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NEW ASIAN SPECIES AND NEW RECORDS OF THE GENUS *STEGANA* MEIGEN (DIPTERA : DROSOPHILIDAE). III. DESCRIPTIONS, TAXONOMIC REMARKS AND KEY TO THE ASIAN SPECIES

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Résumé. – Espèces asiatiques nouvelles et peu connues du genre *Stegana* Meigen (Diptera : Drosophilidae). III. Descriptions, remarques taxonomiques et clé d'identification des espèces. – Cinq espèces nouvelles du genre *Stegana* Meigen : *S. (Pseudostegana) latipalpis*, sp. n. (Taiwan), *S. (Oxyphortica) enigma*, sp. n. (Viet Nam), *S. (O.) maichouensis*, sp. n. (Viet Nam), *S. (O.) watabei*, sp. n. (Indonesia), *S. (Steganina) chitouensis*, sp. n. (Taiwan) sont décrites. *S. belokobylskiji* Sidorenko et *S. vietnamensis* Sidorenko sont transférés du sous-genre *Oxyphortica* dans le sous-genre *Steganina*. Les genitalia femelles de *S. (Pseudostegana) grandipalpis* Okada sont décrits pour la première fois. Une clé de détermination des espèces asiatiques des sous-genres de *Stegana* et de nouvelles citations pour *S. (Oxyphortica) adentata* Toda & Peng, *S. (O.) convergens* (de Meijere) et *S. (Steganina) ornatipes* Wheeler & Takada, sont données.

Abstract. – Five new species of the genus *Stegana* Meigen : *S. (Pseudostegana) latipalpis*, sp. n. (Taiwan), *S. (Oxyphortica) enigma*, sp. n. (Viet Nam), *S. (O.) machouensis*, sp. n. (Viet Nam), *S. (O.) watabei*, sp. n. (Indonesia) and *S. (Steganina) chitouensis*, sp. n. (Taiwan) are described. *S. belokobylskiji* Sidorenko and *S. vietnamensis* Sidorenko are replaced from the subgenus *Oxyphortica* to the subgenus *Steganina*. Female genitalia of the *S. (Pseudostegana) grandipalpis* Okada is described for the first time. New collection records of *S. (Oxyphortica) adentata* Toda & Peng, *S. (O.) convergens* (de Meijere), *S. (Steganina) ornatipes* Wheeler & Takada are given. Key to the Asian species of the genus *Stegana* is given.

This is the third part of article dealing with new and little known species of the genus *Stegana* Meigen from East Asia. Some species described by myself previously (SIDORENKO, 1997) as well as additional material were re- and examined.

Based upon collections from Taiwan, Viet Nam, Malaysia and Indonesia, this article adds five new species to faunal list of the genus *Stegana*. The key to the all known Asian species is combined below (mainly after OKADA, 1978; SIDORENKO & OKADA, 1991; OKADA & SIDORENKO, 1992). Now seventy species of this genus are recorded from Asia. But many female specimens still can not be identified with certainty. Also some species described at the end of XIXth and at the beginning of XXth centuries must be re-examined more precisely. On the other hand, differences between subgenera *Orthostegana* and *Oxyphortica* are quite insignificant. There is only one morphological character for subdi-

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vision of these subgenera (M_{1+2} strongly curved forward or not). I don't found another valuable characters to separate these subgenera in relevant literature. Single specimen from collection of Prof. T. Okada [label - Penang, Malaysia, 20 Jul. 1971 T. Okada/ 1. 21.35; slide preparation of male genitalia - 12 135 male *Stegana (Orthost.)*] belongs to the subgenus *Oxyphortica* and resembles *S. (O.) convergens*. No any additional *Orthostegana'* specimens were studied. Therefore traditional subdivision of the genus is accepted here.

Types of new species described here are deposited in the Entomological Institute, Hokkaido University, Sapporo, Japan (EHU), Institute of Biology and Pedology, Far Eastern Division of the Russian Academy of Sciences, Vladivostok, Russia (IBP), Museum Zoologicum Bogoriense, Bogor, Indonesia (MZB) and Zoological Institute, Russian Academy of Sciences, St. - Petersburg, Russia (ZISP). New collection records are marked with an asterisk (*).

Stegana (Pseudostegana) latipalpis, sp. n. (figs. 1-3)

Type material. – **Holotype male**, Taiwan, Fushan, sweeping, 9-IV-1997 (*M. J. Toda*). – **Paratype** : male, the same label as holotype (EHU).

Diagnosis. – Palpus swollen and very broad. Epandrium (fig. 1) with *ca.* 20 setae from upper to lower part. Dorsal margin of aedeagus somewhat triangular (fig. 3).

Male. Body length 3.4 mm. Thorax length 1.5 (1.45 in paratype) mm. *Head.* Eye red. Ocellar triangle brownish black; ocelli reddish. Frontal vitta and fronto-orbital plate dark brown. Face yellowish brown. Facial carina broad. Clypeus yellowish brown, darker laterally. Gena dark brown at bases of oral setae. Postgena yellowish brown, narrow. Subvibrissa prominent but shorter than vibrissa. Pedicel dark brown, with 2 prominent setae; 1st flagellomere yellowish brown; terminal bifurcation of arista large. Palpus dark brown, with 1 long subterminal seta and 5-6 ventral ones.

Thorax. Scutum brownish yellow anteriorly, darkened posterad. Scutellum brownish yellow. Postpronotal lobe brownish yellow; postpronotal seta 1, long. Acrostichal setulae in 8-10 irregular rows. Anepisternum brownish yellow anteriorly, darker posterad. Katepisternum yellowish brown, dark brown posteroventrally. Other pleurites dark brown. Dorsalmost seta of a group of fine setae ventral to and between 2 prominent katepisternal longer than other but shorter than anterior katepisternal. Basal scutellar setae divergent, apicals convergent and crossed. Wing pale grayish, with dark brown longitudinal and transverse bands. Veins and crossveins yellowish brown. Halter dark brown, knob of halter yellowish brown. Legs yellow, slightly darkened at knee joint. Preapical dorsal setae on all tibiae; apical on middle one.

Abdomen. 1st tergite yellowish brown; 2nd and 3rd - yellowish brown anterolaterally, brownish black medially; other tergites brownish black. 2nd to 6th tergites with long setae along the caudal margin. Length of submedian setae are more than length of tergites. Pleural membrane pale gray.

Male terminalia. Epandrium (fig. 1) somewhat narrowed ventrally, nearly entirely pubescent (excluding anterior part). Cercus semicircular, rounded ventrally, pubescent, with *ca.* 35 setae. Surstylus almost quadrate, with *ca.* 9 short sensillae on outer and 15-16 ones on inner surface. Aedeagus (fig. 2) flake-shaped (in ventral view), broadened subbasally and narrowed apically. Aedeagal apodeme rod-like, articulating with aedeagus. Basal processes of aedeagus free from gonopodes, broadened basally, brush-shaped. Parameres (fig. 3) strongly chitinized and claw-shaped apically, elongated, with 2 long sensillae subapically and 8-9 minute ones, situated nearly in straight row along posterior margin. Hypandrial lobe almost quadrate, with 2 long paramedian setae. Gonopods confluent with each other, forming triangle plate behind of aedeagus. Decasternum with long lateral processes dorsally, confluent with surstyli.

Measurements. WL (wing length) = 3.0 mm. WW (wing width) = 1.3 mm.

Indices. FW/HW (frontal width/head width) = 0.44 (0.43 in paratype); *ch/o* (maximum width of gena/maximum diameter of eye) = 0.04; *prorb* (poclinate orbital/posterior reclinate orbital) = 0.94 (0.91); *rcorb* (anterior reclinate orbital/posterior reclinate orbital) = 0.16 (0.12); *vb* (subvibrissal/vibrissa) = 0.68 (0.81); *dcl* (anterior dorsocentral/posterior dorsocentral) = 0.15 (0.18); *sctl* (basal scutellar/apical scutellar) = 1.04 (1.08); *sterno* (anterior katepisternal/posterior katepisternal) = 0.75 (0.64); *orbito* (distance bet-

wen proclinate and posterior reclinate orbitals/distance between inner vertical and posterior reclinate orbital) = 0.6; *dcp* (length distance between dorsocentrals/cross distance between anterior dorsocentrals) = 0.16 (0.18); *sctlp* (distance between basal and apical scutellars/cross distance between apical scutellars) = 1.4 (1.14); *C* = 2.28 (2.61); *4c* = 1.29 (1.14); *4V* = 2.61 (2.52); *5x* = 0.88 (0.94); *ac* = 13.3 (12.0); *M* = 0.45 (0.48); *C3F* = 0.76; *arb* (dorsal branches of arista/ventral branches of arista) = 8/1.

Female unknown.

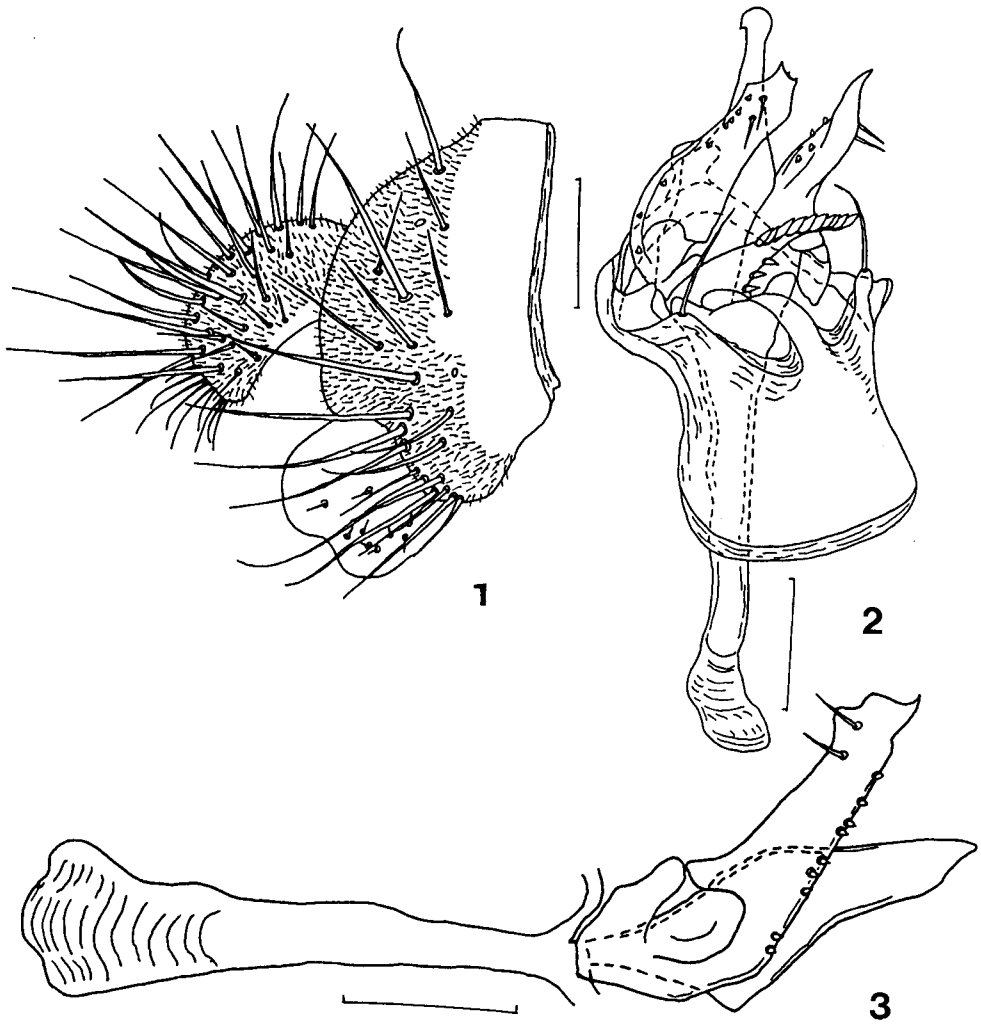

Fig. 1 to 3, *Stegana (Pseudostegana) latipalpis*, sp. n. – 1, periphallic organs (lateral view). – 2, phallic organs (lateral view, left basal aedeagal process not figured). – 3, aedeagus and paramere (lateral view). (Scale-line = 0.1 mm).

Distribution. – Taiwan.

Relationship. – This new species is closely related to *S. (P.) fleximediata* in general appearance (especially in coloration of wing and body) but differs from the later in diagnostic characters.

Etymology. – Pertaining to the diagnostic character, i.e. very wide palpus.

Stegana (Oxyphortica) enigma, sp. n. (figs. 4-9)

Type material. – **Holotype male**, Viet Nam, prov. Ha Son Binh, Ky Son, Cao Phong, 31-X-1990 (*E. Nartshuk*). – **Paratype** : female, the same locality, 27-X-1990 (*E. Nartshuk*) (ZISP).

Diagnosis. – Cercus (fig. 4) elongated, pubescent from dorsal to middle part. Surstylus rounded, without chitinized prensisetae. Aedeagus (figs 6, 7) without hair crown, flattened dorsoventrally and bilobed apically.

Male and **female**. Body length *ca.* 2.3 mm. Thorax length *ca.* 1.1 mm. *Head.* Eye dark red. Ocellar triangle brownish black; ocelli reddish; ocellar setae long. Frontal vitta yellowish brown posteriorly, yellowish gray, anteriorly, with a few interfrontal setulae. Fronto-orbital plate brownish (yellowish gray in paratype). Face yellowish gray. Facial carina slightly prominent in upper part. Clypeus yellow. Gena grayish yellow. Postgena grayish yellow, slightly darkened dorsally. Pedicel yellow, with 1 stout seta; 1st flagellomere yellowish brown; terminal bifurcation of arista small. Palpus yellow, with 1 subapical seta and a few ventral ones.

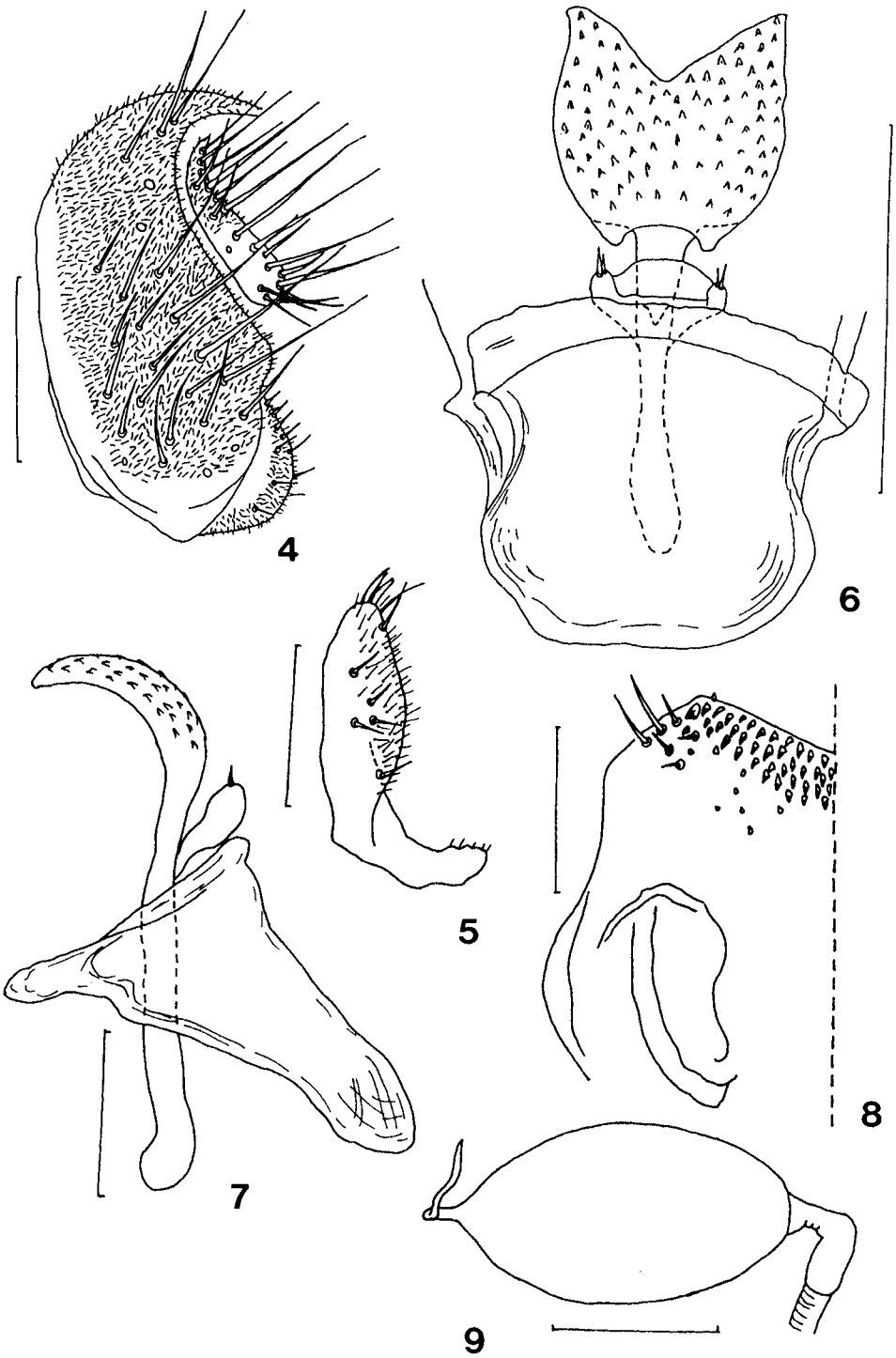

Fig. 4 to 9, *Stegana (Oxyphortica) enigma*, sp. n. – 4, male terminalia (lateral view). – 5, surstylus (caudal view). – 6, phallic organs (ventral view). – 7, ditto (lateral view). – 8, oviscapt (left side, ventral view). – 9, spermatheca (lateral view). (Scale-line = 0.1 mm).

Thorax. Scutum and scutellum reddish brown (brownish yellow in paratype). Postpronotal lobe yellowish brown; postpronotal seta 1, long. Acrostichal setae in 10 irregular rows. Mesopleuron yellow, with broad dark brown longitudinal stripe. Dorsalmost seta of a group of fine setae ventral to and between 2 prominent katepisternals longer than others but shorter than anterior katepisternal. Basal scutellar setae divergent, apical convergent and crossed. Wing dark brown. Veins and crossveins brown. Halter yellowish brown. Legs yellow. Preapical dorsal setae on all tibiae.

Abdomen. Tergites brownish black.

Male terminalia. Epandrium (fig. 4) nearly entirely pubescent (excluding anterior and ventralmost parts), with *ca.* 24 long setae. Cercus with *ca.* 20 setae. Surstylus (fig. 5) partly pubescent, with long ventral process directed inward and with *ca.* 10 short and stout setae. Aedeagus (figs 6, 7) serrated ventrally. Aedeagal apodeme about twice longer than aedeagus, confluented with aedeagus. Paramere elongated, with 1-2 sensillae apically. Hypandrial lobe as long as wide. Gonopods somewhat quadrate, without any prominent processes. Decasternum strongly chitinized anteriorly, with small lateral processes.

Female terminalia. Oviscapt (fig. 8) notched medially, with 4-5 stout setae laterally and 3-4 irregular rows of tooth-shaped spinules caudally. Cercus semicircular, small, not pubescent, with *ca.* 10 setae. Spermatheca (fig. 9) elongated. Spermathecal duct not introverted into capsule.

Measurements. WL = 1.9 mm. WW = 0.9 mm.

Indices. FW/HW = 0.38 (0.43 in paratype); *ch/o* = 0.1 (0.095); *prorb* = 1.33; *rcorb* = 1.0; *vb* = 0.47 (0.4); *dcl* = 0.52 (0.49); *sctl* = 1.14 (1.13); *sterno* = 0.83; *presctl* (prescutellar/posterior dorsocentral) = 0.54 (0.43); *orbito* = 2.25 (2.0); *dcp* = 0.3 (0.29); *sctlp* = 0.9 (0.68); *C* = 2.74 (2.98); *4c* = 0.97 (0.79); *4V* = 1.98 (1.73); *5x* = 1.64 (1.31); *ac* = 5.7 (4.17); *M* = 0.61 (0.54); *C3F* = 0.84 (0.9); *arb* = 5/4.

Distribution. – Viet Nam.

Relationship. – This new species is closely related to *S. (O.) convergens* in general appearance (especially in morphological characters) but differs from it in the diagnostic features.

Stegana (Oxyphortica) maichouensis, sp. n. (figs. 10-14)

Type material. – **Holotype male**, Viet Nam, prov. Ha Son Binh, Mai Chou, forest, 3-XI-1990 (*S. Belokobylskij*).

Diagnosis. – Surstylus (fig. 11) small and elongated, with 2 long, strongly chitinized prensisetae. Aedeagus (figs 12, 13) with hair-like crown apically and sharply acuted process directed anterodorsally. Paramere with 2 short sensillae.

Male. Body length *ca.* 3.1 mm. Thorax length *ca.* 1.5 mm. *Head*. Eye dark red. Ocellar triangle dark brown; ocelli yellowish; ocellar setae long. Frontal vitta yellowish gray, somewhat narrowed anteriorly. Fronto-orbital plate yellowish gray. Face grayish yellow. Facial carina slightly prominent in upper part, broadened ventrally. Clypeus yellow. Gena yellowish gray. Postgena yellow, narrow. Pedicel yellow, with 1 prominent seta; 1st flagellomere grayish yellow.

Thorax. Scutum brownish yellow to yellow. Scutellum slightly darker. Postpronotal lobe brownish yellow dorsally, yellow ventrally; postpronotal seta 1, long. Acrostichal setulae in 8-10 irregular rows. Mesopleuron whitish yellow, with broad dark brown longitudinal stripe. Basal scutellar setae divergent, apicals convergent and crossed. Wing light brown. Veins and crossveins dark brown. Legs yellow. Preapical dorsal setae on all tibiae.

Abdomen. Tergites brownish black. 1st tergite yellowish medially.

Male terminalia. Epandrium (fig. 10) broadly rounded below, nearly entirely pubescent, with *ca.* 40 setae shortened ventrally. Cerci elongated and narrow, not pubescent, with *ca.* 18 stout setae and *ca.* 6 fine ones ventrally. Surstylus (fig. 11) with 2 long prensisetae: one - apically, second - basally and directed anteroventrally, and *ca.* 12 short setulae near the apical prensiseta. Aedeagus (figs. 12, 13). Aedeagal apodeme more than twice longer than aedeagus. Paramere very small, oval. Anterior lobe of hypandrium slightly narrowed anteriorly. Gonopods bilobed dorsally. Decasternum with 2 pairs of strongly chitinized tooth. Ejaculatory apodeme : fig. 14.

Measurements. WL = 2.4 mm. WW = 1.1 mm.

Indices. *ch/o* = 0.08; *prorb* = 1.03; *rcorb* = 0.56; *vb* = 0.53; *presctl* = 0.5; *orbito* = 1.64; *dcp* = 0.32; *sctlp* = 0.71; *C* = 2.75; *4c* = 0.9; *4V* = 1.97; *5x* = 1.46; *ac* = 4.67; *C3F* = 1.0.

Female unknown.

Distribution. – Viet Nam.

Relationship. – New species is very similar to *S. (O.) convergens* in external morphology and shape of gonopods but differs from it in the shape of surstylus, aedeagus and decasternum.

Etymology. – Toponym. Pertaining to the type locality.

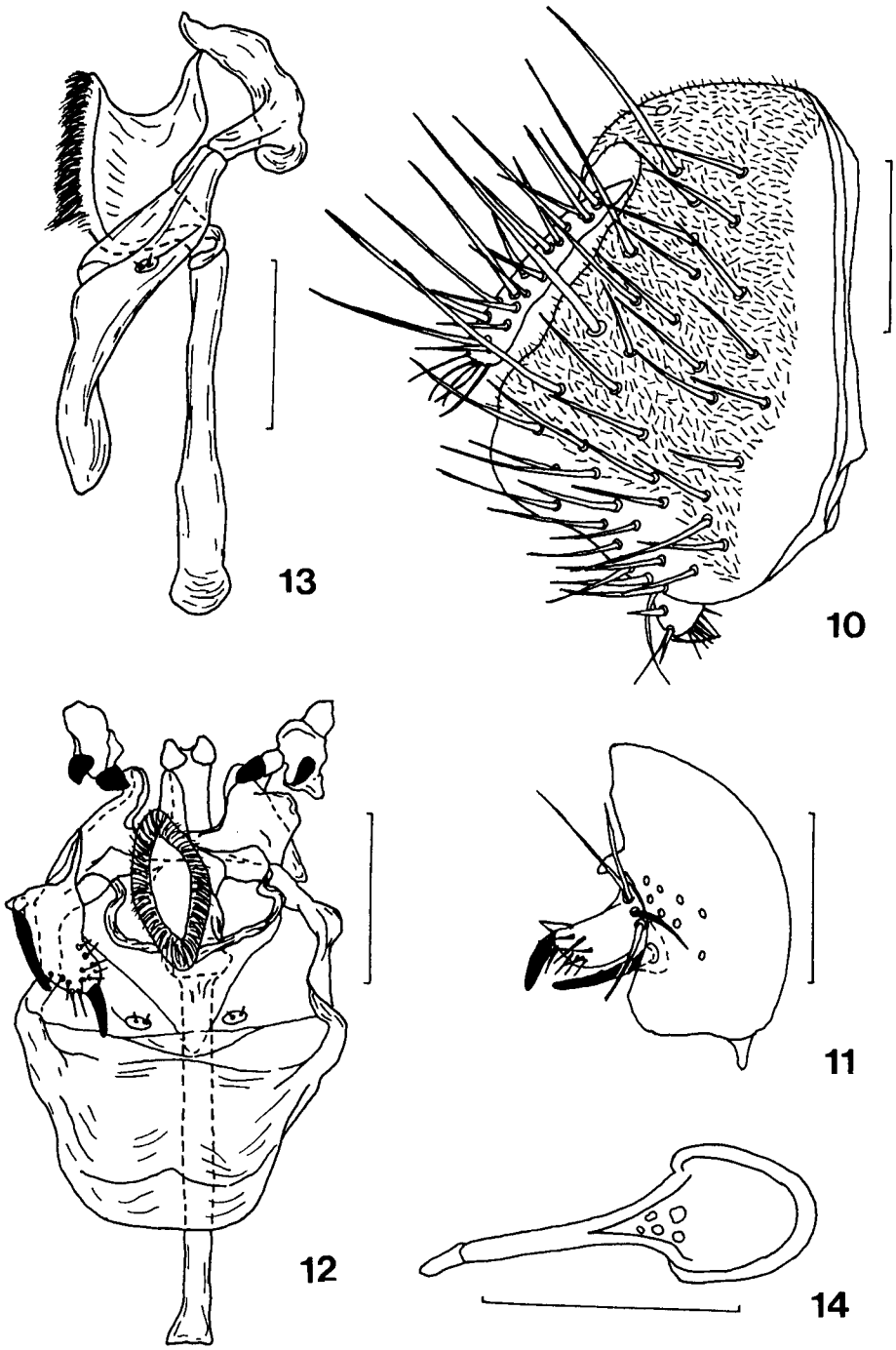

Fig. 10 to 14, *Stegana (Oxyphortica) maichouensis*, sp. n. – 10, male terminalia, including right surstylus (lateral view). – 11, surstylus (ventral view). – 12, phallic organs (ventral view). – 13, ditto (lateral view). – 14, ejaculatory apodeme (ventral view). (Scale-line = 0.1 mm).

Stegana (Oxyphortica) watabei, sp. n. (figs. 15-18)

Type material. – **Holotype male**, Indonesia, West Kalimantan, Gunung Pantang, by sweeping, 4-XII-1996 (*M. J. Toda*) (ZMB).

Diagnosis. – Cercus (fig. 15) nearly entirely pubescent. Surstylus (fig. 16) somewhat quadrate, without chitinized prensisetae. Aedeagus (figs. 17, 18) with 3 processes directed dorsally. Paramere without sensilla.

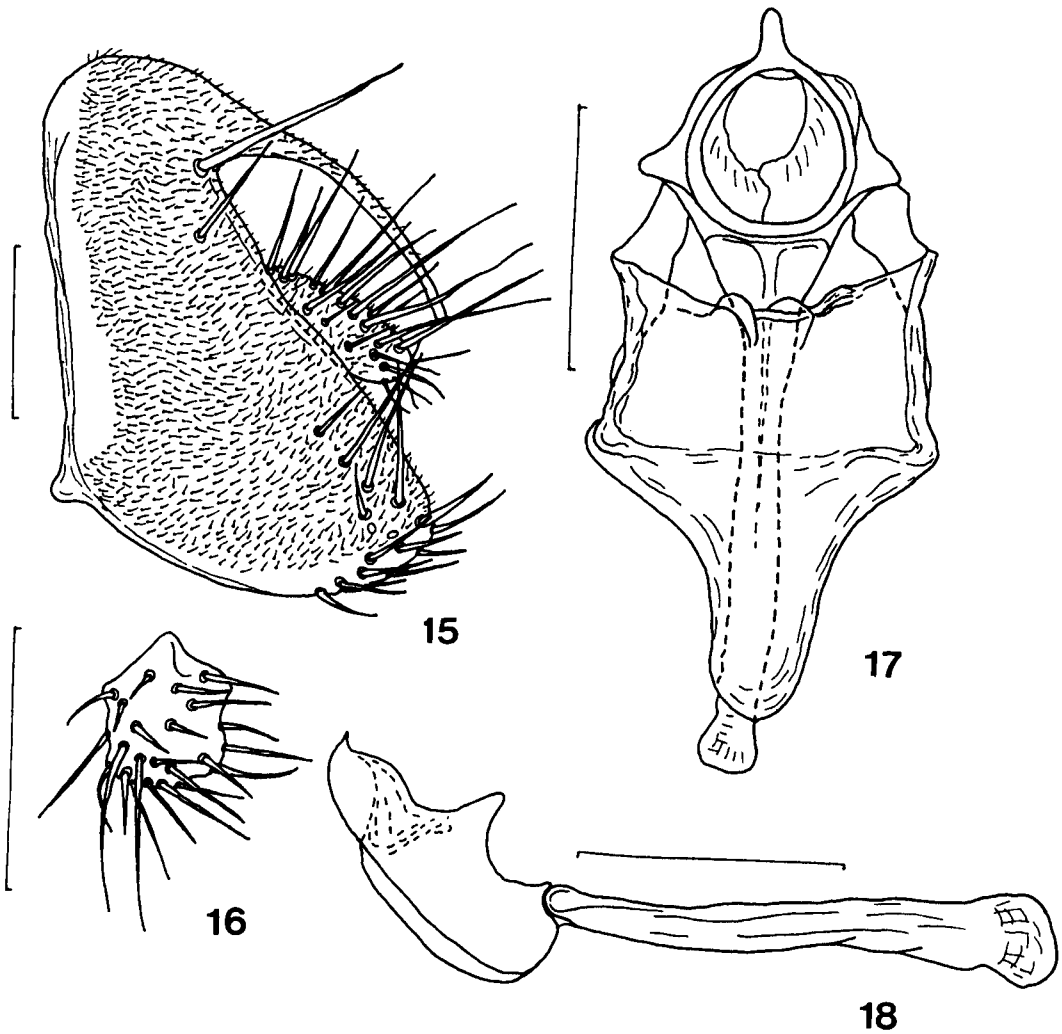

Fig. 15 to 18, *Stegana (Oxyphortica) watabei*, sp. n. – 15, male terminalia (lateral view). – 16, surstylus (lateral view). – 17, phallic organs (ventral view). – 18, aedeagus (lateral view). (Scale-line = 0.1 mm).

Male. Body length *ca.* 3.1 mm. Thorax length 1.3 mm. *Head.* Eye red. Ocellar triangle dark brown; ocelli reddish; ocellar setae long. Frontal vitta and face yellowish gray, slightly broadened anteriorly. Clypeus yellowish brown. Pedicel yellowish gray, with 1 prominent seta anteriorly; 1st flagellomere yellowish gray, slightly darkened anteroventrally; terminal bifurcation of arista moderate. Palpus elongated, yellowish, with 1 subapical seta and 3 ventral ones.

Thorax. Scutum brown. Scutellum somewhat darker. Postpronotal lobe yellowish brown; postpronotal seta 1, long. Acrostichal setulae in 8-10 irregular rows. Mesopleuron yellow, with broad dark brown longitudinal stripe. Dorsalmost seta of a group of fine setae ventral to and between 2 prominent katepisternals longer than other but shorter than anterior katepisternal. Basal scutellar setae divergent, apicals convergent and crossed. Wing brownish, paler posteriorly. Veins and crossveins dark brown. Halter yellowish. Legs yellow. Preapical dorsal setae on all tibiae; apical on fore and middle ones.

Abdomen. Tergites dark brown. 1st tergite yellowish brown anteriorly. Sternites and pleural membrane pale yellow.

Male terminalia. Epandrium (fig. 15) broadly rounded ventrally, nearly entirely pubescent (excluding anterior and ventral parts), with *ca.* 20 setae. Cercus elongated, slightly broadened ventrally, with *ca.* 10 long and *ca.* 8 more shorter setae. Surstylus (fig. 16) small, with 3 long and *ca.* 18 more shorter setae on outer surface. Aedeagus (figs. 17, 18) strongly chitinized. Aedeagal apodeme rod-like, in 2 times longer than aedeagus, articulated with aedeagus. Paramere small, conical. Gonopods trapezie-form, connected with caudolateral processes of hypandrium. Hypandrial lobe narrowed ventrally.

Measurements. WL = 2.1 mm. WW = 1.0 mm.

Indices. FW/HW = 0.33; *ch/o* = 0.11; *prorb* = 1.06; *rcorb* = 0.65; *vb* = 0.5; *dcl* = 0.44; *sctl* = 1.89; *sterno* = 0.8; *presctl* = 0.56; *orbito* = 1.8; *dcp* = 0.2; *sctlp* = 0.85; *C* = 2.5; *4c* = 0.88; *4V* = 1.53; *5x* = 1.47; *ac* = 5.2; *M* = 0.47; *C3F* = 1.0; *arb* = 8/4.

Female unknown.

Distribution. – Indonesia (Kalimantan).

Relationship. – New species is related to *S. (O.) convergens* in external morphology but differs from it in having of aedeagus without hair crown (with numerous acuted processes in *convergens*), surstylus without chitinized prensisetae (with 2 strongly chitinized prensisetae in *convergens*). On the other hand, *S. (O.) watabei*, sp. n. resembles *S. (O.) adentata* in having of quite similar shape of aedeagus but easily distinguished from the later by shape of surstylus.

Etymology. – This species is named in honor of Prof. Hide-aki Watabe (Hokkaido University of Education, Sapporo, Japan), the famous expert in drosophilid taxonomy.

Stegana (Steganina) chitouensis, sp. n. (figs. 19-23)

Type material. – **Holotype male**, Taiwan, Chitou, ex underside of fallen logs, 22-IV-1997 (*M. J. Toda*). – **Paratype** : female, the same label as holotype (EHU).

Diagnosis. – Cercus (fig. 19) elongated, somewhat broadened subventrally. Surstylus crescent, with *ca.* 28 long setae in deeply concave row.

Male and **female**. Body length *ca.* 3.0 (3.3 in paratype) mm. Thorax length 1.5 (1.6) mm. *Head*. Eye dark red. Ocellar triangle black; ocelli reddish; ocellar setae long. Frontal vitta yellowish brown, dark brown anteriorly. Fronto-orbital plate dark brown. Face brownish black in upper and lower parts, yellow medially. Facial carina low and broad, slightly prominent in upper part. Clypeus brownish black. Gena yellow, dark brown at base of vibrissa. Pedicel yellowish brown; 1st flagellomere darker; terminal bifurcation of arista small. Subvibrissa not differentiated, as long as other orals. Palpi yellow basally, dark brown apically, with 1 subapical seta and *ca.* 8 ventral ones.

Thorax. Scutum and scutellum dark brown. Postpronotal lobe dark brown; postpronotal seta 1, long. Acrostichal setulae in 8-10 irregular rows. Mesopleuron pale yellow, with 2 broad dark brown longitudinal stripes. Basal scutellar setae divergent, apical convergent and crossed. Wing dark brown, paler posteriorly. Halter pale brown. Legs : apical 1/3 of femur, basal 2/3 of tibia and 1/2 of metatarsus yellowish brown. Apical and preapical dorsal setae on all tibiae. Fore and hind 1st tarsomeres as long as 4 succeeding segments together.

Abdomen. Tergites dark brown. Sternites brown. Pleural membrane pale yellow.

Male terminalia. Epandrium (fig. 19) rounded ventrally, pubescent, with *ca.* 17 setae (excluding anterior and ventral parts). Cercus pubescent dorsally, with *ca.* 25 setae. Surstylus with stout setae situated along the caudal margin and 1 strongly chitinized prensiseta ventrally as well as 11-12 long setae on inner surface. Aedeagus (figs. 20, 21) deeply bilobed, with 4 finger–like pointed processes and numerous sharply acuted setae. Basal aedeagal processes strongly chitinized, pointed and directed dorsally (in lateral view). Aedeagal apodeme rod-like, strongly chitinized and articulated with aedeagus. Paramere semicircular, flattened, with *ca.* 6-7 short sensillae situated nearly in straight row. Gonopods strongly chitinized, saddle-shaped. Hypandrial lobe broad, strongly chitinized. Decasternum narrow, with 2 rounded paramedial and medial triangular processes

Female terminalia. Cercus semicircular, not pubescent. Hypoproct with long setae, lateral ones more shorter. Oviscapt (fig. 22) with 3-4 irregular rows of tooth-like spinules and *ca.* 6-7 setae on each side. Spermatheca (fig. 23) oval. Spermathecal duct not introverted into the capsule.

Measurements. WL = 2.1 (2.5 in paratype) mm. WW = 1.1 (1.6) mm.

Indices. FW/HW = 0.43 (0.37); *ch/o* = 0.09; *prorb* = 0.91 (1.07); *rcorb* = 0.8 (0.66); *vb* = 0.33 (0.25); *dcl* = 0.43 (0.41); *sctl* = 1.22 (1.31); *sterno* = 0.89 (0.84); *presctl* = 0.46 (0.62); *orbito* = 2.25 (2.15); *dcp* = 0.21 (0.32); *sctlp* = 1.0 (0.92); *C* = 1.88 (2.03); *4c* = 1.38 (1.3); *4V* = 1.96 (1.9); *5x* = 1.27 (1.0); *ac* = 13.2 (11.14); *M* = 0.58 (0.63); *C3F* = 0.58 (0.6); *arb* = 8/6.

Distribution. - Taiwan.

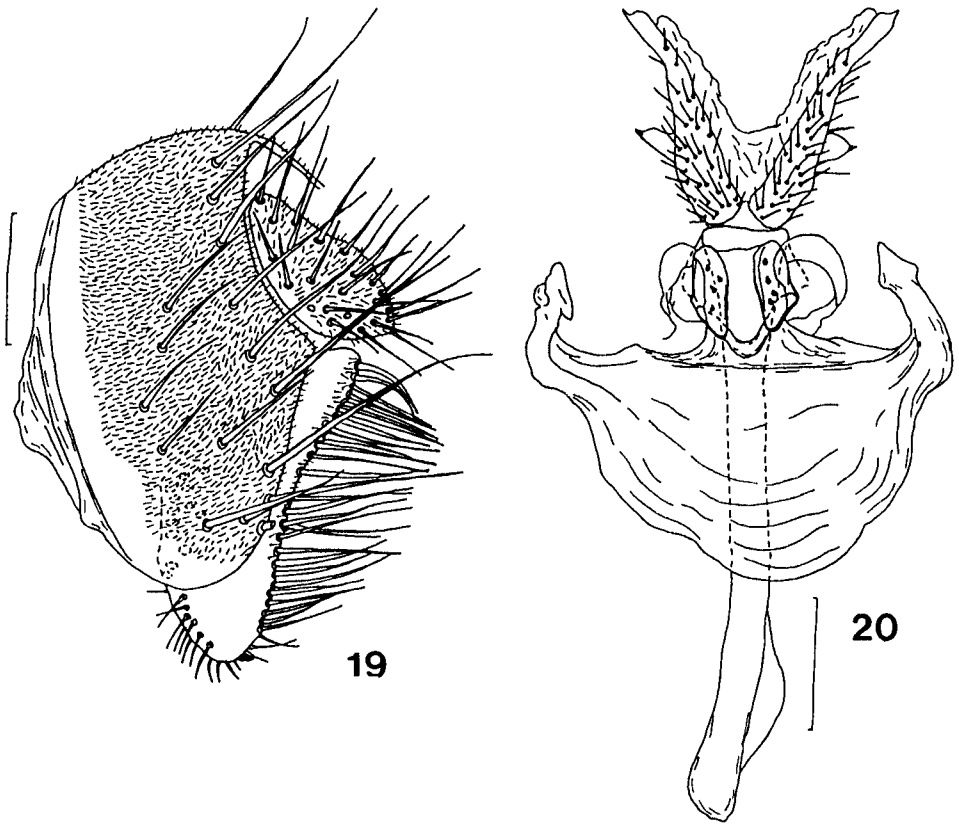

Fig. 19 to 20, *Stegana (Steganina) chitouensis*, sp. n. – 19, male terminalia (lateral view). – 20, phallic organs (ventral view). (Scale-line = 0.1 mm).

Relationship. – New species is closely related to *S. (S.) vietnamensis* in shape of male terminalia (figs. 24, 25) but differs from the later in number of finger–like processes of aedeagus (5 in *vietnamensis*), long setae on surstylus (*ca.* 22 in *vietnamensis*) as well as by shape of cercus and epandrium (somewhat quadrate ventrally in *vietnamensis*).

Etymology. – Toponym. Pertaining to the type locality.

Stegana (Pseudostegana) grandipalpis Takada & Momma, 1975 (figs. 26-29)

Stegana (Parastegana) grandipalpis Takada & Momma, 1975, *J. Fac. Sci. Hokkaido Univ., VI*, **20** : 12.
Stegana (Pseudostegana) grandipalpis : Okada, 1978, *Kontyû*, **46** : 393.

Female terminalia. 7th tergite (fig. 26) nearly entirely pubescent, not constricted dorsally. 7th sternite nearly quadrate, pubescent. 8th tergite slightly elongated below, pubescent. Epiproct absent. Cercus

(fig. 27) closely situated or fused to each other, pubescent, with *ca.* 14 setae, apical one longest. Oviscapt (fig. 28) deeply bilobed into 2 lateral lobes connected by narrow bridge, nearly entirely pubescent and with *ca.* 20 setae on each lobe. Spermatheca (fig. 29) sack-shaped, without apical indentation. Spermathecal duct not introverted into capsule.

Material examined. – Female, Cameron Highland, Malaya, 27-X-1975 (*S. Shinonaga*)/ *Stegana (Pseudostegana) grandipalpis* Okad. 1978/ female (Okada's handwriting) (collection of T. Okada).

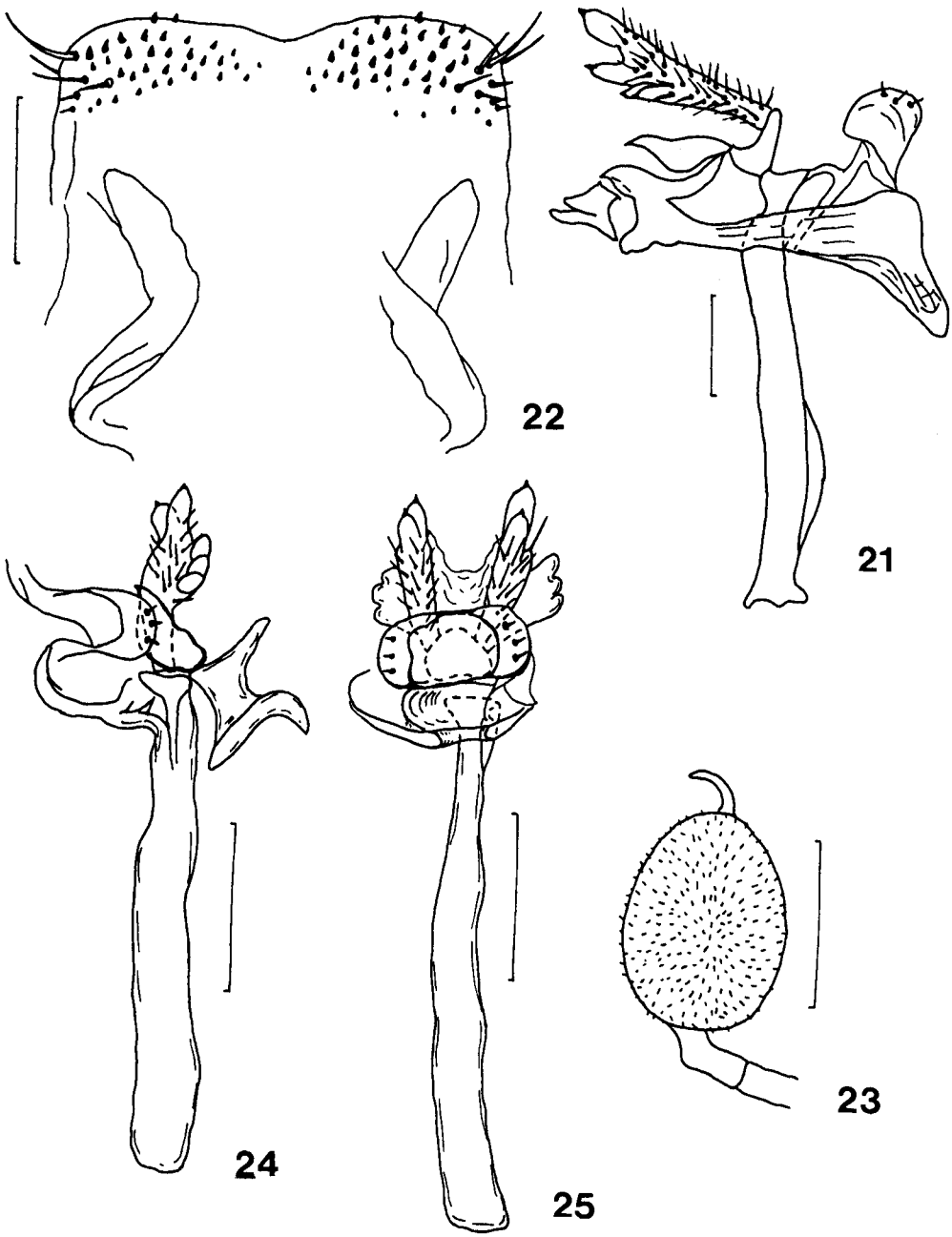

Fig. 21 to 23, *Stegana (Steganina) chitouensis*, sp. n. – Fig. 24 and 25, *Stegana (Steganina) vietnamensis* Sidorenko, 1997. – 21, 24 and 25, male terminalia (lateral and ventral view). – 22, oviscapt (ventral view). – spermatheca (lateral view). (Scale-line = 0.1 mm).

Stegana (Steganina) belokobylskiji Sidorenko, 1997, **comb. n.**

Stegana (Oxyphortica) belokobylskiji Sidorenko, 1997, *Ann. Soc. Entomol. Fr. (N. S.)*, **33** : 66.

Remarks. – This species was erroneously described in the subgenus *Oxyphortica*, because some external morphological characters of Asian species of the subgenus

Steganina are similar to that in *Oxyphortica'* species i. e. face and frons sometimes more or less rectangular in lateral view and width of postgena rather variable. The most important character to separate these subgenera is position of longest axis of eyes to body axis.

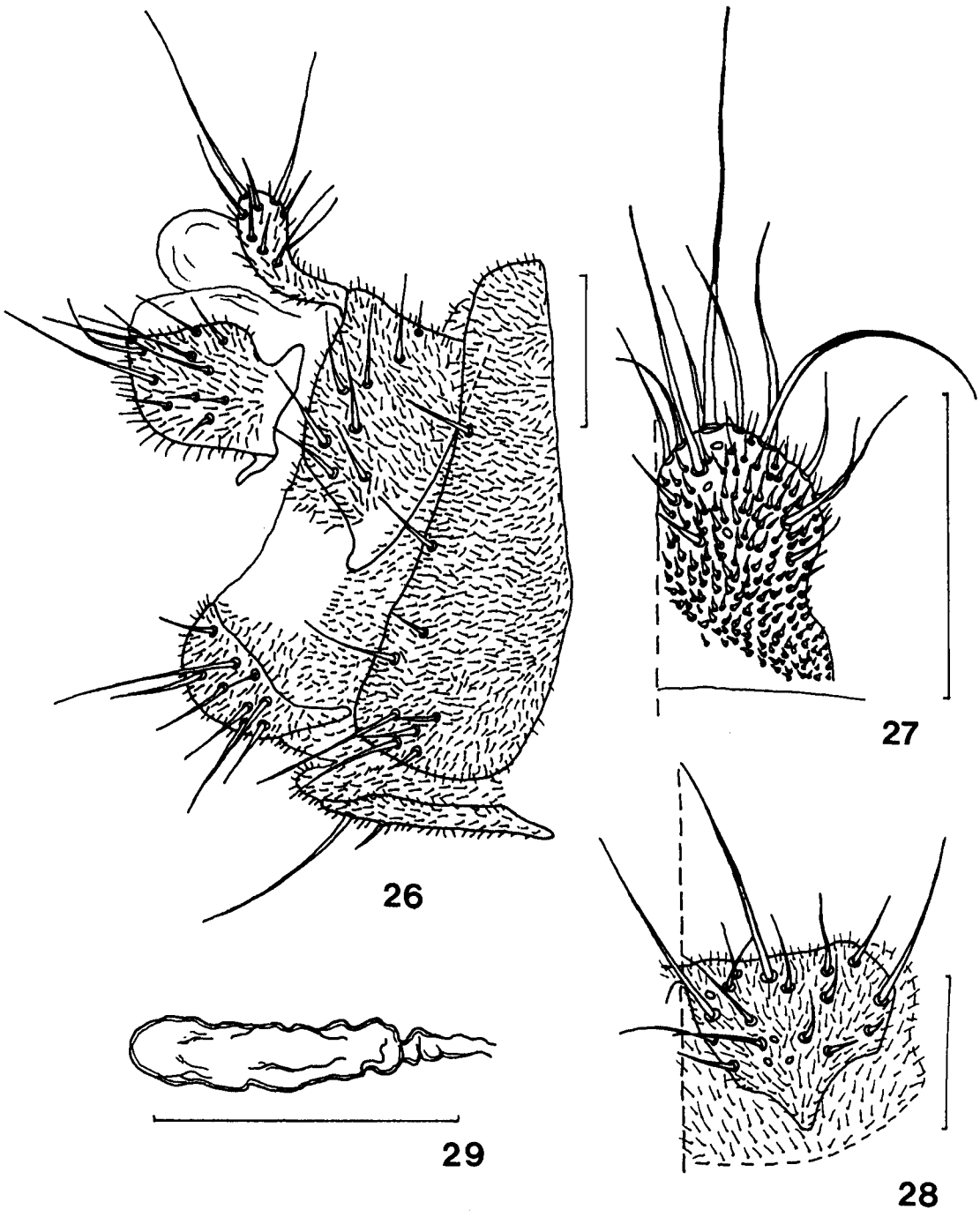

Fig. 26 to 29, *Stegana (Pseudostegana) grandipalpis* Takada & Momma, 1975. – 26, female terminalia (lateral view). – 27, cercus (right side, dorsal view). – 28, oviscapt (right side, ventral view). – 29, spermatheca (lateral view). (Scale-line = 0.1 mm). (Scale-line = 0.1 mm).

Stegana (Steganina) vietnamensis Sidorenko, 1997, **comb. n.** (figs. 24-25)

Stegana (Oxyphortica) vietnamensis Sidorenko, 1997, *Ann. Soc. Entomol. Fr. (N. S.)*, **33** : 67.

Remarks. – This species also was erroneously described in the subgenus *Oxyphortica* but must be replace to the subgenus *Steganina*.

Stegana (Steganina) undulata de Meijere, 1911

Stegana undulata de Meijere, 1911, *Tijd. Entomol.*, **54** : 419.
Stegana undulata : Duda, 1924, *Arch. Naturg.*, **90A3** : 182.
Stegana (Steganina) undulata : Okada, 1971, *Mushi*, **45** : 87.
Stegana (Stegana) undulata : Sidorenko & Okada, 1991, *Jpn. J. Entomol.*, **59** : 659.
Stegana (Steganina) undulata : Okada & Sidorenko, 1992, *Jpn. J. Entomol.*, **60** : 424.

Material examined. – Male, Bogor, Java, 27-VII-1971 (*T. Okada*)/ Perinet, Madagascar, 10-IX-1971 (*H. Ikeda*)/ Photo (unknown handwriting)/ 12003 male *Stegana (Steganina) undulata* de Meij., 1911 (Okada's handwriting); 13 males, 5 females, Bogor, Java, 8-XII-1996, ex underside of fallen logs (*M. J. Toda*); male, Pontianak, West Kalimantan, 7-XII-1996, ex underside of fallen logs (*M. J. Toda*) (collection of T. Okada and EHU).

Distribution. – Sumatra, Java, Kalimantan

Remarks. – We (Sidorenko & Okada, 1991) included *S. undulata* in the subgenus *Stegana* and figured the male genitalia based on single male specimen from Java but later (Okada & Sidorenko, 1992) replaced this species into the subgenus *Steganina* without any discussion. I had a chance to re-examined this specimens as well as to study some additional material collected at the same place. Specimen mentioned in our paper (Sidorenko & Okada, 1991) is mixture of two different species. It has two different labels: first from Java and another one from Madagascar. Specimen is female and belongs to undescribed species of the subgenus *Stegana* from Africa but slide preparation of male genitalia belongs to species of the subgenus *Steganina*. Slide preparation had handwriting of T. Okada: "12003 male *Stegana (Steganina) undulata*, Bogor, Java 1971 27-VII-1971 (*T. Okada*)". I not found any differences between slide preparation and figures (Sidorenko & Okada, 1991). There is difference in collection date only. According to our first joint report, specimen was collected 27-VI-1971 but regarding to label it was collected one month later. After examination of additional material from Java and Kalimantan, I consider that *S. undulata* must be placed in the subgenus *Steganina*.

Stegana (Oxyphortica) adentata Toda & Peng, 1992

Stegana (Oxyphortica) adentata Toda & Peng, 1992, *Ann. Soc. Entomol. Fr. (N. S.)*, **28** : 210.

Material examined. – Male, Viet Nam, prov. Ha Son Binh, Mai Chou, forest, 2-XI-1990 (*E. Nartshuk*) (ZISP).

Distribution. – Viet Nam* (new record); S. China (Guangdong).

Stegana (Oxyphortica) convergens (de Meijere, 1911)

Drosophila convergens de Meijere, 1911, *Tijd. Entomol.*, **54** : 400.
Orthostegana convergens : Hendel, 1914, *Suppl. Entomol.*, **3** : 115.
Stegana convergens : Sturtevant, 1921, *Carn. Inst. Publ.*, **301** : 135.
Oxyphortica convergens : Duda, 1924, *Arch. Naturg.*, **90A3** : 182.
Stegana (Oxyphortica) convergens : Okada, 1971, *Mushi*, **45** : 90.

Material examined. – Viet Nam: 13 males, 14 females, prov. Ha Son Binh, Ky Son, Cao Phong, 19, 25-28, 31-X-1990 (*E. Nartshuk, S. Belokobylskij, Eu. Sugonjaev*); 6 males, 6 females, prov. Ha Son Binh, Mai Chou, forest, 1/4-XI-1990 (*E. Nartshuk, S. Belokobylskij, A. Gorokhov*); 2 males, prov. Hanoi, 70 km NW Hanoi, Ba Vi, 400 m, forest, 24-XI-1990 (*E. Nartshuk*). Taiwan: 45 males, 38 females, Kuantzuling, Tainan Hsien, 7-IV-1965 (*T. Saigusa*)/ 1. 21. 50/ male *Stegana (Oxyphortica) convergens* (de Meijere, 1911) (Okada's handwriting); Kuang-tzwin, 28/4-V-1971 (*K. Kanmiya*)/ 1. 22 50/ male *Stegana (Oxyphortica) convergens* (de Meijere, 1911) (Okada's handwriting); Chitou, 2-IX-1992 (*M. Kimura*); Kanting, ex tree trunks, 19/20-X-1992 (*M.J. Toda*) (collection of T. Okada, EHU, IBP and ZISP).

Distribution. – Viet Nam* (new record); Taiwan, Borneo, Java, New Guinea.

Stegana (Steganina) ornatipes Wheeler & Takada, 1964

Stegana ornatipes Wheeler & Takada, 1964, *Ins. Micronesia*, **14** : 253.
Stegana (Steganina) ornatipes : OKADA, 1971, *Mushi*, **45** : 81.

Material examined. – 9 males, 8 females, Taiwan : Wulai, by sweeping, 7-X-1992 (*M. J. Toda*); Kanting, by sweeping, 19-X-1992 (*M.J. Toda*) (EHU).

Distribution. – Taiwan* (new record); Okinawa, Caroline Is.

Key to the Asian species of the genus *Stegana*

1. Scutellum nearly flat and marginally ridged. Middle tibia with a few strong acutely pointed setae on dorsoproximal surface. Prescutellar setae well developed. Wing dark brown or black. Posterior reclinate orbital seta nearer to inner vertical than proclinate orbital 2
– Scutellum dorsally convexed and marginally not ridged. Middle tibia without strong acutely pointed setae on dorsoproximal surface. Prescutellar setae undeveloped or slightly developed. Wing hyaline with or without black patches. Posterior reclinate orbital seta nearer to proclinate orbital than inner vertical 4
2. Postgena narrow and linear. Wing not curved down in resting position. Face unicolorous 5
– Postgena broad. Wing curved down in resting position. Face with or without black bands. 3
3. The greatest diameter of eyes oblique to body axis. Face with black bands. (***Steganina*** Wheeler) 16
– The greatest diameter of eyes perpendicular to body axis. Face nearly unicolorous. (***Stegana*** Meigen) 43
4. Postvertical setae present. Frontal triangle obscure. (***Parastegana*** Okada) 56
– Postvertical setae absent. Frontal triangle distinct, parallel-sided. (***Pseudostegana*** Okada) 58
5. M_{1+2} distally strongly curved forward. Mesopleuron with 2 dark longitudinal stripes. (***Orthostegana*** Hendel). Taiwan ..... ***S. (O.) curvinervis*** (Hendel)
– M_{1+2} distally weakly curved forward. Mesopleuron usually with 1 dark longitudinal stripe. (***Oxyphortica*** Duda) 6
6. Surstylus with 1 or more strongly chitinized prensisetae 7
– Surstylus setigerous, without chitinized prensisetae 12
7. Aedeagus with hair crown or acuted tentacle-like processes 8
– Aedeagus without hair crown or tentacle-like processes 10
8. Surstylus with 1 prensiseta. Viet Nam ..... ***S. (O.) maichouensis***, sp. n.
– Surstylus with 2 prensisetae 9
9. Aedeagus with long acuted tentacle-like processes. Aedeagal apodeme as long as aedeagus. Paramere with short sensillae. Taiwan, Viet Nam, Borneo, Java, New Guinea..... ***S. (O.) convergens*** (de Meijere)
– Aedeagus with short hair crown. Aedeagal apodeme in 2 times longer than aedeagus. Paramere without sensillae. China ..... ***S. (O.) setifrons*** Sidorenko
10. Surstylus with prensisetae. China ..... ***S. (O.) meichiensis*** Chen & Toda
– Surstylus with 1 prensisetae 11
11. Surstylus concave. Sri Lanka ..... ***S. (O.) subconvergens*** Okada
– Surstylus almost quadrate. Myanmar ..... ***S. (O.) pyinoolwinensis*** Sidorenko
12. Cercus with numerous small chitinized spinules, without setae. Myanmar ..... ***S. (O.) burmensis*** Sidorenko
– Cercus setigerous, without small spinules 13
13. Surstylus with prominent dorsal process. Japan, Korea, Taiwan ..... ***S. (O.) nigripennis*** (Hendel)
– Surstylus without dorsal process 14
14. Aedeagus narrowed dorsoventrally, apically bilobed. Viet Nam ..... ***S. (O.) enigma***, sp. n.
– Aedeagus not narrowed dorsoventrally, apically not bilobed 15
15. Surstylus almost quadrate, without long setae basally. Aedeagus with acuted lateral processes. Indonesia ..... ***S. (O.) watabei***, sp. n.
– Surstylus elongated, with *ca.* 4 long setae basally. Aedeagus without acuted lateral processes. China ..... ***S. (O.) adentata*** Toda & Peng

16. Surstylus deeply excavated distally, with 1 subapical or apical prensisetae. Gonopods usually narrower than hypandrium, with short or moderate lateral processes 17
– Surstylus globular, crescent or somewhat quadrate, not deeply excavated distally, with or without strongly chitinized prensisetae. Gonopods as wide as or wider than hypandrium 25
17. Body size large; wing length more than 3.4 mm 18
– Body size small; wing length less than 3.1 mm 19
18. Surstylus somewhat broadened apically. Aedeagus apically not broadened, almost parallel-sided. Anterior lobe of hypandrium triangle. Europe, Russia (from european part to Far East) ..... ***S. (S.) hypoleuca*** Meigen
– Surstylus somewhat narrowed apically. Aedeagus apically broadened. Anterior lobe of hypandrium almost parallel-sided, narrow. Japa ..... ***S. (S.) toyaensis*** Okada & Sidorenko
19. Surstylus very broad, apically rounded. Russia (Far East) ..... ***S. (S.) sidorenkoi*** Hu & Toda
– Surstylus not broadened, strongly curved inward 20
20. Aedeagus widened proximally, constricted at junction to apodeme. Europe, Russia, Japan ..... ***S. (S.) baechlii*** Laštovka & Máca
– Aedeagus proximally not wider than distally, smoothly passing into apodeme 21
21. Surstylus distally narrowed 22
– Surstylus distally not narrowed, apically more or less truncate 23
22. Mesonotum and most of wing veins brownish black to black. Basal width of hypandrial apodeme *ca.* 1/3 of hypandrial width. Gonopods parallel-sided, no longer than wide, without posterior processes. Europe, Russia (from european part to Far East), Canada, USA ..... ***S. (S.) coleoptrata*** (Scopoli)
– Body and wing veins yellowish brown to brown. Hypandrial apodeme nearly as wide as hypandrium itself. Gonopods triangularly elongated, much longer than wide, medially with short posterior processes. Europe, Russia, NE China, Japan ..... ***S. (S.) longifibula*** Takada
23. Scutum nearly entirely yellowish brown to brown or with obscure dark longitudinal stripes. Surstylus apically somewhat truncate. Paramere absent. Europe, Russia, Korea, China, Japan, Taiwan ..... ***S. (S.) nigrithorax*** Strobl
– Scutum with distinct dark longitudinal stripes. Surstylus apically somewhat narrowing. Paramere present 24
24. Apodeme of epandrium large. Paramere small, oval. Anterior lobe of hypandrium parallel-sided. Russia (Far East), China ..... ***S. (S.) xuei*** Hu & Toda
– Apodeme of epandrium small or absent. Paramere large, apically broadened. Anterior lobe of hypandrium narrowed anteriorly. India ..... ***S. (S.) subexcavata*** Vaidya & Godbole
25. Surstylus without prensisetae 26
– Surstylus with strongly chitinized prensisetae 31
26. Aedeagus with hair crown or tentacle-like processes 27
– Aedeagus without hair crown or tentacle-like processes 29
27. *Ac*-index = 20.0 or more. India ..... ***S. (S.) penihexata*** Gupta & Panigrahy
– *Ac*-index = 15.0 or less 28
28. Aedeagus with curved serrated lateral processes. Myanmar ..... ***S. (S.) maymyo*** Sidorenko
– Aedeagus without curved serrated lateral processes. Japan, Taiwan ..... ***S. (S.) kanmiyai*** Okada & Sidorenko
29. *Ac*-index = 20.0 or more. Taiwan, Sumatra, Java ..... ***S. (S.) nigrifrons*** de Meijere
– *Ac*-index = 15.0 or less 30
30. Facial carina low and short, slightly prominent in upper part. Paramere serrated. Papua New Guinea ..... ***S. (S.) papuana*** Okada & Sidorenko
– Facial carina high and long. Paramere not serrated. Sri Lanka ..... ***S. (S.) castanea*** Okada
31. Surstylus with 1 chitinized prensiseta 32
– Surstylus with 3 or more chitinized prensisetae 40
32. Aedeagus deeply bilobed, with or without apically acuted basal processes 33
– Aedeagus tube-like, slightly bilobed apically, without pointed basal processes 35
33. Surstylus complicated, with long finger-like chitinized prensiseta subventrally. Acutely pointed aedeagal basal processes present ..... ***S. (S.) belokobylskiji*** Sidorenko
– Surstylus crescent, without long finger-like chitinized prensiseta. Acutely pointed aedeagal basal processes absent 34
34. Clypeus yellow. Surstylus with *ca.* 21 long setae situated along caudal margin and *ca.* 7 ones on inner surface. Paramere with 3 sensillae. Viet Nam ..... ***S. (S.) vietnamensis*** Sidorenko
– Clypeus brownish black. Surstylus with *ca.* 28 long setae situated along caudal margin and *ca.* 11-12 ones on inner surface. Paramere with *ca.* 6-7 sensillae. Taiwan .... ***S. (S.) chitouensis***, sp. n.

35. Aedeagus with hair crown or tentacle-like processes 36
– Aedeagus without hair crown or tentacle-like processes 38
36. Scutum with distinct dark longitudinal stripes. Gonopods without curved chitinized processes 37
– Scutum unicolorous, without dark longitudinal stripes. Gonopods with curved chitinized processes. Ryukyu Is, Taiwan, Micronesia ..... ***S. (S.) ornatipes*** Wheeler & Takada
37. Clypeus black. Scutellum unicolorous. Anterior lobe of hypandrium narrower than hypandrium. Sumatra, Java, Kalimantan ..... ***S. (S.) undulata*** de Meijere
– Clypeus yellowish. Scutellum with more paler parts apically and distally. Anterior lobe of hypandrium as wide as hypandrium. Japan ..... ***S. (S.) unidentata*** Takada
38. *Ac*-index = 17.0 or more. Apodeme of epandrium short 39
– *Ac*-index = 15.0 or less. Apodeme of epandrium long. Japan, Java ..... ***S. (S.) scutellata*** de Meijere
39. Anterior lobe of hypandrium narrower than hypandrium. Epandrium narrowed dorsally. Myanmar ..... ***S. (S.) moritha*** Sidorenko
– Anterior lobe of hypandrium as wide as hypandrium. Epandrium dorsally not narrowed. Japan ..... ***S. (S.) izu*** Sidorenko
40. Aedeagus tube-like, with hair crown or tentacle-like processes. Surstylus with 3-7 prensisetae arranged in more or less regular row 41
– Aedeagus deeply bilobed, without hair crown or tentacle-like processes. Surstylus with more than 7 prensisetae arranged in irregular rows. China, Taiwan ..... ***S. (S.) nigrolimbata*** Duda
41. Surstylus slightly excavated dorsally. Body size large; wing length 4.0 mm 42
– Surstylus not excavated dorsally, more or less globular. Body size small; wing length less than 3.3 mm. Taiwan, India ..... ***S. (S.) shirozui*** Okada
42. Clypeus black. 3rd to 5th sternites very wide, twice or more wider than long. Surstylus with 3-5 prensisetae. Russia (Far East), China, Japan..... ***S. (S.) masanoritodai*** Okada & Sidorenko
– Clypeus yellow. 3rd to 5th sternites not so wide, less than twice wider than long. Surstylus with 7 prensisetae. Russia (Far East), China, Korea, Japan ..... ***S. (S.) ctenaria*** Nishiharu
43. Scutum yellowish brown to black 44
– Scutum yellow 49
44. Surstylus with strongly chitinized tooth or short chitinized prensisetae 45
– Surstylus setigerous, without chitinized prensisetae 48
45. Surstylus with a row of short chitinized prensisetae. China ..... ***S. (S.) emeiensis*** Sidorenko
– Surstylus with 1 or 2 tooth 46
46. Surstylus with 1 chitinized teeth. Taiwan, Viet Nam ..... ***S. (S.) antlia*** Okada
– Surstylus with 2 chitinized tooth 47
47. Middle and hind tibiae black. Europe, Russia, Kazakhstan, Mongolia ..... ***S. (S.) furta*** (Linnaeus)
– Middle and hind tibiae yellow. Russia (Far East), Korea, Japan ..... ***S. (S.) taba*** Okada
48. Aedeagus ventrally with several chitinized spines. Taiwan ..... ***S. (S.) taiwana*** Okada
– Aedeagus ventrally without chitinized spines. Viet Nam ..... ***S. (S.) nartshukae*** Sidorenko
49. 1st flagellomere yellow to yellowish brown 50
– 1st flagellomere black. Buru I ..... ***S. (S.) annulosa*** (Duda)
50. Palpus black 51
– Palpus yellow 55
51. Mesopleuron with 2 longitudinal dark brown bands 52
– Mesopleuron with 1 longitudinal dark brown band 54
52. Scutum with 1-2 brownish black longitudinal bands 53
– Scutum without brownish black longitudinal bands. Sumatra, Java, Sri Lanka..... ***S. (S.) laterals*** Wulp
53. Aedeagus broadened subapically, with hair crown. China ..... ***S. (S.) cheni*** Sidorenko
– Aedeagus more or less parallel-sided, without hair crown or tentacle-like processes. China ..... ***S. (S.) zhangi*** Sidorenko
54. *C*-index = 2.0; *4V*-index = 2.0. China ..... ***S. (S.) sinica*** Sidorenko
– *C*-index = 2.7; *4V*-index = 2.8. Russia (Far East) ..... ***S. (S.) sibirica*** (Duda)
55. Surstylus narrow, crescent. India ..... ***S. (S.) crescentica*** Gupta & Panigrahy
– Surstylus more wider, semicircular. Russia (Far East), Japan ..... ***S. (S.) singularis*** Sidorenko
56. Wing with prominent black patches. Surstylus large 57
– Wing without black patches. Surstylus small. China, Taiwan ..... ***S. (P.) femorata*** (Duda)
57. Surstylus with finger-like process. Taiwan ..... ***S. (P.) maculipennis*** Okada
– Surstylus without finger-like process. China ..... ***S. (P.) drosophiloides*** Toda & Peng
58. Basal processes of aedeagus present 62
– Basal processes of aedeagus absent 59

59. Paramedial setae present 60
– Paramedial setae absent 61
60. Black patch on vein M_{1+2} present. Philippines ..... ***S. (P.) hirta*** Okada
– Black patch on vein M_{1+2} absent. New Guinea ..... ***S. (P.) lineoparma*** Okada
61. All crossveins clouded. Malaya ..... ***S. (P.) malayana*** Okada
– Only posterior crossvein clouded. Java ..... ***S. (P.) javana*** Okada
62. Basal transverse black band interrupted 63
– Black transverse black band not interrupted 67
63. Anterior crossvein clouded 64
– Anterior crossvein not clouded 65
64. Palpus very broad. Dorsal margin of aedeagus somewhat triangle.Taiwan ..... ***S. (P.) latipalpis***, sp. n.
– Palpus not broad. Dorsal margin of aedeagus somewhat quadrate. Viet Nam, Borneo ..... ***S. (P.) fleximediata*** Takada, Momma & Shima
65. Black patch on vein M_{1+2} present. Malaya ..... ***S. (P.) grandipalpis*** Takada & Momma
– Black patch on vein M_{1+2} absent 66
66. Black stripe on vein CuA_1 present. Philippines ..... ***S. (P.) campanularia*** Okada
– Black stripe on vein CuA_1 absent. New Guinea ..... ***S. (P.) zonaria*** Okada
67. Median black band narrower than distance between anterior and posterior crossveins. Philippines, New Guinea ..... ***S. (P.) latiparma*** Okada
– Median black band as broad as distance between anterior and posterior crossveins 68
68. Black stripe on vein CuA_1 present. Costal cell black. Borneo ..... ***S. (P.) lacrymaria*** Okada
– Black stripe on vein CuA_1 absent. Costal cell clear 69
69. Black patch on vein M_{1+2} present. Philippines ..... ***S. (P.) albinotata*** Okada
– Black patch on vein M_{1+2} absent. Philippines ..... ***S. (P.) latizonaria*** Okada

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