

**NEW ASIAN SPECIES AND NEW RECORDS
OF THE GENUS *STEGANA* MEIGEN
(DIPTERA : DROSOPHILIDAE).
II. SUBGENERA *PSEUDOSTEGANA* OKADA AND
STEGANINA WHEELER**

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Résumé. – Espèces asiatiques nouvelles et peu connues du genre *Stegana* Meigen (Diptera : Drosophilidae). II. Sous-genres *Pseudostegana* Okada et *Steganina* Wheeler. – Trois espèces nouvelles du genre *Stegana* Meigen : *S. (Steganina) izu*, sp. n. (Japon), *S. (S.) maymyo*, sp. n. (Myanmar), *S. (S.) moritha*, sp. n. (Myanmar) sont décrites. *S. (Pseudostegana) fleximediata* Takada, Momma & Shima est décrit. De nouvelles citations de *S. (Steganina) baechlii* Laštovka & Maca, *S. (S.) ctenaria* Nishiharu et *S. (S.) masanoritodai* Okada & Sidorenko sont données.

Abstract. – Three new species of the genus *Stegana* Meigen : *S. (Steganina) izu*, sp. n. (Japan), *S. (S.) maymyo*, sp. n. (Myanmar), *S. (S.) moritha*, sp. n. (Myanmar) are described. *S. (Pseudostegana) fleximediata* Takada, Momma & Shima is redescribed. New collection records of *S. (Steganina) baechlii* Laštovka & Maca, *S. (S.) ctenaria* Nishiharu and *S. (S.) masanoritodai* Okada & Sidorenko are given.

This is the second article dealing with the Asian species of the genus *Stegana* Meigen. Based upon collections from Japan, Myanmar, Russia, and Viet Nam, this paper adds 3 new species of the subgenus *Steganina* to the faunal list of the genus *Stegana*. Abbreviations used for morphological descriptions are given in ZHANG & TODA (1992).

Types of new species described here are deposited in the Entomological Institute, Hokkaido University, Sapporo, Japan (EHU) and Zoological Institute, Russian Academy of Sciences, St. -Petersburg, Russia (ZISP). New collection records are marked with an asterisk (*).

Subgenus *PSEUDOSTEGANA* Okada

Pseudostegana Okada, 1978, *Kontyû*, **40** : 392 (as subgenus of *Stegana*). Type species : *Stegana (Parastegana) grandipalpis* Takada & Shima, 1975.

Twelve species are known only from Asia : *albinotata* Okada, 1982 (Philippines), *campanularia* Okada, 1982 (Philippines), *fleximediata* Takada, Momma & Shima, 1973 (Borneo), *grandipalpis* Takada & Shima, 1975 (Malaysia), *hirta* Okada, 1982 (Philippines), *javana* Okada, 1978 (Java), *lacrymaria* Okada, 1982 (Sabah), *latiparma* Okada, 1982 (Java, New Guinea, Philippines), *latizonaria* Okada, 1982 (Philippines), *lineoparma* Okada, 1982

(Java, New Guinea), *malayana* Okada, 1978 (Malaysia), *zonaria* Okada, 1982 (New Guinea). The diagnosis of the subgenus was given by OKADA (1978).

Stegana (Pseudostegana) fleximediata Takada, Momma & Shima, 1973 (fig. 1-3)

Stegana (Parastegana) fleximediata Takada, Momma & Shima, 1973, *J. Fac. Sci., Hokkaido Univ.*, VI, Zool., 19 : 74.

Stegana (Pseudostegana) fleximediata ; Okada, 1978, *Kontyû*, 46 : 395.

Redescription. – **Male.** Body length ca. 2.6 mm. Thorax length ca. 1.15 mm. *Head.* Eye red. Ocellar triangle brownish black; ocelli yellowish; ocellar setae long. Frontal vitta orange brown. Fronto-orbital plate orange brown. *orb2* very fine. Postverticals absent. Face yellowish gray. Facial carina narrow. Clypeus yellowish gray. Gena silvery white to yellow, very narrow. Occiput brown. Pedicel yellowish gray, with 1 stout seta; 1st flagellomere grayish brown; terminal bifurcation of arista moderate. Palpus yellowish gray, with 1 subterminal seta.

Thorax. Scutum orange brown, with narrow, dark brown longitudinal stripes broadened and confluent with each other caudally. Scutellum brown, orange brown apically. Postpronotal lobe orange brown; postpronotal seta 1, long. Acrostichal setulae in 10 irregular rows. Mesopleuron dark brown, glossy. Basal scutellar setae almost parallel; apical ones convergent and crossed. Wing (fig. 1) hyaline, with large light brown patches: on costal cell, alula and from costa to *M-Cu* along *dm-cu*, vertically, and along costal margin to apex of *M*. *M* straight. Veins and crossveins dark brown. *C1* setae 2, equal in size. Halter pale gray. Legs yellowish brown; femora and hind tibia dark brown.

Abdomen. Tergites glossy black. Sternites yellowish gray. Pleural membrane pale gray.

Male terminalia. Epandrium (fig. 2) narrowed below, micropubescent with ca 14 setae in lower part. Surstylus almost semicircular, with chitinized inner margin and 2 short setulae below. Cercus strongly chitinized below, pubescent, with ca. 20 setulae. Aedeagus (fig. 3) flask-shaped, strongly chitinized, narrowed apically (in caudal view), basally with curved setigerous processes. Paramere slender, apically pointed without sensilla. Hypandrial lobe very broad.

Measurements. WL = 2.4 mm; WW = 1.0 mm.

Indices. FW/HW = 0.43; *ch/o* = 0.04; *prorb* = 1.0; *rcorb* = 0.17; *vb* = 1.0; *sctl* = 1.33; *sterno* = 0.69; *orbito* = 0.75; *dcp* = 0.21; *sctlp* = 1.0; *C* = 1.92; *4c* = 1.73; *4V* = 3.1; *5x* = 0.94; *ac* = 13.0; *M* = 0.56; *C3F* = 0.69; *arb* = 7/1.

Material examined. – Male, Viet Nam, Tam Dao, pr. Vinh Phu, 1000 m, forest, 13-XI-1990 (*E. Naritshuk*) (ZISP).

Distribution. – Viet Nam (new record), Borneo.

Subgenus **STEGANINA** Wheeler

Steganina Wheeler, 1960, *Proc. Ent. Soc. Wash.*, 62 : 110 (as subgenus of *Stegana*). Type species : *Musca coleoptrata* Scopoli, 1763.

Twenty-one species of this subgenus are reported from Asia : *baechlii* Laštovka & Maca, 1982 (Japan, Russian Far East), *castanea* Okada, 1988 (Sri Lanka), *coleoptrata* (Scopoli, 1763) (Siberia, Russian Far East), *ctenaria* Nishiharu, 1979 (central China, Japan, Korea, Russian Far East), *hypoleuca* Meigen, 1830 (Siberia, Russian Far East), *kanmiyai* Okada & Sidorenko, 1992 (Japan, Taiwan), *longifibula* Takada, 1968 (northeastern China, Japan, Russian Far East), *masanoritodai* Okada & Sidorenko, 1992 (northeastern China, Japan, Russian Far East), *nigrifrons* de Meijere, 1911 (Taiwan, Sumatra, Java, Sri Lanka), *nigrithorax* Strobl, 1898 (central China, Japan, Korea, Russian Far East, Taiwan), *nigro-limbata* Duda, 1924 (southern China, Taiwan), *ornatipes* Wheeler & Takada, 1964 (Ryukyu

Is.), *papuana* Okada & Sidorenko, 1992 (Papua New Guinea), *penihexata* Gupta & Panigrahy, 1987 (India), *scutellata* de Meijere, 1911 (Japan, Java, Nepal), *shirozui* Okada, 1971 (Taiwan, India), *sidorenkoi* Hu & Toda, 1994 (Russian Far East), *subexcavata* Vaidya & Godbole, 1976 (India), *toyaensis* Okada & Sidorenko, 1992 (Japan), *unidentata* Takada, 1968

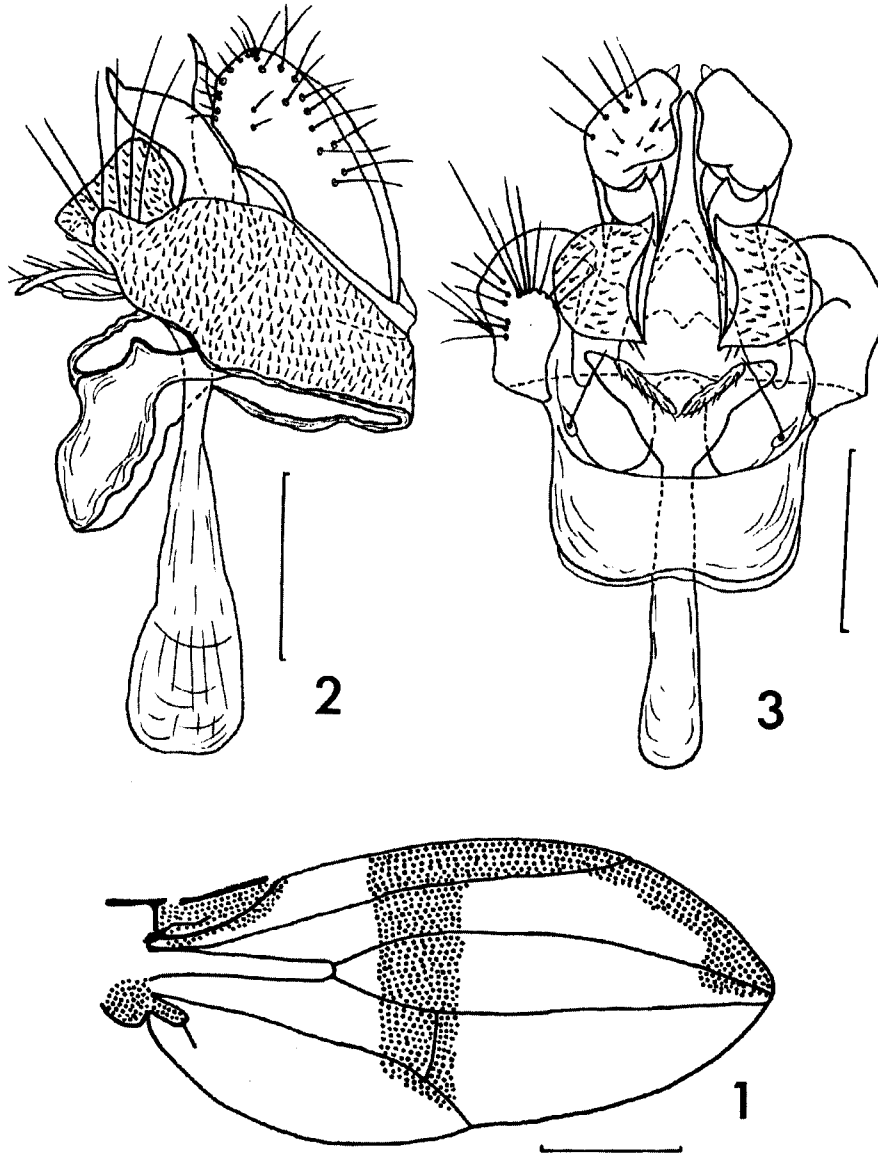


Fig. 1 to 3, *Stegana (Pseudostegana) fleximediata* Takada, Momma & Shima. – 1, wing. – 2, male terminalia (lateral view). – 3, ditto (ventral view). [Scale-line = 0.5 mm (fig. 1), and 0.25 mm (fig. 2-3)].

(Japan), *xuei* Hu & Toda, 1994 (northeastern and northern China, Russian Far East). The diagnosis of the subgenus was given by WHEELER (1960), OKADA (1971, 1978) and LAŠTOVKA & MACA (1982).

Stegana (Steganina) izu, sp. n. (fig. 4-7)

Type material. – **Holotype male**, Japan, Izu Is., Hachijo I., 16-V-1988 (M. J. Toda). – **Paratypes** : 3 females, the same data as holotype (EHU).

Diagnosis. – Surstylus almost quadrate, micropubescent below, with 1 black tooth and ca. 10 fine setulae on inner margin (fig. 4). Parameres absent (fig. 5). Aedeagus slightly bilobed apically, without hair crown (fig. 6-7).

Male and female. – Body length ca. 2.9 mm (2.8–3.0). Thorax length ca. 1.59 mm (1.5–1.7). *Head.* Eye red, sparsely with long, thin pile. Ocellar triangle dark brown; ocelli reddish; ocellar setae long. Frontal vitta dark brown to black. Fronto-orbital plate yellowish brown, dark brown anteriorly. Face yellowish brown in upper part, yellow in lower part. Facial carina narrow, high, prominent in upper to middle part. Clypeus brown. Gena broad, yellowish white but dark brown posteriorly. Occi-

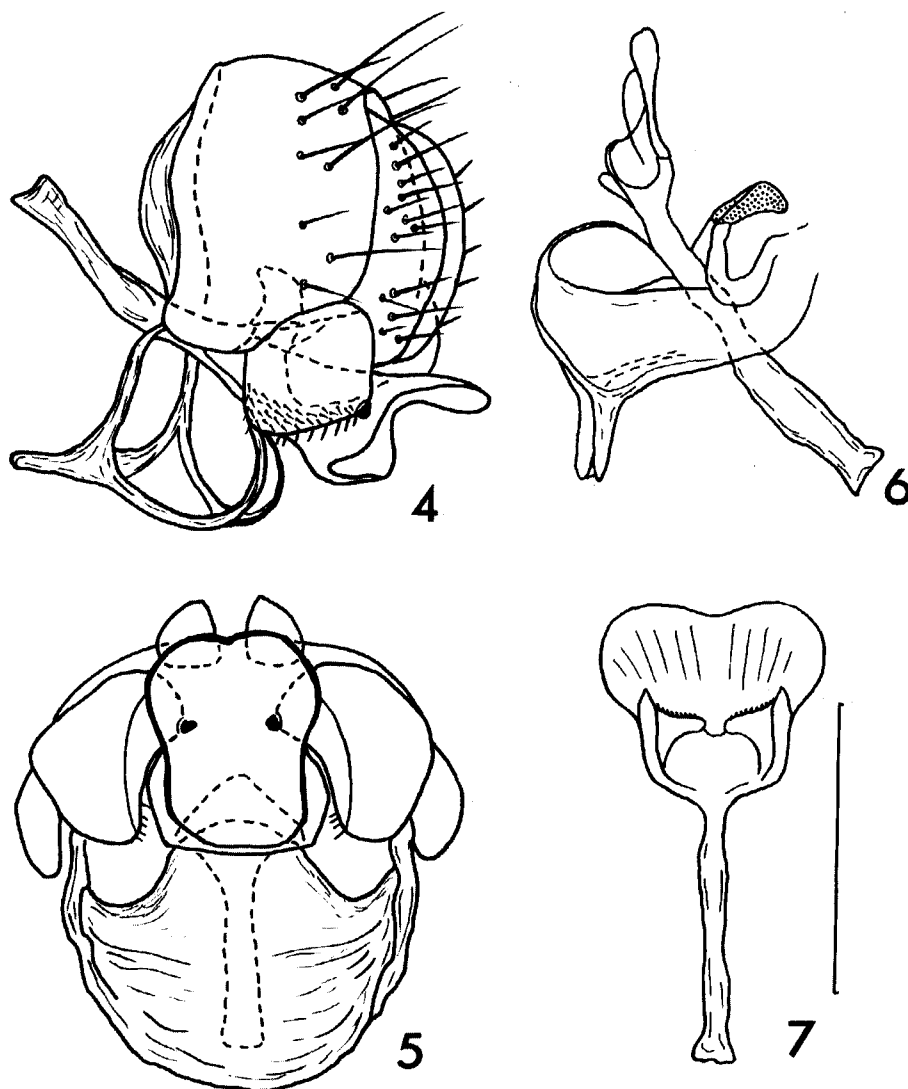


Fig. 4 to 7, *Stegana (Steganina) izu*, sp. n. – 4, male terminalia (lateral view). – 5, *ditto* (ventral view). – 6, aedeagus (lateral view). – 7, *ditto* (ventral view). (Scale-line = 0.25 mm).

put yellowish brown. Pedicel yellowish brown, with 1 stout seta and a few short setulae; 1st flagellomere brown; terminal bifurcation of arista moderate in male. Palpus narrow, yellow, with 1 terminal and 1 subterminal setae and ca. 3 ventral ones.

Thorax. Scutum and scutellum reddish brown. Postpronotal lobe yellowish brown; postpronotal setae 2, lower one longer. Acrostichal setulae in 8–10 irregular rows. Mesopleuron yellow, with broad, brown longitudinal stripes and obscure brown spot below katepisternal setae. Basal scutellar setae divergent; apicals ones convergent apically. Wing brown anteriorly. Veins dark brown. Crossveins slightly clouded. *CI* setae 2, almost equal in size. Halter yellow. Fore legs yellow; middle and hind ones slightly darkened at knee joints. Preapicals on all tibiae; apical on middle tibia. Fore 1st tarsomere as long as 3 succeeding tarsal segments together. Middle and hind 1st tarsomeres as long as 4 succeeding segments together.

Abdomen. Tergites dark brown, each with narrow indistinct black caudal bands. Sternites pale brown. Pleural membrane pale gray.

Male terminalia. Epandrium (fig. 4) almost rectangular below, with ca. 9 setae. Cercus semi-circular, with ca. 15 setae. Hypandrial lobe wide, broadly rounded.

Measurements. WL = 2.55 mm (2.3–2.7); WW = 1.21 mm (1.1–1.3).

Indices. FW/HW = 0.46 (0.4–0.49); *ch/o* = 0.24 (0.2–0.28); *prorb* = 1.1 (1.0–1.2); *rcorb* = 0.68 (0.63–0.75); *vb* = 0.4 (0.35–0.45); *dcl* = 0.4 (0.38–0.42); *sctl* = 1.61 (1.44–1.77); *presctl* = 0.53 (0.45–0.59); *sterno* = 1.15 (1.1–1.2); *orbito* = 2.0 (1.88–2.17); *dcp* = 0.24 (0.2–0.28); *sctlp* = 1.37 (1.28–1.47); *C* = 1.94 (1.74–2.17); *4c* = 1.29 (1.14–1.35); *4V* = 2.13 (1.99–2.23); *5x* = 1.64 (1.57–1.75); *ac* = 18.73 (16.0–20.1); *M* = 0.61 (0.52–0.66); *C3F* = 0.73 (0.71–0.76); *arb* = 76/54.

Distribution. – Japan (Hachijo I.).

Relationship. – This new species resembles *S. (S.) nigrifrons* in having of similar coloration of head and scutum, but can be clearly distinguished from it by the shape of male terminalia.

Etymology. – Toponym. Pertaining to the type locality.

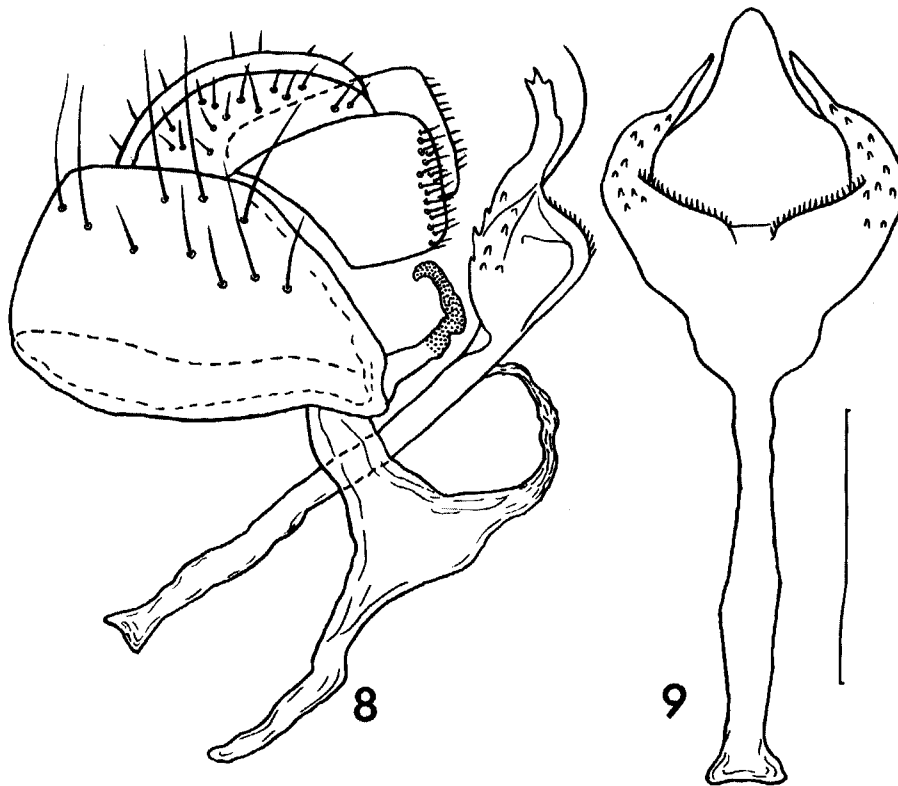


Fig. 8 and 9, *Stegana (Steganina) maymyo*, sp. n. – 8, male terminalia (lateral view). – 9, aedeagus (ventral view). (Scale-line = 0.25 mm).

***Stegana (Steganina) maymyo*, sp. n. (fig. 8-9)**

Type material. – **Holotype male**, Myanmar, Pyin Oo Lwin, (May Myo), 6-I-1982 (*M. J. Toda*) (EHU).

Diagnosis. – Anteroventral corner of flagellomere rectangular. Surstylus almost quadrate below, ventrally with ca. 15 short setulae (fig. 8). Aedeagus with short fine hairs. Lateral processes of aedeagus curved and serrated (fig. 9).

Male. – Body length ca. 2.9 mm. Thorax length ca. 1.5 mm. *Head.* Eye red. Ocellar triangle dark brown; ocelli reddish; ocellar setae long. Frontal vitta dark brown to black. Fronto-orbital plate yellowish brown, dark brown anteriorly. Face yellowish brown in upper part, yellow in lower part. Facial carina narrow, high, prominent in upper to middle part. Clypeus brown. Gena broad, yellowish white, but dark brown posteriorly. Occiput yellowish brown. Pedicel yellowish brown, with 1 stout seta and a few short setulae; 1st flagellomere brown; terminal bifurcation of arista moderate. Palpus narrow, yellow, with 1 terminal and 1 subterminal setae and ca. 3 ventral ones.

Thorax. Scutum and scutellum yellowish brown. Postpronotal lobe yellow; postpronotal seta 2, lower one longer. Acrostichal setulae in 8 irregular rows. Mesopleuron yellow, with obscure brown longitudinal stripe. Basal scutellar setae divergent. Wing brown anteriorly, paler posteriorly. Veins and crossveins dark brown, not clouded. *C1* setae 2, almost equal in size. Halter yellow. Fore legs yellow; middle and hind ones slightly darkened at knee joints. Preapicals on all tibiae; apical on middle tibia. Fore 1st tarsomere as long as 3 succeeding tarsal segments together. Middle 1st tarsomere as long as 4 succeeding segments together.

Abdomen. Tergites yellowish brown, each with narrow, indistinct black caudal bands. Sternites pale brown. Pleural membrane pale gray.

Male terminalia. Epandrium (fig. 8) narrowed ventrally, somewhat rectangular below, with 10 setae. Cercus semicircular, with ca. 15 short setulae. Aedeagus (fig. 9) swollen medially. Paramere minute or absent. Gonopod strongly sclerotized apically. Hypandrial lobe narrowed below.

Measurements. WL = 2.1 mm; WW = 1.1 mm.

Indices. – FW/HW = 0.4; *ch/o* = 0.25; *prorb* = 1.13; *rcorb* = 0.61; *vb* = 0.4; *dcl* = 0.54; *presctl* = 0.65; *sterno* = 0.95; *orbito* = 2.0; *dcp* = 0.14; *sctlp* = 1.64; *C* = 1.77; *4c* = 1.24; *4V* = 2.0; *5x* = 1.56; *ac* = 13.0; *M* = 0.6; *C3F* = 0.7.

Female unknown.

Distribution. – Myanmar.

Relationship. – This species is closely related to *S. (S.) nigrifrons* in having of similar coloration of scutum and head, but clearly differs from it in the shape of male terminalia.

Etymology. – Toponym. Pertaining to the type locality.

Stegana (Steganina) moritha, sp. n. (fig. 10-11)

Type material. – Holotype male, Myanmar, Yangon, Mingaladon, 18-XII-1981 (*M. J. Toda*) (EHU).

Diagnosis. – Epandrium narrowed and almost parallel-sided in upper part (fig. 10). Surstylus with 1 small black tooth and ca. 10–12 setulae (fig. 11). Aedeagus short and broadened apically, without hair crown (fig. 11).

Male. – Body length ca. 2.1 mm. Thorax length ca. 0.95 mm. *Head.* Eye red. Ocellar triangle dark brown; ocelli reddish; ocellar setae long. Frontal vitta dark brown to black. Fronto-orbital plate yellowish brown, dark brown anteriorly. Face yellowish brown in upper part, yellow in lower part. Facial carina narrow, high, prominent in upper to middle part. Clypeus brown. Gena broad, yellowish white, but dark brown posteriorly. Occiput yellowish brown. Pedicel yellowish brown, with 1 stout seta and a few short setulae; 1st flagellomere brown; terminal bifurcation of arista small. Palpus narrow, yellow, with 1 terminal and 1 subterminal setae and ca. 3 ventral ones.

Thorax. Scutum and scutellum light brown. Postpronotal lobe yellowish brown; postpronotal setae 2, lower one longer. Acrostichal setulae in 8 irregular rows. Mesopleuron yellow, with broad, brown longitudinal stripe. Basal scutellar setae divergent. Wing brown. Veins and crossveins dark brown, not clouded. *C1* setae 2, almost equal in size. Halter pale yellow. Fore legs yellow; middle and hind ones slightly darkened at knee joints. Preapicals on all tibiae; apicals on fore and middle tibiae. Fore 1st tarsomere as long as 3 succeeding tarsal segments together. Middle 1st tarsomere as long as 4 succeeding segments together.

Abdomen. Tergites yellowish brown, each with narrow indistinct black caudal band. Sternites pale brown. Pleural membrane pale yellow.

Male terminalia. Epandrium (fig. 11) rounded below, with ca. 10 setae from middle to lower part. Surstylus somewhat quadrate in lateral view. Cercus almost oval, with ca. 15–20 setulae. Parameres absent. Hypandrial lobe broader than long.

Measurements. WL = 1.8 mm; WW = 0.85 mm.

Indices. FW/HW = 0.44; *ch/o* = 0.22; *prorb* = 1.88; *rcorb* = 1.0; *vb* = 0.53; *sterno* = 0.79; *orb* = 2.3; *dcp* = 0.17; *sctlp* = 1.64; *C* = 1.8; *4c* = 1.29; *4V* = 2.06; *5x* = 1.67; *ac* = 20.0; *M* = 0.65; *C3F* = 0.65; *arb* = 7/5.

Female unknown.

Distribution. – Myanmar.

Relationship. – This new species is similar with *S. (S.) nigrifrons* in the coloration of head and scutum, but can be clearly distinguished from it by the shape of epandrium, surstylus, and aedeagus.

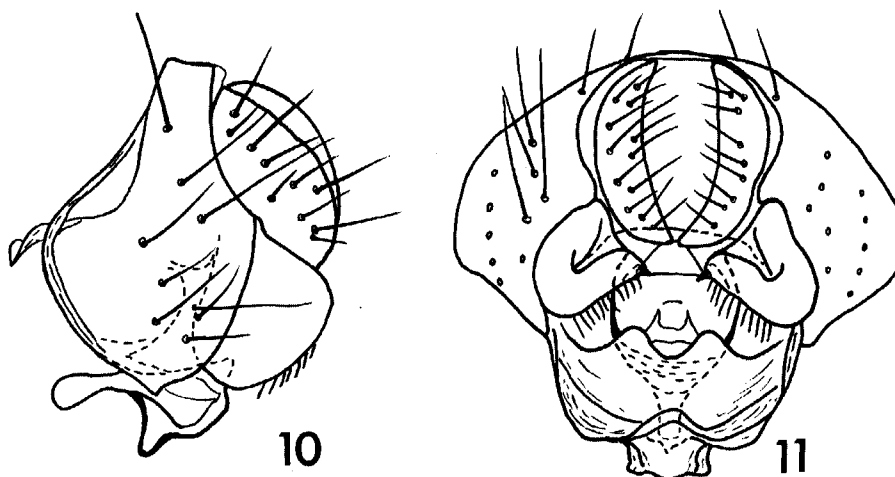


Fig. 10 and 11, *Stegana (Steganina) moritha*, sp. n. – 10, male terminalia (lateral view). – 11, *ditto* (ventral view). (Scale-line = 0.1 mm).

Stegana (Steganina) baechlii Laštovka & Maca, 1982

Stegana (Steganina) baechlii Laštovka & Maca, 1982, *Annot. Zool. Bot. Bratislava*, **149** : 12; HU & TODA, 1994, *Jpn. J. Ent.*, **62** : 153.

Material examined. – Male, Russia, Khabarovsk Province, Komsomol'sky Nature Reserve, Bolshaya Talanda Riv., 13/14-VII-1996 (*H. Watabe*).

Distribution. – Northern and central Europe, Japan (Hokkaido, Tohoku), Russia (Primorye, Khabarovsk*).

Stegana (Steganina) ctenaria Nishiharu, 1979

Stegana (Steganina) ctenaria Nishiharu, 1979, *Kontyû*, **47** : 38; TODA *et al.*, 1996, *Zool. Sci.*, **13** : 462.

Stegana (Steganina) lacunata Krivosheina, 1987, *Ecology and Morphology of Insects inhabiting fungi* : 33.

Material examined. – Male, Japan, Kumamoto Pref., Yamaingiri, Izumimura, 26-VI-1992 (*V. Makarkin*).

Distribution. – Central China, Japan (Hokkaido, Honshu, Kyushu*), Russia (Primorye; Kunashir I.).

Stegana (Steganina) masanoritodai Okada & Sidorenko, 1992

Stegana (Steganina) masanoritodai Okada & Sidorenko, 1992, *Jpn. J. Ent.*, **60** : 415.

Material examined. – Male, Russia, Khabarovsk Province, Komsomol'sky Nature Reserve, Bolshaya Talanda Riv., 13/14-VII-1996 (*H. Watabe*).

Distribution. – Northeastern China, Japan (Hokkaido), Russia (Primorye, Khabarovsk*).

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