow emargination; 9th tergum with ventral apophyses short, thin; 9th venter (Fig. 11C) with apicolateral projections relatively long, acutely pointed, posterior margin minutely serrate; 10th tergum entire. Aedeagus (Fig. 11A) small; median lobe elongate, with apicolateral corners distinctly angulate, apicomedian part bluntly angulate, without any calcar (tooth). Endophallus with median longitudinal bands (Fig. 11F) long, slender, each narrowed near the middle, becoming gradually broader anteriorly before the middle, with a pointed apex; expulsion clasps (Fig. 11D) very small, connate by the posteromesial margin of posterior plate, anterior plate slightly incurved and acutely pointed at apex, demarcated from posterior plate by a transverse suture, posterior plate rounded posteriorly; basal tube (Fig. 11G) with basal room large, ovoidal, basal constriction distinct, tube body simple, elongate-rhombic in shape. Parameres (Fig. 11A) slender, straight, rounded at apex; apical part of paramere long, simple, hardly swollen, with 10 to 13 setae at its marginal area.

Female. Eighth venter gently angulate at posteromedian part; gonocoxites each with apicolateral tooth acutely pointed, posterior margin hardly serrate; 10th tergum gently rounded at posterior margin. Spermatheca (Fig. 11E) with capsule elongate-ovoidal, RT-duct short, moderately broad; spermathecal duct rather thin, strongly coiled many times, basal pouch robust, elongate-conical.

Type series. Holotype (CBM-ZI: 157101): ♂, Amagi-Pass, Yugashima, Shizuoka Pref., 12. xi. 2000, T. Watanabe leg. Paratypes: 2♂3♀ (paratypes of *S. toshiharui* Naomi), Amagi-Pass, Yugashima, Izu-Peninsula, 23. vii. 1982, S. Naomi leg.

Distribution. Japan (Honshu: Shizuoka Pref.).

Remarks. When Naomi (1990b) described *S. toshiharui* from Saga Pref., Kyushu, he mistook some specimens of *S. incalcaratus* for those of *S. toshiharui* because they are superficially similar in coloration and external structure of aedeagus. Under the present phylogenetic system of Japanese *Stenus* (Naomi and Puthz, 2013), *S. toshiharui* and *S. incalcaratus* belong to *S. cephalotes*-group and *S. asyura*-group, respectively (see Naomi, 2012 regarding the major characteristics of those species groups in *Stenus*). *S. incalcaratus* is closely allied to *S. inamatus* Puthz, 1993, but the former is clearly distinguishable from the latter by the following points: the 7th venter is hardly emarginate; the apical part of aedeagal median lobe is normally rimmed with sclerotized margin (Fig. 11A); the endophallic expulsion clasps are much smaller, with much shorter anterior plates (Fig. 11D); and the tube body of endophallic basal tube is broader and rhombic in shape (Fig. 11G).

Etymology. The specific epithet of this new species is derived from the Latin adjective "*incalcaratus*" which means "without calcar (tooth)"; the aedeagal median lobe is not provided with a calcar nor tooth at the apicomedian part (Fig. 11A).

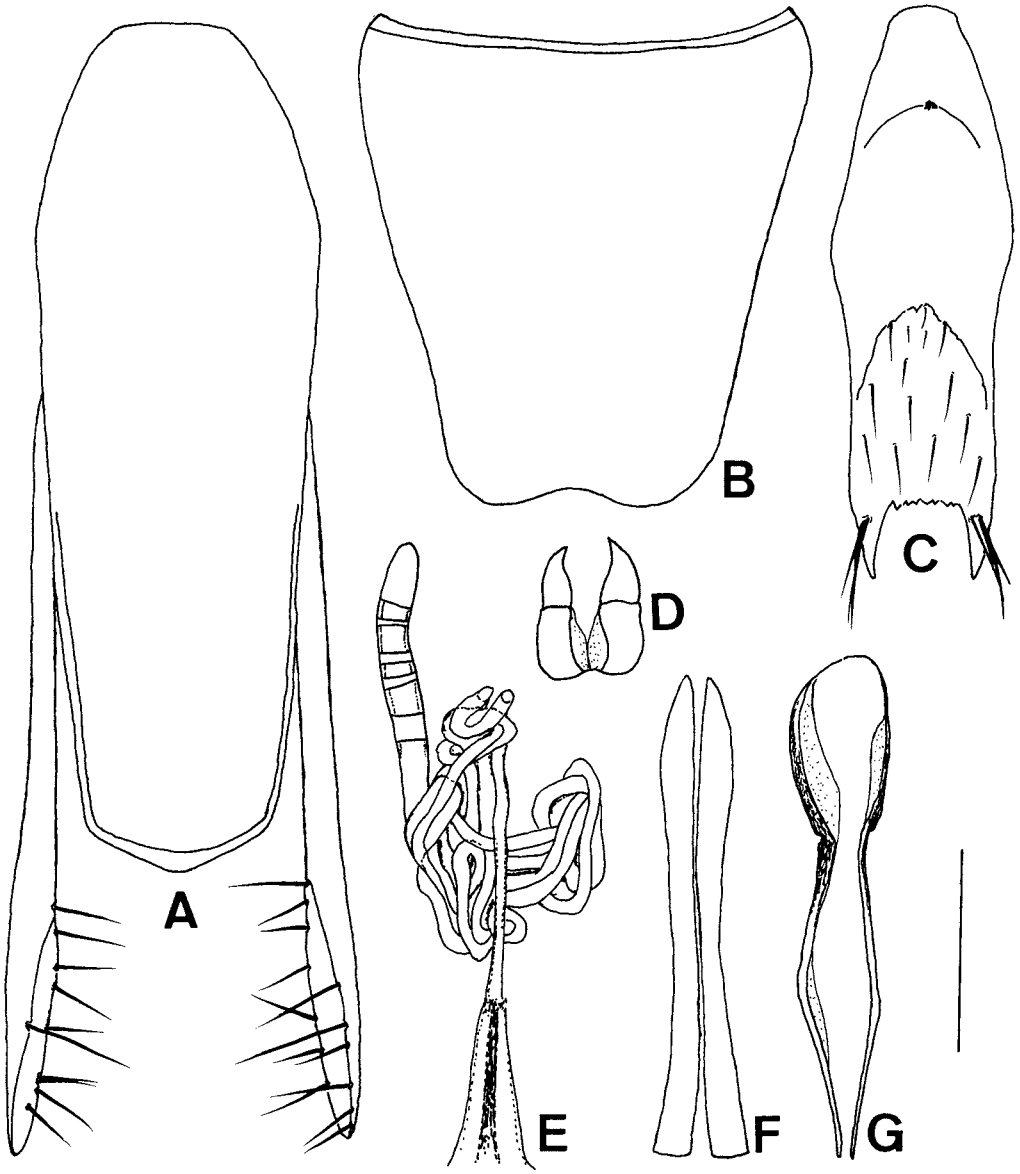

Fig. 11. *Stenus incalcaratus* Naomi sp. nov. A, External structure of aedeagus; B, 8th venter of male; C, 9th venter of male; D, expulsion clasps; E, spermatheca; F, median longitudinal bands; G, basal tube. Scale 1: 0.1 mm for A, D-G and 0.2 mm for B, C.

***Stenus clio* Naomi sp. nov.**
(Fig. 12A-F)

Male and female. Brachypterous species; body 3.5-3.8 mm (fore body 1.8-2.0 mm) in length, elongate, weakly shining. Head dark brown to black; prothorax and elytra reddish brown; abdomen dark reddish brown; labrum reddish brown; antennae and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures round, distinct, moderately dense to dense but sometimes sparse, relatively small; pronotum with surface slightly uneven, punctures very dense, rough, median longitudinal depression indistinct; elytra with

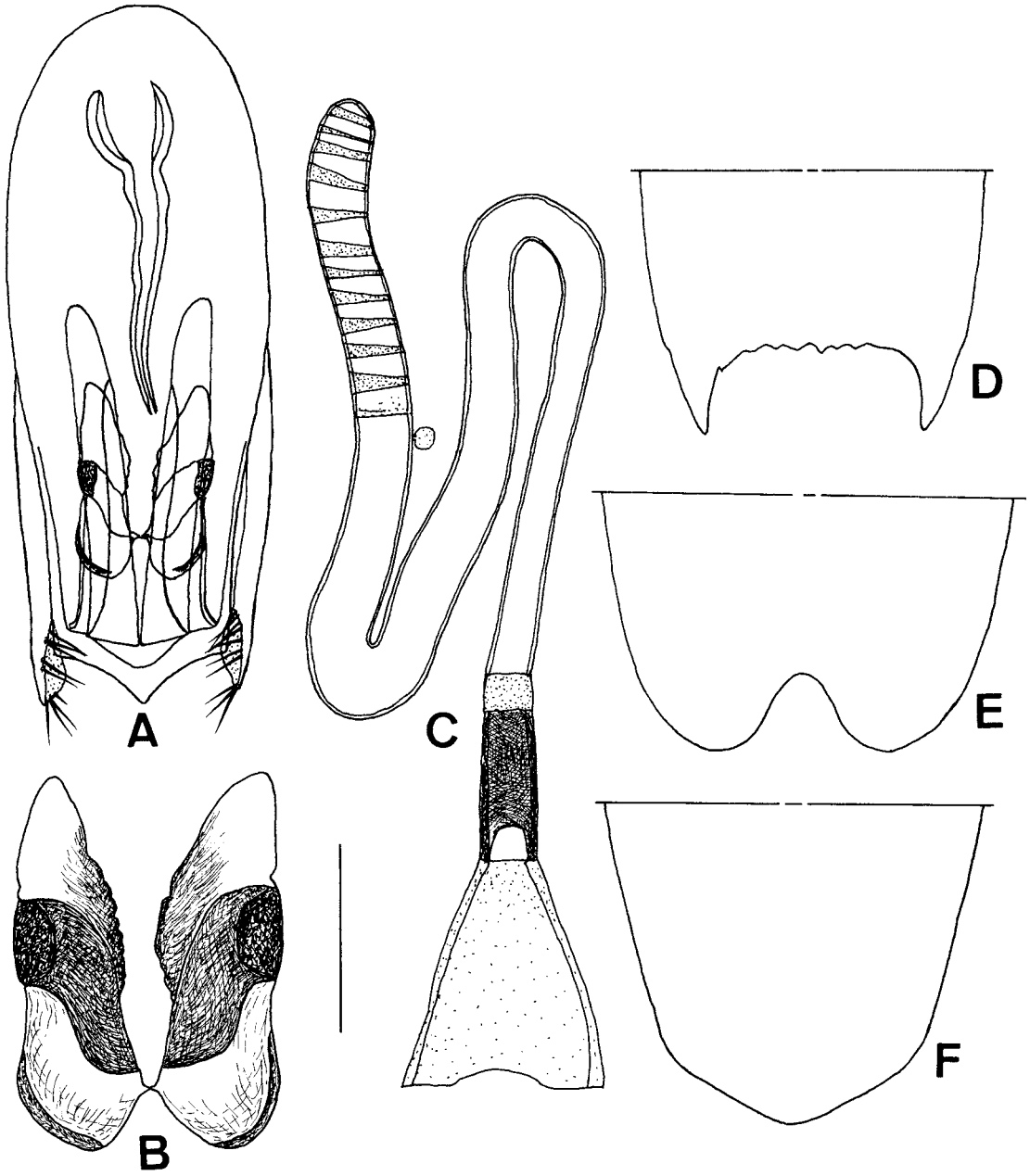

Fig. 12. *Stenus clio* Naomi sp. nov. A, Aedeagus of ventral view; B, expulsion clasps; C, spermatheca; D, apical part of 9th venter of male; E, posterior part of 8th venter of male; F, posterior part of 8th venter of female. Scale: 0.2 mm for A, E, F and 0.1 mm for B-D.

punctures very dense, round and large; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense to dense, distinct and round in anterior segments, very small in posterior segments; 3rd to 6th segments without paratergites nor tergoventral sutures.

Male. Sixth venter with or without semicircular flat area at posteromedian part; 7th venter posteromedially

with or without a very shallow, elongate-elliptical depression, the depressed area very shallowly emarginate at posterior margin; 8th venter (Fig. 12E) posteromedially with a deep and large emargination; 9th tergum with ventral apophyses relatively long, thin; 9th venter (Fig. 12D) with apicolateral projections pointed, posterior margin minutely serrate; 10th tergum entire. Aedeagus (Fig. 12A) with median lobe weakly bulbous in basal half, distinctly angulate at apicolateral corners; apical sclerotized area pointed apicomedially, with its apicolateral margin weakly arcuate. Endophallus with median longitudinal bands (Fig. 12A) long, broad, hardly narrowed anteriorly, each with a rounded apex; expulsion clasps (Fig. 12B) large, robust, combined by a point on the mesial margin of posterior plate, anterior plate roughly crenulate at mesial margin, demaracted from posterior plate by a curved suture, posterior plate strongly sclerotized at anterolateral part, rounded posteriorly, with a short, folded rim at posterolateral margin; basal tube (Fig. 12A) with basal room large, ovoidal, basal constriction distinct, tube body attenuate but slightly curved in about apical 1/3. Parameres (Fig. 12A) slender, straight, each pointed at apex; apical part of paramere short, hardly swollen, with 9 to 10 short setae at its marginal area.

Female. Eighth venter (Fig. 12F) gently angulate at posteromedian part; gonocoxites each with apicolateral tooth acutely pointed, posterior margin hardly serrate; 10th tergum gently rounded at posterior margin. Spermatheca (Fig. 12C) without capsule, RT-duct moderately long and broad; spermathecal duct short, with two turns, spermathecal gland very small, with its opening located just behind the RT-duct; basal valve submenbranous, much shorter than basal sclerotized duct; basal pouch elongate-conical, submembranous.

Type series. Holotype (CBM-ZI: 157102): ♂, Mt. Kamagadake, Komono-cho, Mie Pref., 27. viii. 1994, H. Yokozeki leg. Paratypes: 3♂1♀, same data as holotype.

Distribution. Japan (Honshu: Mie Pref.).

Remarks. *S. clio* is closely allied to *S. oisami* Naomi et Puthz, 1994 and *S. okamotoi* Naomi, 1989b because they share some important apomorphic characters (e.g., aedeagal median lobe with apical sclerotized area pointed apicomedially, with its apicolateral margin weakly arcuate; Fig. 12A), but it is clearly distinguishable from *S. oisami* and *S. okamotoi* by the following characters of endophallus: the median longitudinal bands are long and broad (Fig. 12A); the expulsion clasps are large, and combined by a point on the mesial margin of posterior plate, and the posterior plate is rounded posteriorly (Fig. 12B); and the basal tube body is attenuate but slightly curved in about apical 1/3 (Fig. 12A). Regarding the secondary sexual characters developed on the 6th and 7th venters of male abdomen, *S. clio* shows some infraspecific variations; some individuals have no secondary sexual characters on the 6th and 7th venters of male while the others have the secondary sexual characters there as described above.

Etymology. The specific epithet of this new species is derived from the name of the goddess of history "Clio" (as one of the Muse).

Stenus araiorum **Naomi sp. nov.**

(Fig. 13A-F)

Male. Brachypterous species; body 3.3-3.6 mm (fore body 1.6-1.8 mm) in length, elongate, weakly shining, with femora moderately thick. Body entirely bright reddish brown, with apical segments of antennae and lateral areas of vertex more or less infuscate. Head with a pair of shallow longitudinal depressions, punctures round, moderately dense to dense; pronotum with surface slightly uneven, punctures very dense, irregular, median longitudinal depression shallow, indistinct; elytra with surface slightly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct, round, small in anterior segments, very small, regular in posterior segments; 3rd to 6th segments without paratergites nor tergoventral sutures.

Seventh venter posteromedially with or without a semicircular flat area; 8th venter (Fig. 13F) posteromedially with an arcuate, moderately deep emargination; 9th tergum (Fig. 13B) with ventral apophyses long; 9th venter (Fig. 13D) with apicolateral projections pointed, posterior margin weakly serrate; 10th tergum (Fig. 13B) rounded at posterior part. Aedeagus (Fig. 13C) stout, large; median lobe (Fig. 13C) angulate at apicolateral corners; apical sclerotized area gently arcuate at anterior margin, tricuspidate with apicomedian cusp and paired small, blunt subcusps. Endophallus with median longitudinal bands (Fig. 13C) broad, each narrowed apically, pointed, lateral longitudinal bands very thin, straight; expulsion clasps (Fig. 13E) separated, boot-shaped, anterior plate completely fused with posterior plate; basal tube (Fig. 13A) large, stout, basal room ovoidal, basal constriction distinct, tube body spiral, spiralling three times, with a submembranous flap at the right side behind the middle of tube body. Parameres (Fig. 13C) slender,

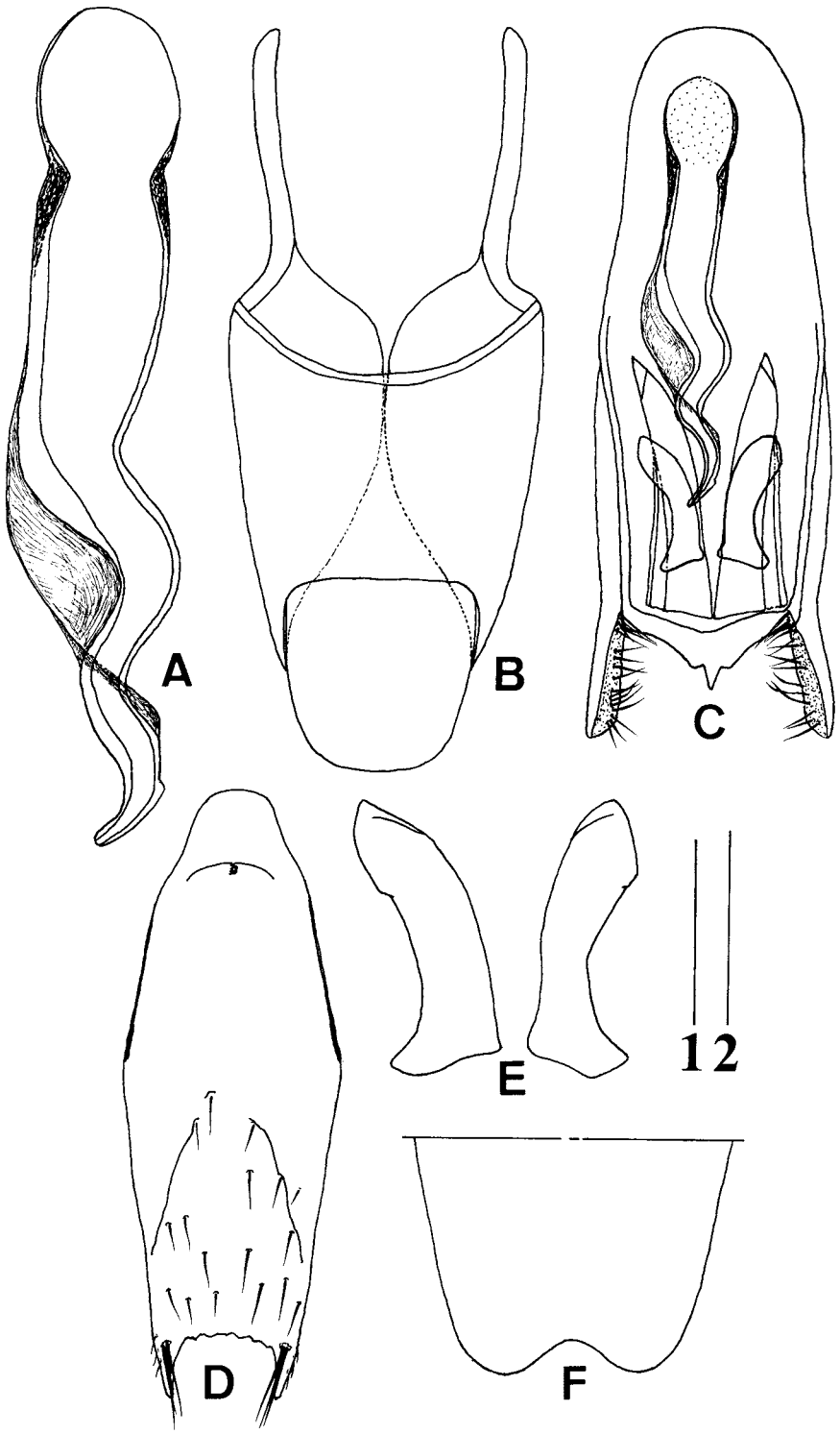

Fig. 13. *Stenus araiorum* Naomi sp. nov. A, Basal tube; B, 9th and 10th terga of male; C, aedeagus of ventral view; D, 9th venter of male; E, expulsion clasps; F. posterior part of 8th venter of male. Scale 1: 0.1 mm for A, E and 0.2 mm for B-D; scale 2: 0.3 mm for F.

each weakly turned laterally at apical part; apical part of paramere provided mesially with submembranous area, on which 15 to 17 setae are found, several setae on the median area decumbent.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157103): ♂, Kitamuki-Jozo, Moroyama, Saitama Pref., 11. x. 1998, S. Arai leg. Paratypes: 3♂, same data as holotype.

Distribution. Japan (Honshu: Saitama Pref.).

Remarks. *S. araiorum* is allied to *S. bicara* Naomi, 1988a, but the median lobe of aedeagus is tricuspidate (Fig. 13C); it is also allied to *S. mayuramai* Naomi, 2004b and *S. jurojin* Naomi, 2004b (which have also the median lobe with tricuspidate apex), but the endophallic expulsion clasp is boot-shaped (Fig. 13E). Furthermore, *S. araiorum* is clearly distinguishable from those three species by the spiral tube body of endophallic basal tube (Fig. 13A).

Etymology. This new species is named in honor of Mr. Koji Arai and Mrs. Shiho Arai of Saitama who contribute to the clarification of staphylinid fauna of Japan.

Stenus santira **Naomi**

Stenus santira Naomi, 1988a, Elytra, Tokyo, 16: 78.
Stenus tengu Hromádka, 1990a, Elytra, Tokyo, 18: 57. (New synonym.)

Specimens examined. 1♂3♀, Futakuchi Valley, Miyagi Pref., 12. vii. 1985, S. Nomura leg.; 2♂, Mt. Zao, Miyagi Pref., 25. vi. 1983, S. Nomura leg.; 1♂ (paratype), Mt. Chokai, Yamagata Pref., 5. vii. 1985, S. Nomura leg.; 1♂1♀, same data as holotype; 1♂2♀, Nakatsugawa, Mt. Azuma, Fukushima Pref., 19. viii. 1996, S. Naomi leg.; 3♂, Makugawa Spa, Fukushima Pref., 19. vii. 1985, S. Nomura leg.; 2♂1♀, Arakawa, Sanpoku-cho, Niigata Pref., 5. vii. 1985, S. Nomura leg.; 1♂, Taina, Niigata Pref., 3. vii. 1985, S. Nomura leg.

Distribution. Japan: Honshu (Miyagi, Yamagata, Fukushima, Niigata and Toyama Prefs).

Remarks. *S. santira* was described by Naomi (1988a) based on a series of the specimens collected from Mt. Zao, Miyagi Pref. and Mt. Chokai, Yamagata Pref., while *S. tengu* was described by Hromádka (1990a) based on one male from Bijodaira, Toyama Pref. After a careful examination of the aedeagus and endophallus of these species, I noticed that there are considerable variations on the structure of endophallic basal tube which I suppose is the key character for classifying these two *Stenus* species. In the northern populations (e.g., of Miyagi and Yamagata Prefs.) to which the type-individuals of *S. santira* belong, the basal tube is in general thick, short and almost straight or very weakly sinuous), while in the western populations (e.g., of Toyama) to which the type-individual of *S. tengu* belongs, the basal tube is thin, long and moderately curved (or sinuous). The holotype of *S. santira* shows the typical condition of basal tube that individuals of northern populations have, while the holotype of *S. tengu* shows the typical condition of basal tube that individuals of western populations have.

Thus if one compares only the holotype of *S. santira* with that of *S. tengu*, one may judge that they are different species. However, in the populations located between the northern and western populations (e.g., of Niigata and Fukushima Prefs.), various intermediate conditions exist regarding the structure (e.g., length, breadth, shape) of basal tube. We cannot classify these local populations into two independent lineages, using characters that we obtain from the aedeagus (e.g., basal tube) and related structures. Given this, these variations should be considered to be infraspecific, showing that these two species are conspecific. Thus, *S. tengu* Hromádka, 1990a, is here newly placed in synonymy with *S. santira* Naomi, 1988a.

Stenus ellipsoides **Naomi sp. nov.**

(Fig. 14A-H)

Male and female. Brachypterous species; body 3.5-3.7 mm (fore body 1.7-1.8 mm) in length, elongate, weakly shining, with femora moderately thick. Body entirely yellowish brown to reddish brown, with apical segments of antennae and lateral areas of vertex more or less infuscate. Head with a pair of longitudinal depressions, punctures round to elliptical, distinct, moderately dense to dense; pronotum with surface slightly uneven, punctures very dense, irregular, median longitudinal depression shallow, indistinct; elytra with surface slightly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures moderately dense, distinct, round to elliptical, small to moderate in size in anterior segments, very small, regular in posterior segments; 3rd segment with reduced paratergites, without tergoventral sutures; 4th to 6th segments without paratergites nor tergoventral sutures.

Male. Sixth venter (Fig. 14C) posteromedially with a semicircular flat area; 7th venter (Fig. 14C) medially with a very large, shallow and elongate depression, the depressed area weakly, arcuately emarginate; 8th venter (Fig. 14D) posteromedially with a large, broad

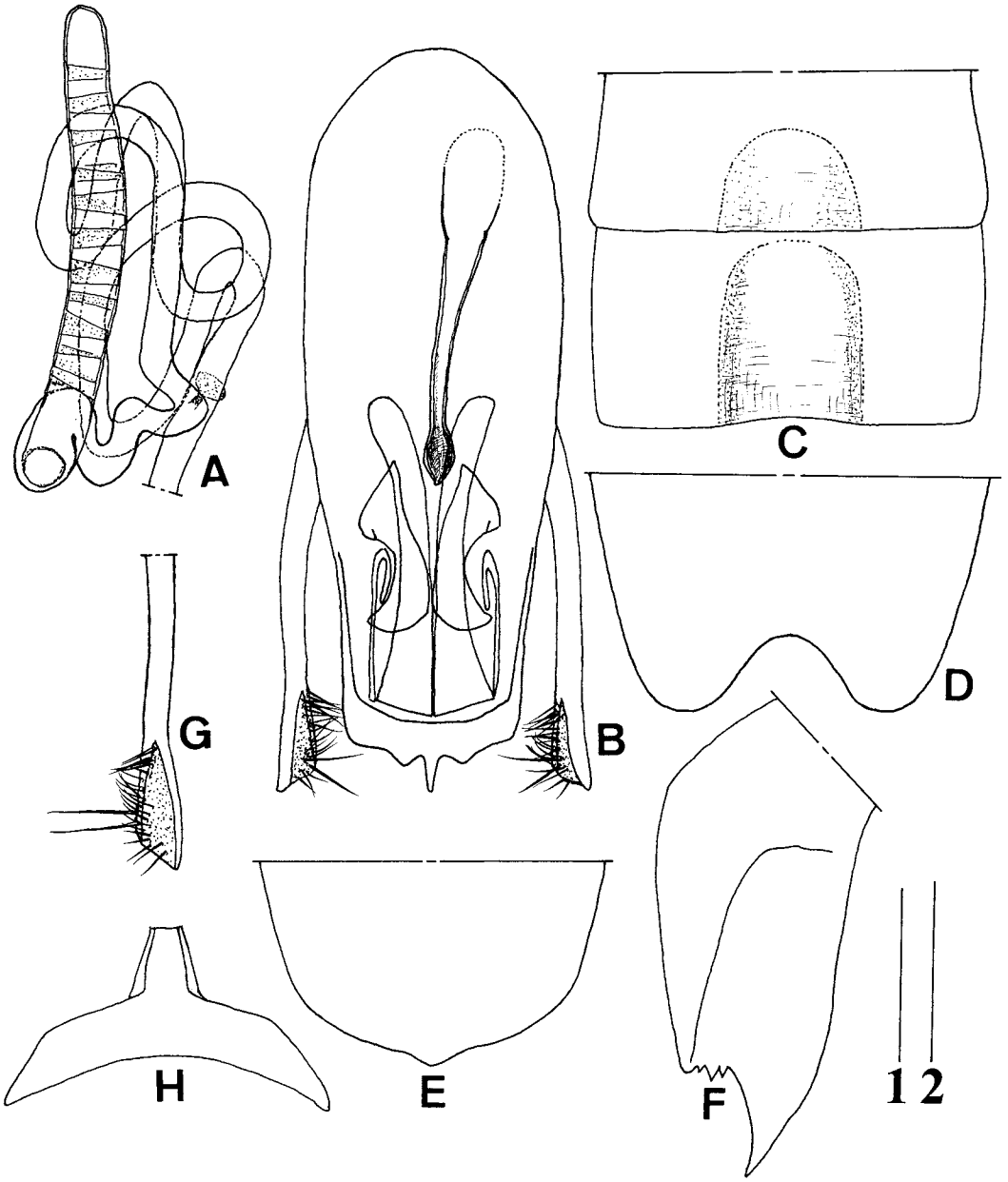

Fig. 14. *Stenus ellipsoides* Naomi sp. nov. (Asahi). A, Anterior part of sprmatheca; B, aedeagus of ventral view; C, 6th and 7th venters of male; D, posterior part of 8th venter of male; E, posterior part of 8th venter of female; F, gonocoxite of female; G, posterior part of paramere; H, basal pouch of spermatheca. Scale 1: 0.1 mm for A, H and 0.2 mm for B, D-G; scale 2: 0.3 mm for C.

emargination; 9th tergum with ventral apophyses thick; 9th venter with apicolateral projections short, acutely pointed, posterior margin minutely but distinctly serrate; 10th tergum entire. Aedeagus (Fig. 14B) large; median lobe weakly bulbous in basal half, obtusely angulate at apicolateral corners; apical sclerotized area arcuate at anterior margin, tricuspidate with a thin apicomedian cusp and paired short, broad

subcusps (Fig. 14B). Endophallus with median longitudinal bands (Fig. 14B) broad, moderately long, each narrowed in the middle, rounded at apex, lateral longitudinal bands very thin, infolded at anterior part; expulsion clasps (Fig. 14B) large, each almost C-shaped, pointed at anterior tip, anterior plate completely fused with posterior plate; basal tube (Fig. 14B) simple, basal room elongate-ovoidal, with basal constriction, tube body substraight, ellipsoidal at apex. Parameres (Fig. 14B, G) short, relatively thick, extending posteriorly to the apex of median lobe, each very weakly turned laterally at apical part; apical part of paramere short, provided mesially with a subtransparent, submembranous area, the most mesial side of which is again sclerotized to form a rod-like plate, thus the submembranous area is separated into two (i.e., dorsal and ventral) portions so that the apical part of paramere looks almost V-shaped (when seen from ventral side), mesially with more than 20 setae of various lengths, two setae very long and several other setae on the median area decumbent.

Female. Eighth venter (Fig. 14E) weakly pointed at posteromedian part; gonocoxites (Fig. 14F) each with apicolateral tooth large, acutely pointed, posterior margin with 3 to 4 small dents. Spermatheca (Fig. 14A) with capsule rounded apically, RT-duct moderately thick, almost straight; spermathecal duct very loosely coiled, moderately thick, basal pouch (Fig. 14H) large, sclerotized.

Type series. Holotype (CBM-ZI: 157104): ♂, Futamata, Mt. Asahi, Yamagata Pref., 21. viii. 1996, S. Naomi leg. Paratypes, 3♂1♀, same data as holotype; 1♂, Hosono, Urabandai, Fukushima Pref., 9. vii. 1985, S. Nomura leg.

Distribution. Japan (Honshu: Yamagata and Fukushima Prefs.).

Remarks. *S. ellipsoides* is closely allied to *S. santira* Naomi, but it is clearly distinguishable from the latter by the following characters: the parameres are shorter, they only extend posteriorly to the apex of median lobe (Fig. 14B), the endophallic basal tube is much shorter (Fig. 14B), and the apex of basal tube is ellipsoidal (Fig. 14B).

Etymology. The specific epithet of this new species is derived from the Latin adjective "*ellipsoides*" which means "ellipsoidal" or "somewhat elliptic"; and the apex of endophallic basal tube is in fact ellipsoidal.

Stenus hakonensis **Naomi stat. nov.**

Stenus asyura hakonensis Naomi, 2004a, Nat. Hist. Res., Chiba, 8: 29.

Specimens examined. 3♂1♀(paratypes), Sengokubara, Hakone, Kanagawa Pref., 25. x. 1985, S. Nomura leg.; 2♂1♀, Hiryu fall, Hakone, Kanagawa Pref., 25. iv. 1997, S. Naomi leg.; 2♂3♀, Jogao Pass, Yamakita-cho, Kanagawa Pref., 16. xi. 1996, S. Nomura leg.; 1♂3♀, Mt. Daigatake, Hakone, Kanagawa Pref., 3. iii. 2001, H. Mizushima leg.; 2♂4♀, Shiraito, Shizuoka Pref., 28. vi. 1991, T. Ito leg.; 1♂, Nishi-usuzuka, Fujinomiya, Shizuoka Pref., 7. x. 2007, T. Watanabe leg.; 2♂2♀, Taro-bou, Mt. Fuji, Gotenba, Shizuoka Pref., 10. x. 1991, S. Nomura leg.

Distribution. (Honshu: Kanagawa and Shizuoka Prefs.).

Remarks. Based on the specimens collected from Hakone, Kanagawa Pref., *S. asyura* hakonensis was described by Naomi (2004a) as a subspecies of *S. asyura* Naomi (1988a). After the original description it has been recorded from various localities in Shizuoka and Kanagawa Prefs. It is clearly distinguishable from its nominotypical subspecies by the structure of endophallic expulsion clasps: The clasp is distinctly broader, narrowed anteriorly and rounded at posterior margin in the former, while it is narrower, broadened anteriorly and pointed posteriorly in the latter. Given the morphological differences, the subspecies *S. asyura* hakonensis is upgraded to a distinct species, *Stenus hakonensis* Naomi stat. nov.

Stenus alesi **Naomi sp. nov.**

(Fig. 15A-F)

Male and female. Brachypterous species; body 2.9-3.0 mm (fore body 1.5-1.6 mm) in length, elongate, weakly shining, with antennae moderately long, femora moderately thick. Head black; prothorax, elytra and abdomen reddish brown; antennae and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures round and distinct in usual but the punctures on the sides of vertex denser and larger than on its central area; pronotum with surface slightly uneven, punctures very dense, irregular, median longitudinal depression indistinct; elytra with surface almost even, punctures very dense, distinct, round to elliptical; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, round to elliptical in anterior segments, very small, regular in posterior segments; 3rd to 6th segments without paratergites nor tergoventral sutures.

Male. Seventh venter posteromedially with a flat area; 8th venter (Fig. 15F) posteromedially with a large emargination; 9th tergum with ventral apophyses thick; 9th venter (Fig. 15C) with apicolateral

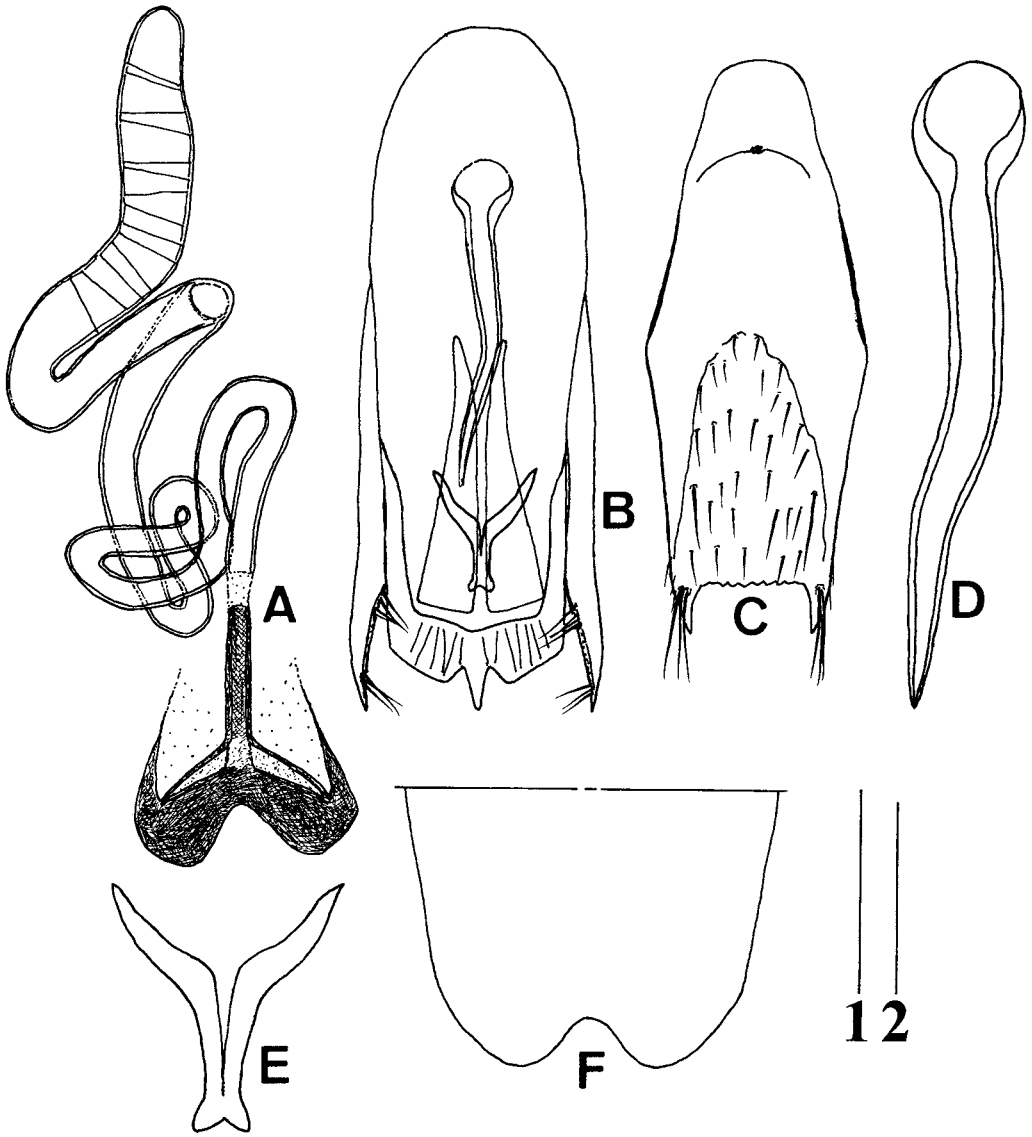

Fig. 15. *Stenus alesi* Naomi sp. nov. A, Spermatheca; B, aedeagus of ventral view; C, 9th venter of male; D, basal tube; E, expulsion clasps; F, posterior part of 8th venter of male. Scale 1: 0.1 mm for A, D, E and 0.2 mm for B, C; scale 2: 0.2 mm for F.

projections short, acutely pointed, posterior margin minutely serrate; 10th tergum entire. Aedeagus (Fig. 15B) with median lobe weakly bulbous in basal half, obtusely angulate at apicolateral corners; apical sclerotized area well-developed, tricuspidate, with anteromedian margin shallowly arcuate. Endophallus with median longitudinal bands (Fig. 14B) each rather broad at posterior end, strongly narrowed anteriorly, pointed at apex; expulsion clasps (Fig. 15B, E) connate at the posterior end to form a Y-shaped structure, anterior plate completely fused with posterior plate; basal tube (Fig. 15B, D) simple, basal room ovoidal, with distinct basal constriction, tube body attenuate but a little curved. Parameres (Fig. 15B) short, each acutely pointed at apex; apical part of paramere relatively long, with two small bundles of setae (each bundle comprising 3 to 4 setae of moderate length), the basal bundle located on the mesial side just behind

the apical broadened area of paramere, the apical bundle located on the mesial side near the apicalmost part of paramere.

Female. Eighth venter obtusely angulated at posteromedian part; gonocoxites each with apicolateral tooth pointed. Spermatheca (Fig. 15A) with capsule small, rounded apically, RT-duct thick, curved; spermathecal duct loosely coiled, distinctly thinner than RT-duct, basal valve short, basal duct sclerotized, thin, basal pouch (Fig. 15A) sclerotized, with marginal area turned anteriorly.

Type series. Holotype (CBM-ZI: 157105): ♂, Hirano, Shizuoka C, Shizuoka Pref., 11. xi. 2007, Y. Hirano leg. Paratypes, 1♀, same locality, 11. xi. 2007, Y. Hirano leg.; 1♀, same locality, 11. xi. 2007, T. Shimada leg.

Distribution. Japan (Honshu: Shizuoka Pref.).

Remarks. *S. alesi* is closely allied to *S. daikoku* Naomi (2004a) in that they share two important apomorphic conditions (i.e., expulsion clasps connate at the posterior end to form a Y-shaped structure; Fig. 15E; and apical part of paramere with two small bundles of setae; Fig. 15B), but this new species is clearly distinguishable from the latter by the following points: the apicomedian part of aedeagal median lobe is normal (i.e., without such modification as depression of the apicomedian part of median lobe to the dorsal direction when seen ventrally); and the endophallic basal tube body is attenuate (Fig. 15D) (while it is strongly constricted at the middle in *S. daikoku*). *S. alesi* is also allied to *S. asyura* Naomi and *S. hakonensis* Naomi, but it is easily distinguishable from the latters by the following points: the body is darker in coloration; the aedeagal paramere is provided with two small bundles of setae (Fig. 15B); and the endophallic expulsion clasps are connate at the posterior end to form a Y-shaped structure, (Fig. 15E).

Etymology. The specific epithet of this new species is named in honor of a distinguished staphylinist, Dr. Ales Smetana who contributes to the clarification of staphylinine and other groups of the world.

Stenus praeclarus **Naomi sp. nov.**
(Fig. 16A-F)

Male. Brachypterous species; body 3.8 mm (fore body 1.9 mm) in length, elongate, moderately shining. Body entirely black; antennae and legs reddish brown; labrum dark brown. Head with a pair of longitudinal depressions, punctures round, distinct and irregular, punctures on the central area of vertex sparser than those on its lateral areas; pronotum with surface slightly uneven, punctures very dense, irregular, median longitudinal depression indistinct; elytra with surface slightly uneven, punctures very dense, round; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense, distinct, round in anterior segments, very small to small, regular in posterior segments; 3rd segment with reduced paratergites; 4th to 6th segments with tergoventral sutures.

Seventh venter (Fig. 16E) posteromedially with a semicircular flat area; 8th venter (Fig. 16E) posteromedially with a triangular emargination; 9th tergum as in Fig. 16F; 9th venter (Fig. 16B) with apicolateral projections acutely pointed, posterior margin serrate; 10th tergum (Fig. 16F) rounded at posterior part. Aedeagus (Fig. 16A) with median lobe weakly bulbous in basal half, rounded at apicolateral corners; apical sclerotized area (Fig. 16A) separated right and left into two pallet-like plates, but the plates broadly connate by submembrane (Fig. 16C), each pointed at apex. Endophallus with median longitudinal bands (Fig. 16A) long, narrow; expulsion clasps (Fig. 16D) separated but combined only by a thin string at a point on the mesial side of posterior plate, anterior plate well pigmented laterally, rounded at apex, demarcated from posterior plate by oblique suture, posterior plate minutely pointed at posteromesial corner; basal tube (Fig. 16A) simple, symmetrical, basal room small, ovoidal, with basal constriction, tube body weakly swollen at base, straight and attenuate toward apex. Parameres (Fig. 16A) slender, acutely pointed; apical part of paramere short, hardly swollen, with 8 to 9 short setae on its marginal area.

Female. Unknown.

Type series. Holotype (CBM-ZI: 157106): ♂, Mt. Tsurugi (Nishijima-Ichinomori), Tokushima Pref., 25. Vii. 2004, O. Yamaji leg.

Distribution. Japan (Shikoku: Tokushima Pref.).

Remarks. *S. praeclarus* belongs to the *S. hannia*-subgroup of *S. asyura*-group; and it is characteristic in having the following primitive conditions: body unicolorous (black); abdomen with tergoventral sutures in 4th to 6th segments; secondary sexual modifications on male abdomen less-developed; aedeagal parameres simple; and endophallic basal tube simple and symmetrical. Thus, this new species seems to be the most primitive member in the *S. hannia*-subgroup. It is difficult to know which species is phylogenetically related to *S. praeclarus* because the morphological gap between *S. praeclarus* and other members of *S. hannia*-subgroup is large. However, *S. praeclarus* is easily distinguishable from other members of the subgroup by the following points: the

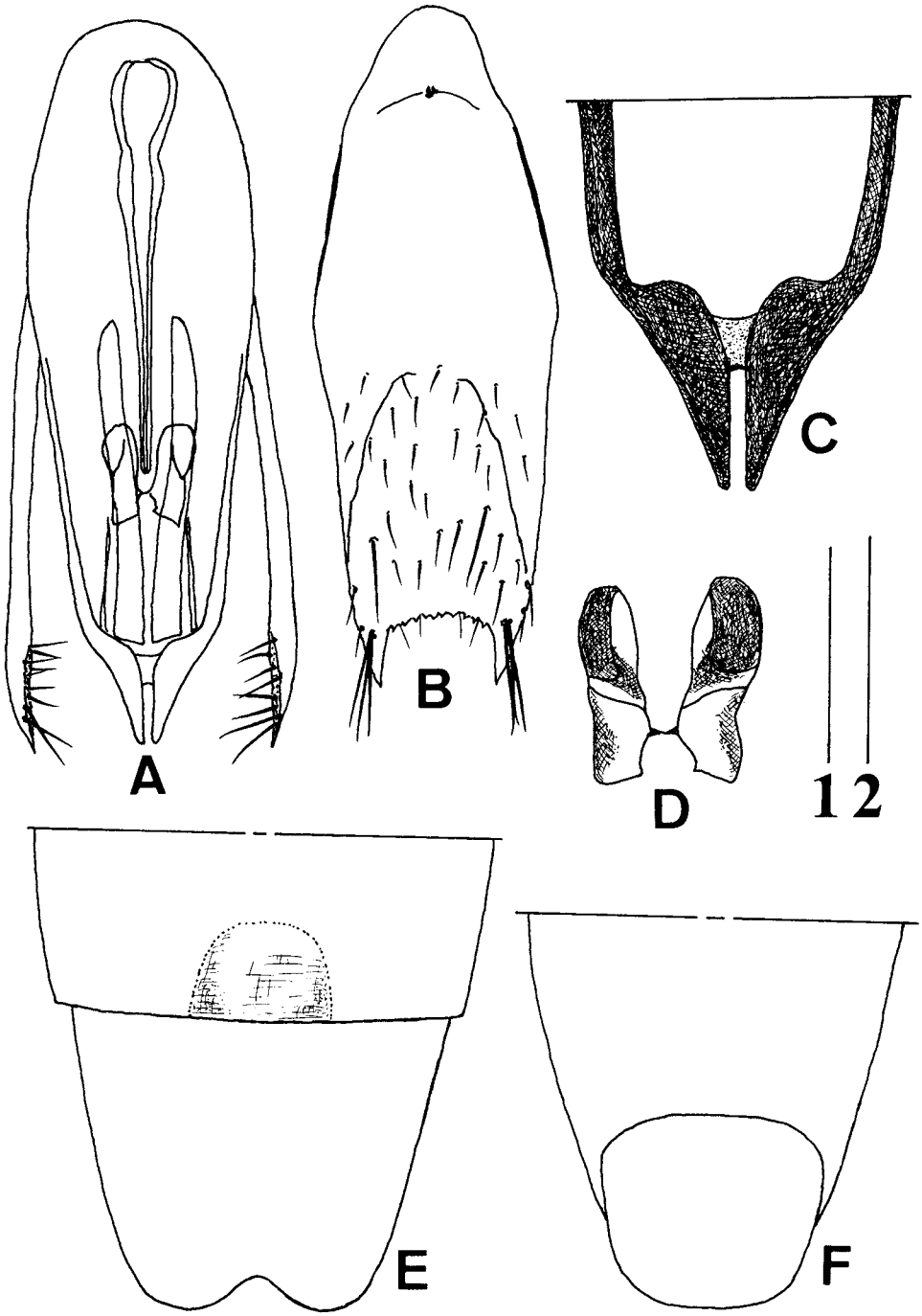

Fig. 16. *Stenus praeclarus* Naomi sp. nov. A, Aedeagus of ventral view; B, 9th venter of male; C, apical part of aedeagus of ventral view; D, expulsion clasps; E, 7th and 8th venters of male; F, 9th and 10th terga of male. Scale 1: 0.2 mm for A, B, F and 0.1 mm for C, D; scale 2: 0.3 mm for E.

body is entirely black; the apical sclerotized area of median lobe is separated right and left into two pallet-like plates (Fig. 16A), but the plates are broadly connate by submembrane (Fig. 16C); the endophallic expulsion clasps are separated, but combined by a thin string (Fig. 16D); and the basal tube is slender and symmetrical (Fig. 16A).

Etymology. The specific epithet of this new species is derived from the Latin adjective "*praeclarus*" which means "distinguished" or "easily distinguishable"; this new species is indeed easily distinguishable from other members of *S. hannia*-subgroup by the diagnostic characters described above.

***Stenus bunraku* Hromádka stat. nov.**
(Fig. 17A-G)

Stenus bunraku Hromádka, 1990b, Reichenbachia, 27: 128.

Male and female. Brachypterous species; body 4.0-4.5 mm (fore body 2.0-2.3 mm) in length, elongate, weakly shining. Head black; prothorax and elytra reddish brown; abdomen dark reddish brown; antennae, labrum and legs yellowish brown to reddish brown. Head with a pair of longitudinal depressions, punctures dense, round, distinct; pronotum with surface uneven, punctures very dense, rather rough, median longitudinal depression moderately deep but indistinct in outline; elytra with surface uneven, punctures very dense, rough; tarsi with 4th tarsomeres bilobed; abdomen with punctures dense to very dense, distinct, round to elliptical in anterior segments, very small, regular in posterior segments; 3rd segment with very narrow paratergites and tergoventral sutures; 4th to 6th segments with tergoventral sutures.

Male. Fourth venter posteromedially with a semicircular flat area, its posterior margin straight; 5th venter (Fig. 17A) posteromedially with a semicircular, very shallow depression, the depressed area very shallowly emarginate; 6th and 7th venters (Fig. 17A) modified as in 5th, but the depression in 6th a little deeper than that in 5th, the depression in 7th a little narrower, longer and deeper than that in 6th, the emargination in 7th a little deeper than that in 5th; 8th venter (Fig. 17A) posteromedially with a relatively deep, V-shaped emargination; 9th tergum with ventral apophyses thin and moderately long; 9th venter (Fig. 17B) strongly narrowed posteriorly, with apicolateral projections very short, pointed, posterior margin narrow, serrate; 10th tergum rounded at posterior part. Aedeagus (Fig. 17C) robust; median lobe with apicolateral rims turned posterolaterally to form short processes, and shortly extending anteromesially but not combined with each other. Endophallus with median longitudinal bands (Fig. 17G) very broad but short in the folded condition; expulsion clasps (Fig. 17G) paired but atrophied into very small, ovoidal plates; basal tube (Fig. 17F) large, robust, basal room thick, with very indistinct basal constriction, tube body very thick, curved with large gonopore. Parameres (Fig. 17C) short, slender, pointed; apical part of paramere short, hardly swollen, with 8 setae of various length on its marginal area.

Female. Eighth venter gently rounded at posterior margin; gonocoxites (Fig. 17D) each with apicolateral tooth moderately long, acutely pointed, posterior margin with 1 to 2 small dents; 10th tergum rounded at posterior margin. Spermatheca (Fig. 17E) without capsule, RT-duct thick; spermathecal duct very short with two turns, moderately thick but thick before the 2nd turn, rather membranous behind the 1st turn so that the basal valve cannot be recognized in the specimen examined.

Specimen examined. 1♂1♀, Mt. Takenoko, Yuzawa-cho, Niigata Pref., 30. vi. 1996, K. Haga leg.

Distribution. Japan (Honshu: Gunma and Niigata Prefs.).

Remarks. *S. bunraku* was described by Hromádka (1990b) based on two male specimens collected from Gunma Pref. (nr Mt. Shirane), central Japan. After that, Puthz (1993) synonymized *S. bunraku* with *S. zdenae* Hromádka, 1990b, which was collected also from Gunma Pref. (Mt. Kurofu). However, *S. bunraku* is clearly separable from *S. zdenae* by the secondary sexual modification of male abdomen (developed as in Fig. 17A) and the external structure of aedeagus (apicolateral rims of median lobe turned posterolaterally to form short processes, and also shortly extending anteromesially but not combined with each other; Fig. 17C). Given the morphological differences between them, *S. bunraku* is here resurrected as a distinct species (*S. bunraku* Hromádka, 1990b stat. nov.).

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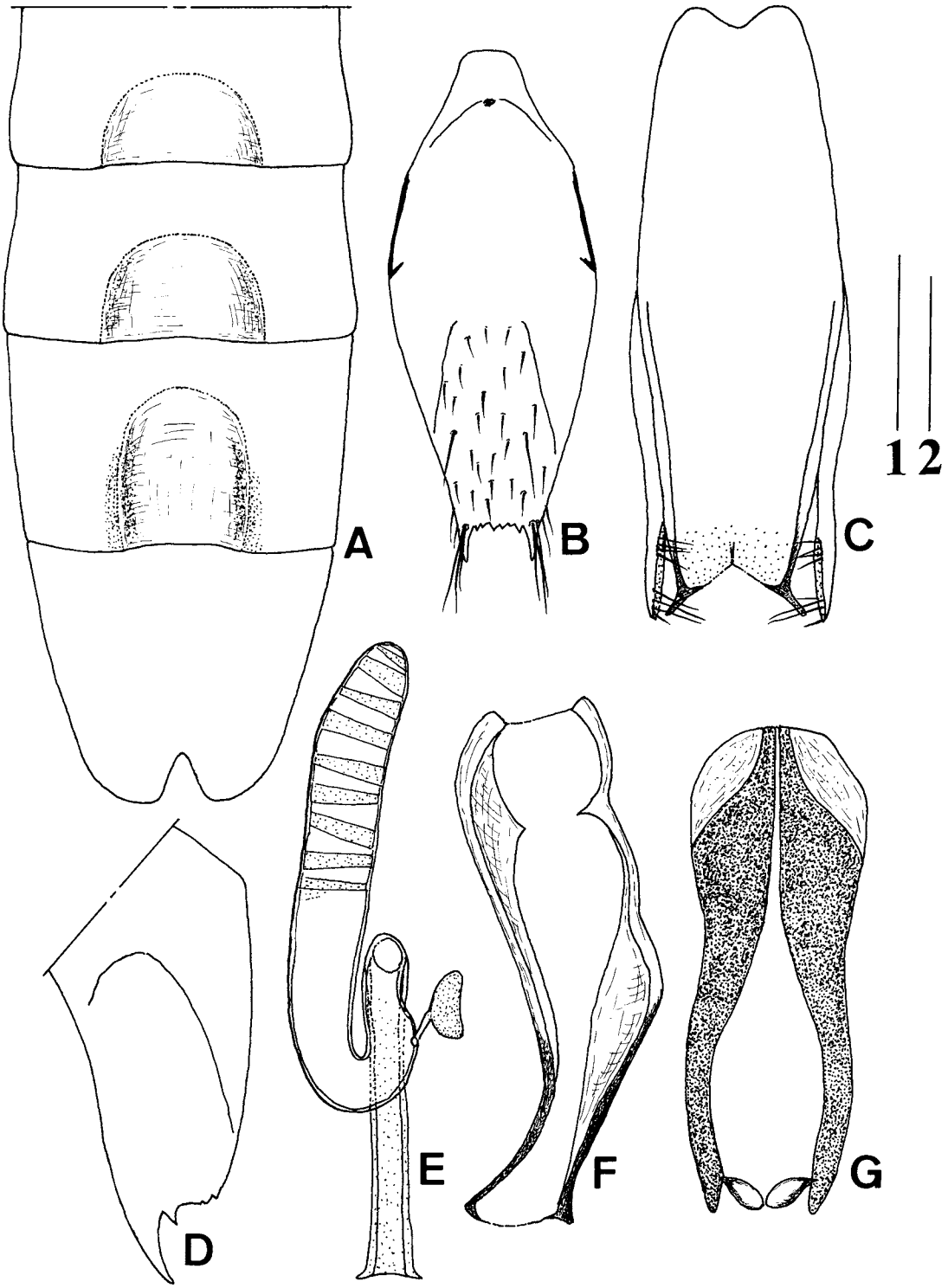

Fig. 17. *Stenus bunraku* Hromádka. A, Fifth to 8th venters of male; B, 9th venter of male; C, external structure of aedeagus; D, gonocoxite of female; E, spermatheca; F, basal tube; G, median longitudinal bands and expulsion clasps. Scale 1: 0.2 mm for B, C and 0.1 mm for D-G; scale 2: 0.3 mm for A.

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日本産メダカハネカクシ亜科（甲虫目，ハネカクシ科）の分類学的研究：14新種の記載，2既知種の再記載および分類学地位の変更

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本論文は，日本産メダカハネカクシ亜科についての第47番目の分類学的研究であり，メダカハネカクシ属の14新種を記載し，2既知種を再記載し，6種の分類学地位を変更した．記載した新種は以下の通りである：*Stenus gracilior* sp. nov.（神奈川県）; *S. anfractus* sp. nov.（三重県）; *S. komonoensis* sp. nov.（三重県）; *S. tumifactus* sp. nov.（滋賀県）; *S. davidhulli* sp. nov.（鳥取県，兵庫県）; *S. yatsugatakensis* sp. nov.（長野県）; *S. inbecillus* sp. nov.（福島県，新潟県，群馬県，栃木県，長野県，岐阜県）; *S. nemoralis* sp. nov.（山梨県）; *S. incalcaratus* sp. nov.（静岡県）; *S. clio* sp. nov.（三重県）; *S. araiorum* sp. nov.（埼玉県）; *S. ellipsoides* sp. nov.（山形県, 福島県）; *S. alesi* sp. nov.（静岡県）; *S. praeclarus* sp. nov.（徳島県）. *Dianous* gongen Y. Watanabe, 1984を*D. japonicus* Sawada, 1960の，*S. ambiguellus* Naomi, 1998aを*S. shuheii* Naomi, 1990aの，*S. geisha* Puthz, 2001 を*S. nyorai* Naomi, 1990aの，*S. tengu* Hromádka, 1990aを*S. santira* Naomi, 1988aのシノニムとした．*S. bunraku* Hromádka, 1990bはこれまで*S. zdenae* Hromádka, 1990bのシノニムとなっていたが，独立種と認めた. *S. asyura hakonensis* Naomi, 2004aを種に昇格した；（*S. hakonensis* Naomi stat. nov.）. *D. iwakisanus* Y. Watanabe, 1984および*S. carura* Naomi, 1989aを再記載した.