

REVISION OF THE ORIENTAL GENERA OF
PLASTOTEPHRITINAE (DIPTERA:
PLATYSTOMATIDAE)

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The Oriental genera and species of Plastotephritinae (Diptera: Platystomatidae) are revised. A key to genera in the Oriental Region is provided and diagnoses are given for the only two genera known to occur there, namely *Agadasys* gen. n. and *Rhegmatosaga* Frey, 1930. One new species, *Agadasys hexablepharis* sp. n. is described. Only seventeen specimens are available for this subfamily from the Oriental Region. The scarcity of the material available is thought to be a result of low collecting effort rather than due to scarcity, since collecting localities are widely distributed.

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Little attention has been given to the Platystomatidae subfamily Plastotephritinae on a world-wide basis since Hendel (1914a, b), Enderlein (1922, 1924) and Frey (1932). Most species are distributed in the Afrotropical Region and the Oriental fauna of this subfamily is small and consequently there has been no Oriental revision, nor much need for one.

Frey (1930) described *Rhegmatosaga insignis* and later (1932) included *Rhegmatosaga* in his key to the African genera of the Plastotephritinae. *R. insignis* was correctly synonymised with *Noeeta latiuscula* (Walker, 1856) by Hardy (1959). The genus was again mentioned by Steyskal in the Catalog of the Diptera of the Oriental Region (Steyskal in Delfinado & Hardy 1977), listing the single nominate species *R. latiuscula*. Here, Steyskal also listed an unnamed species from South Vietnam and Thailand, based on information from D.K. McAlpine at the Australian Museum.

As part of a wider revision of the subfamily Plastotephritinae, large amounts of undetermined material have now been examined and the results are ready for presentation. The provenance of most of this material is Afrotropical and will be presented in a series of papers discussing the fauna of that region. Nevertheless, the scarcity of material coming from the Oriental region is remarkable. There are only 17 specimens known for the Plastotephritinae from eight

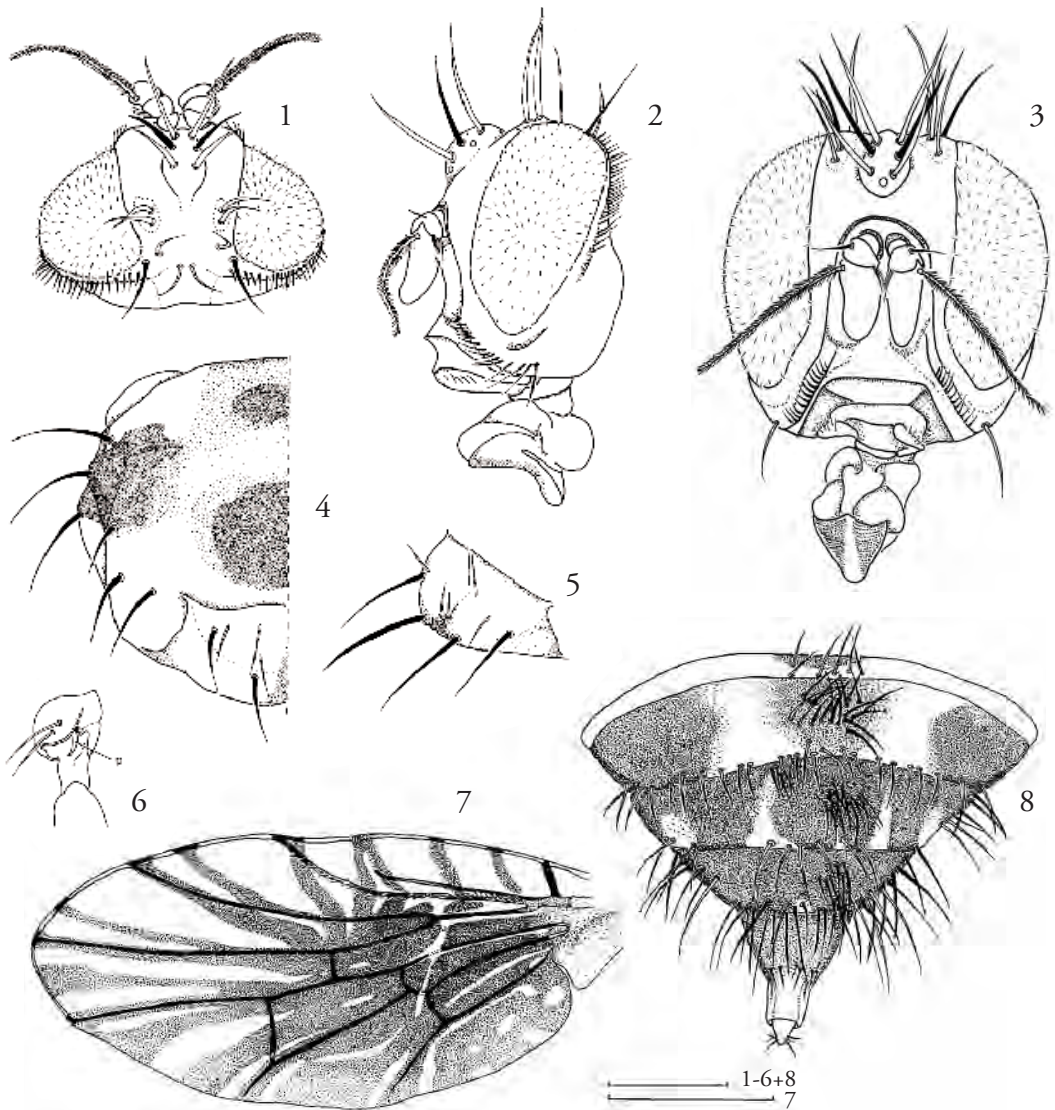
different localities and held in five institutions. It is possible that this is partly caused by low collecting effort and difficulties arising in sorting specimens of Plastotephritinae from other subfamilies and families.

Examination of these few specimens has led to the recognition of a new genus, described here. To place this new genus in context and to make diagnosis of *Rhegmatosaga* clearer, a redescription of the latter genus is also included. The unnamed species from South Vietnam and Thailand (Steyskal in Delfinado & Hardy 1977) belongs in the new genus, although both genera are known from Vietnam. Thus, there are two genera in the Oriental Region, each with a single known species.

TECHNIQUES

Descriptions are based on primary type specimens. Bilaterally symmetrical features are described in the singular. Variable character states and measurement ranges, such as those of body and wing lengths, are listed under a separate heading. The measurement of body length excluded female ovipositors where these were excluded.

Terminology and abbreviations concerning gross morphology generally follow Crosskey (1984) and D. K. McAlpine (1973). Details of the post abdomen follows D. K. McAlpine (1973) and Munro (1947), with modification from Cumming et al. (1995). I



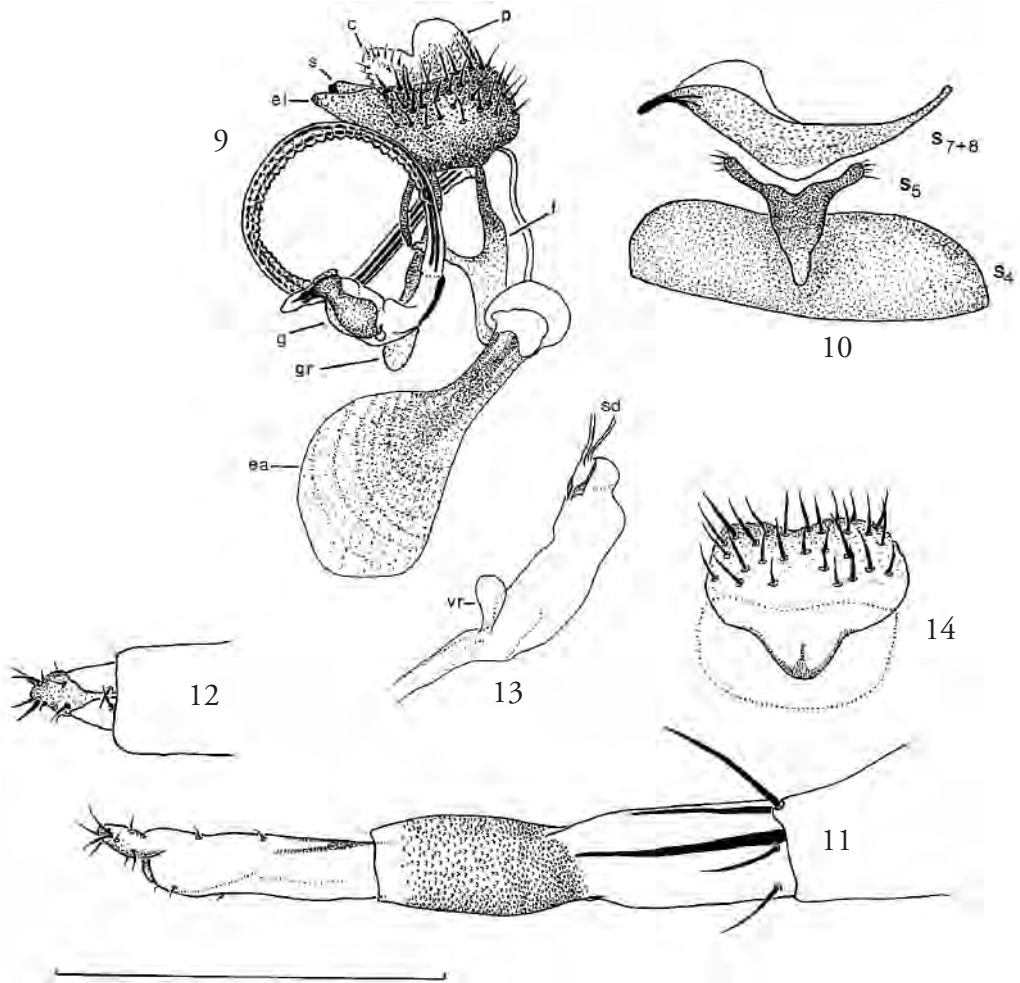
Figs. 1-8. *Agadasys hexablepharis* sp. n. – 1, head in dorsal view; 2, Head in lateral view; 3, head in frontal view; 4, left half of thorax in dorsal view; 5, scutellum viewed obliquely from the right; 6, left mid-coxa; 7, left wing in dorsal view; 8, abdomen in slightly oblique dorsal view. – Abbreviations: p, midcoxal prong. Scale bars = 1mm.

have followed J. F. McAlpine (1981) in the usage of meron for hypopleuron or meropleuron and subcutellum for postscutellum. Bristles are generally strongly developed, being considerably thicker and often differently coloured compared to the surrounding setulae. Usually bristles can be clearly separated from setulae in *Plastotephritinae*.

Drawings were made with the aid of a stereomicro-

scope and a drawing tube. Only bristles and major setulae were illustrated, with the result that illustrations for the new genus appear less setose than the specimens.

After suitable relaxation of the specimens, genitalia were dissected and then cleared in hot potassium hydroxide for about ten minutes, rinsed in 70% alcohol, viewed and then stored in glycerine. The male



Figs. 9-14. *Agadasys hexablepharis* sp. n. postabdominal structures - 9, male genitalia in lateral view; 10, internal view of terminal sternites of male genitalia; 11, female genitalia in lateral view; 12, apex of aculeus in ventral view; 13, female internal genital tract; 14, sternite 6 of the female in ventral view, dotted line shows position of S_5 (removed). - Abbreviations: c = cercus; ea = ejaculatory apodeme; el = epandrial lobe; f = fultella; g = glans; gr = genital ring; p = proctiger; S + number = sternite; s = surtylus; sd = spermathecal ducts; vr = ventral receptacle. Scale bars = 1mm.

postabdomen is flexed to a position beneath tergite four and is thus inverted. The descriptions relate to the 'upright' position in which the cerci are in the dorsal position, rather than in the inverted ventral position. Furthermore, the illustrations were drawn with cerci in the dorsal position.

Specimens used in this paper were borrowed from the following institutions:

- AMSA Australian Museum, Sydney, Australia.
- BMNH The Natural History Museum, London, England.

- BPBM Bernice Pauahi Bishop Museum, Honolulu, U.S.A.
- MZHF University Zoological Museum, Helsinki, Finland
- USNM United States National Museum, Washington, U.S.A.

SUBFAMILY PLASTOTEPHRITINAE

Members of the subfamily Plastotephritinae can be differentiated from the other families of Platystomatiidae, by the following subset of characters:

- subcosta angled forward distally
- lower calypter reduced to a narrow, linear fringe along the post-alar wall
- tergites four and five of approximately the same length as tergite three in both sexes
- aedeagus having a glans (at least partly sclerotized) without terminal filaments; in some genera terminal claws and lobes are observed.
- female abdomen having tergite 6 absent or vestigial and concealed in a membranous fold below tergite five
- female aculeus variable between broad with an acute apex, and slender with a rounded apex.
- There is a tendency for the head to be flattened anteroposteriorly and the face to be concave and thrust forward at the buccal margin. Some genera of Trapherinae and Platystomatinae also have the head flattened and thrust forward, but these genera have the lower calypters distinctly lobed and, in some cases, have the face convex.

Although there is a major division in the Platotephritinae based on character states of the arista and vertical bristles, creating two tribes for this subfamily does not assist in clarifying the taxonomy further and thus seems pointless. To some extent various characters in genera such as *Rhegmatosaga* straddle the division. Nevertheless, the two Oriental genera can be easily separated by these characters as indicated in the following key. Although this is far from ideal, the real value of these characters will be apparent in the key to genera of the World (yet to be published).

1. Arista pubescent; inner and outer vertical bristles present *Agadasys* gen. n.
- Arista short plumose; outer vertical bristles present, inner vertical bristles reduced and hair-like, often indistinguishable from post-ocellars *Rhegmatosaga* (Frey, 1930)

Although this separation works for the two known Oriental genera, inclusion of new material from the this Region, may introduce conflicting characters and preclude its use in the future. The following key to genera is preferred, since it makes use of the diagnostic characters and will allow the reader to identify possible new genera.

KEY TO ORIENTAL GENERA

1. Fore and mid femora without a ventral row of short black bristles; eye distinctly haired (fig. 1); ocellar triangle elongate, strongly raised above frons, with three pairs of thick ocellar bristles (a white pair anterior to the lateral ocelli, a black pair above the lateral ocelli and a posterior white pair behind the median ocelli, fig. 1); two pairs of

- scutellar bristles (figs. 4, 5); abdomen sclerotized so that dried specimens retain their shape, densely covered in setulae, with distinct tufts of black setulae and with white setulae interspersed along the margins of the tergites (fig. 8) *Agadasys* gen. n.
- Fore and mid femora of males and fore femur of females having a ventral row of short black bristles (figs. 21, 22); eyes very finely setose (figs. 18-20); ocellar triangle short, its base sunken below the upper eye margin, with one pair of ocellar bristles; three pairs of scutellar bristles (fig. 20); abdomen weakly sclerotized, prone to collapse or to become misshapen in dried specimens, not unusually setose (fig. 25) *Rhegmatosaga* (Frey, 1930)

***Agadasys* gen. n.**
(figs. 1-17)

Type species: *Agadasys hexablepharis* sp. n. by monotypy.

Etymology

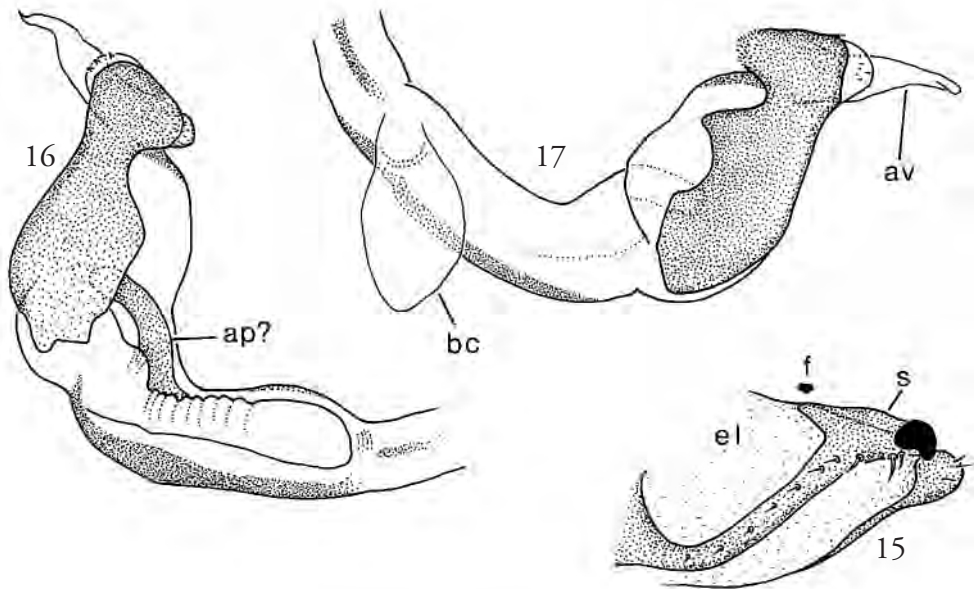
Aga derived from Greek *agan* – very or very much; Greek *dasy* (f) – shaggy, thickly haired; so named because of the three pairs of ocellar bristles and dense setulae on the abdomen. Gender feminine.

Diagnosis

Eye distinctly haired; ocellar triangle elongate, strongly raised above frons, with three pairs of thick ocellar bristles; two fronto-orbitals strongly thickened (in lateral view); two pairs of scutellar bristles; abdomen with heavy white and black setulae along the midline, interspersed with and longer than the long background setulae.

Description

Colour and pruinosity. – Ground colour predominantly pale creamy contrasting with grey-brown and dark brown markings on thoracic notum and pleurites and on abdominal tergites. Head: slightly darker and duller than ground colour, ptilinal hemisphere darker yellow than surrounding colour of frons; A.s.3 grey towards apex, arista pale buff, brown toward apex. Ventral half of palp brown. Scutellum yellowish cream. Pulvillae creamy-white. Wings hyaline; marked with dark brown superimposing a radial pattern over the veins (fig. 7); veins dark brown except costa, R₁ and basal portions which are pale brown to buff where membrane is hyaline. Calypter white. Halter pale creamy-white. Sternites brown, setose; pleurites membranous, pale cream. Male postabdomen: glossy brown. Pruinosity well defined, silver-grey; present in antennal grooves and lateral portions of vertex, but absent from remainder of face and me-



Figs. 15-17. *Agadasyx hexablepharis* sp. n. male postabdominal structures – 15, inner view of the left surstylus and epandrial lobe; 16, glans in lateral view from the left side; 17, glans in lateral view from the right side. Abbreviations: ap? = acophallus?; av = membranous apical vesicle; bc = basal caecum; el = epandrial lobe; f+ arrow = point of fusion between the epandrial lobe and the surstylus; s = surstylus. Scale bar = 0.5mm.

dian vertex posterior to ocellar triangle.

Head (fig. 1-3). – Subrectangular, face a little concave; buccal margin not extending to beyond level of apex of A.s.2. Ocellar triangle positioned anterior to fronto-orbitals, ocelli small in diameter (approximating diameter of ocellar bristle sockets). Eye elongate. Vertex one third of head width; head width three quarters of thorax width, lateral lobes of vertex not much raised and not visible above eye margin in lateral view. Antennal grooves shallow. Fringe of setulae on ventral surface of A.s.2 strongly developed. Gena in frontal view with a curved margin between the lower margin of eye and buccal cavity. Palp elongate, many times longer than wide. Postgena developed posteriorly such that it bulges posterior to eye. Setulae generally long and dense; a peribuccal row of black setulae extending dorsally in an arc to form a facial row; black setulae on apicodorsal part of postgenal and on apicoventral half of palp; brown setulae on ocellar triangle well developed. Vertex asetose medially. Bristles: three ocellars (anterior pair white, median pair black and posterior pair white), two black fronto-orbitals, two verticals (inner white, outer black), one strong white postocellar, one white buccal, one fine white A.s.2. Postocular row black, well developed.

Thorax (figs. 4, 5). – Setulae long and dense, white, intermingled with black setulae in irregular patches on notum and pleurites; long setulae absent from postalar wall, posterior half of pleurotergite, meron, postnotum and subscutellum; bristle-like erect white setulae along margin, on disc and at apex of scutellum. Scutellum convex and strongly rounded at margin. Bristles: – 2 notopleural (posterior one on raised callus), one mesopleural, one supra-alar, one postalar, one intrapostalar, one weak posterior acrostichal and one weak posterior dorsocentral, one lateral and one apical scutellar (lateral placed dorsal to, and apical inserted ventral to midline of margin).

Legs. – Setulae long, white, interspersed with black setulae, tending to be more bristle like on ventral surfaces of femora and dorsal surfaces of tibiae. Mid coxal prong pale and narrow, slightly curved, apically pointed (fig. 6). Fore femora aspinose; white setulae interspersed with black setulae on apex. Apex of fore tibia with a distinct comb of orange setulae. Ventral pre-apical spur on mid tibia surrounded by a row of sharply pointed setulae. Anterior margin of tarsomeres with short, thick, black pre-apical setulae.

Wing (fig. 7). – Costa with no distinct breaks, but having a humeral weakening. Setulae on costa inter-

mingled black and white, generally corresponding to light and dark patches on membrane as far as subcostal node, and black setulae intermingled with brown to apex, becoming shorter toward wing apex. Costal cell broad, wider than length of crossvein r-m. Subcosta complete, undulating near to humeral crossvein, weakened at wing flexion and bent toward costa at 50°-60°. Fine brown setulae along posterior wing margin. Long black setulae dorsally on entire R_1 , and R_{4+5} and on r-m junction with discal portion of M; ventrally on RS and base of R_{4+5} . Wing flexion noticeable as a hyaline band through weakenings of subcosta, RS, M, and Cu at apex of bm. Crossvein r-m a little before midway on dc. Cell bm longer than cell cup; apex of cup rounded. Anal vein almost reaching wing margin. Lower calypter reduced to setose ridge, upper calypter well developed, margin undulating. Tegula small with long black and white bristle-like setulae.

Abdomen (fig. 8). – Ovate, widest at hind margin of tergite one and two. Sternites reduced to less than one third the width of abdomen. Setulae long and dense, a mixture of black and white, in longer tufts along midline of tergites three to five and only white on middle of posterior margin of tergite one and two. Sternite five v-shaped in male (fig. 10); sternite six broadly T-shaped in female (fig. 14).

Male postabdomen (figs. 9, 10, 15-17). – Epandrium small, trapezoid, distally produced into apical lobe with dorsal margin continuous with that of main body of epandrium; proctiger membranous, raised above sides of epandrium. Cerci fused, forming a shield above the surstyli. Surstylus single, basally narrow, sinuous, apically weakly sclerotized. Stipe of aedeagus narrow, with annular impressions on inner surface. Preglans well developed, slightly sclerotized.

Female postabdomen (figs. 11-13). – Oviscape conical, slightly shorter dorsally than ventrally; eversible ovipositor sheath finely ornamented; aculeus blunt ended, setose at apex and along shaft; spermathecae and ovaries not observed, but only two oviducts present at apex of vagina.

Included species. – *Agadasys hexablepharis* sp. n.

Distribution. – This genus is recorded from Vietnam, Thailand and India.

Agadasys hexablepharis sp. n. (figs. 1-17)

Etymology

Greek *hex* – six; Greek *blepharis* (f.) – eyelash, referring to the unusual occurrence of six ocellar bristles.

Diagnosis

Setulae on R_1 long, as long as distance across bases of three setulae. Mesopleural bristle long, reaching base of calypter.

Description

Dimensions. – Female holotype: body length 5.3 mm; wing length 5.1 mm.

Colour and pruinosity. – Upper third of postorbital sclerite dark brown. Ocellar triangle ochre. Notum with four dark brown square marks (fig. 4), one over each transverse suture and notopleural callosity, one frontomedial and one posteromedial, each surrounded by smoky-grey; both marks over notopleural callosity continue ventrally across anterior mesopleuron to upper apical corner of sternopleuron; sternopleuron, pteropleurite, pleurotergite, metapleuron and postnotum brown; subscutellum suffused with red-brown. Legs: faintly banded with brown basad of midpoint on tibiae; mid and hind coxae brown; hind femora with basal brown band. Basal portion of tergite one plus two dark brown, tergites three, four and five with brown and grey-brown marks across each tergite medially and laterally, amount of pale ground colour diminishing toward apex of abdomen (fig. 8).

Head (figs. 1-3). – Eye densely setose. Outer ventral setulae on A.s.2. long, reaching one third along A.s.3. Arista pubescent. Postocular plate rounded. Gena developed ventrally, equal to width of A.s.3. Setulae brown on ocellar triangle, along dorsal eye margin from ptilinum to vertex and on dorsal portion of postgena; white on anterior and lateral margins of ocellar triangle and on ventral portion of postgena. Bristles: as in generic description; frontorbital reclinate, but inclined slightly laterally. Post ocular row three lines of setulae deep.

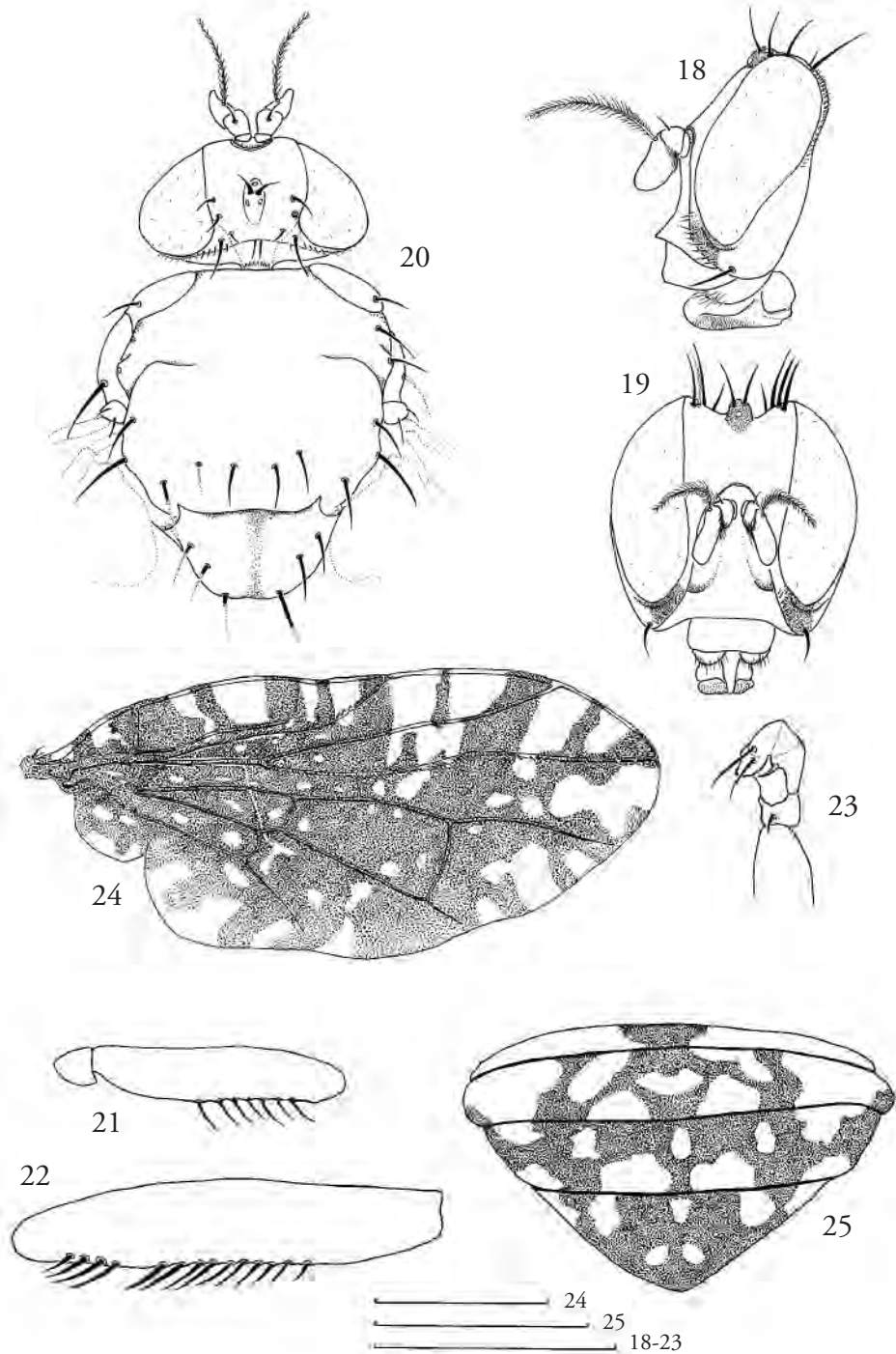
Thorax. – Scutellum apical margin and dorsal midline with shallow depression (fig. 5). Bristles: as in generic description.

Legs. – Two apical white fore coxal setulae, two dorsal white mid coxal setulae (fig. 6) and one dorsal white hind coxal setula. White setulae interspersed with black setulae on apex of fore and mid femora, at apex of tibiae and on faint marks on tibiae of all legs.

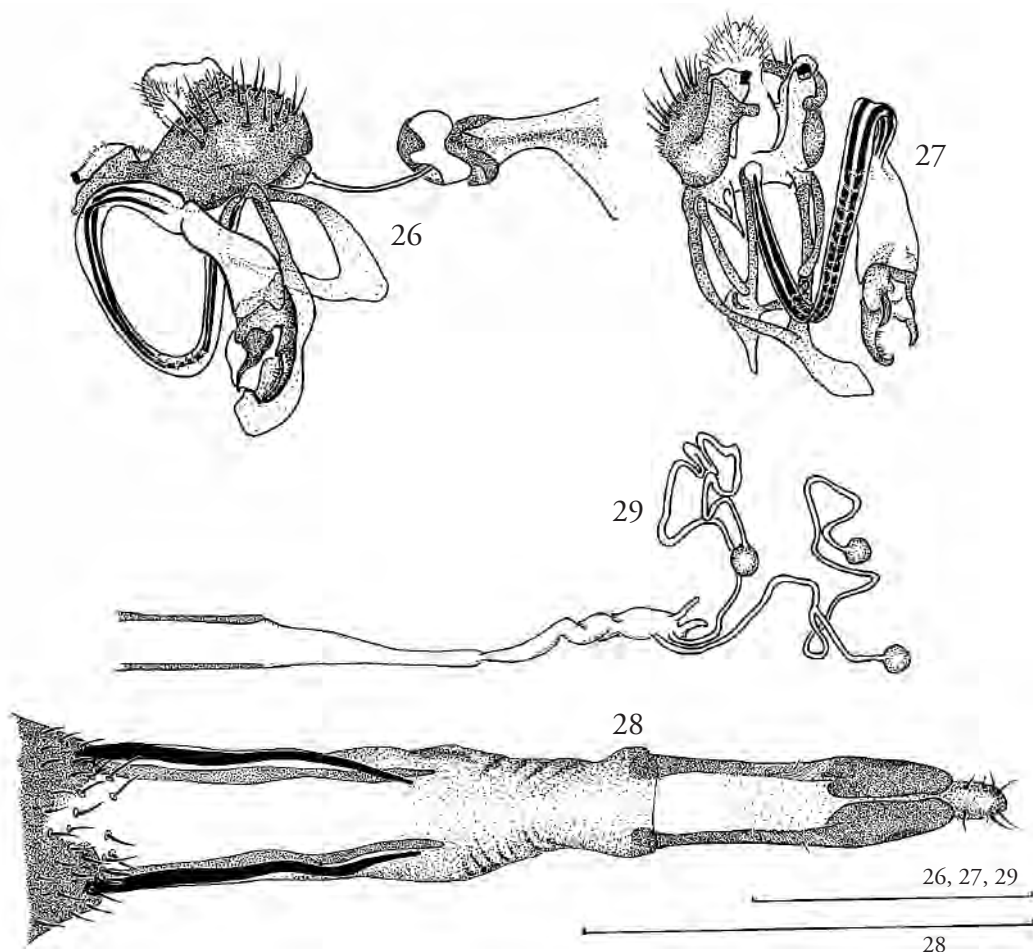
Wings. – Black setulae on R_1 long, and those on r-m positioned from junction of r-m with M to apex of discal portion of M.

Abdomen. – As in generic description.

Female postabdomen. – Tergite six absent, intersegmental membrane folded under tergite five; oviscape with two pairs of long bristles at apex of dorsal margin; eversible ovipositor sheath ornamented on apical half with fine wrinkles; apex of aculeus blunt ended, with four long apical setulae, two minute lateral apicals basad of long apicals and four subapicals, base of aculeus with two subapical and two median setulae (figs. 11-12); spermathecae not observed, but two ducts apparent at apex of vagina (fig. 13); ovaries not observed; ventral receptacle small and rounded, situated basally on vaginal wall.



Figs. 18-25. *Rbegmatosaga latiuscula* (Walker, 1856). – 18, head in lateral view; 19, head in frontal view; 20, head and thorax in dorsal view; 21, posterior surface of right fore femur; 22, posterior surface of left mid femur; 23, left mid-coxa; 24, right wing in dorsal view; 25, abdomen in dorsal view. Scale bars = 1mm.



Figs. 26-29. *Rhagmatosaga latiuscula* (Walker, 1856) postabdominal structures. – 26, male genitalia in lateral view; 27, male genitalia in ventral oblique view; 28, female genitalia in ventral view; 29, female internal genital tract. Scale bars = 1 mm.

Variation. – Male body length 4.4 mm, wing length 4.8 mm; female body length 4.3-5.3 mm, wing length 4.5-5.1 mm. Brown patches on the notum may be more extensive and the apex of the hind tibiae sometimes have a brown band. In male specimens the distinct hairs on the eyes are mostly missing, presumed rubbed off, with only a few hairs remaining. The inner surface of the male hind trochanter is apically pointed, but lacking a prong (this is relevant in comparison with some African species).

Male postabdomen (fig. 9-10, 15-17). – Epandrium blunt apically and curved gently around in front of surstyli, strongly setose dorsally, proctiger sub-

square; cerci apically rounded, setose along margin and apex, raised at a slight angle to the epandrial margin; surstylus apically blunt; arms of fultella and genital ring narrow; ejaculatory apodeme narrowly spatulate, sclerotized throughout, but more so basally; preglands elongate; apex of glans with paired terminal lobes between which rises a partially sclerotized apical spur, apical vesicle pointed.

Type material examined. – Holotype ♀: 'THAILAND: Phangnga / Prov.(vic. of Amphoe / Muang Phangnga town) / 08°28-29'N 98°32'E' [printed on white card]; '6 June 1969 / Malaise trap / John J.S. Burton' [printed on white card]; 'HOLOTYPE /

Agadasy / *hexablepharis* / sp. n. ♀ / Det. Whittington' [first and last lines printed, middle three hand written on red card] (BPBM). – Paratypes: INDIA: 1 ♂: – Sylhet [24°53'N 91°51'E], i.1914, Ianson [collector], C.T. Trechmann Bequest B.M. 1964-549 (BMNH); THAILAND: 1 ♀: Trang Province [07°30'N 99°18'E], Khaophappa Khaochang, 200m, 11-15.i.1964, G.A. Samuelson, Malaise trap (BPBM); VIETNAM: 1 ♂?: Tay Ninh Province [ca. 11°18'N 106°06'E], Nui Ba Den (Black Virgin Mountains), 6-8.viii.1970, A.R. Gillogly, 975m (3200 ft) (AMSA).

Discussion

The holotype has the apical half of the right wing missing and the post-abdomen dissected and stored in glycerine, in a microvial pinned with the specimen.

This is the only species known in this distinctive Oriental genus, distributed in India, Vietnam and Thailand. The Vietnam specimen has the abdomen folded under, thus making the genitalia indiscernible, but I consider it to be a male.

In female *Plastotephritinae*, there are usually three spermathecae arranged in a 2+1 fashion. Thus, the presence of two spermathecal ducts in this species, is considered sufficient evidence that *A. hexablepharis* has three spermathecae.

Rhegmatosaga Frey, 1930
(figs. 18-32)

Rhegmatosaga Frey, 1930: 63. Type species: *Rhegmatosaga insignis* Frey, 1930, by original designation [= *latiuscula* (Walker, 1856)]; Bezzi 1918: 246 [mention of specimens attributed to *Ortalidae*]; Frey 1932: 256 [discussion]; Hardy 1959: 191, 231 [new combination; new synonymy]; Steyskal 1977: 136 [catalogue].

Etymology

Rhegmatos Gr. f.- break, *sagos* L.n. – cloak, mantle – perhaps referring to the mottled appearance of the abdomen of members of this genus. Gender feminine.

Diagnosis

Inner vertical bristle reduced and setula-like; fore and mid femora of males and fore femur of females having a ventral row of short black bristles; costal cell broad, the distance from C to R₁ twice the dimension of r-m; abdomen weakly sclerotized, prone to collapse or to become misshapen in dried specimens.

Description

Dimensions. – Body length 2.9-3.9 mm; wing length 3.0-4.0 mm.

Colour and pruinosity. – Ground-colour dark brown; head and bands on tibiae pale cream or buff; wings brown, spotted with hyaline marks (fig. 24). Eyes reddish-brown. Antennae buff tinged grey-

brown at apex of A.s.3. Mouthparts brown ventrally. Calypter white; halteres pale-buff. Abdominal tergites mottled (fig. 25). Abdominal pleurites buff, sternites brown. Grey pruinescence dominant over ground colour on notum and abdominal tergites.

Head (figs. 18-20). – Elongate and antero-posteriorly compressed, vertex much narrower than thorax. Face indented slightly under antennae, but epistome projects only a little at margin. Eyes elongate, oval. A shallow, poorly developed groove present below eye. Frons broadening dorsally. Ocellar triangle positioned anterior to fronto-orbitals. Antennae pendulant, A.s.1 set a little below midway down length of head; arista plumose. A.s.2. with a lateralventral fringe of long pale setulae. Middle of vertex slightly sunken below level of top margin of eye. Postgena slightly swollen, roughly equal to width across the lower quarter of eye. Palp flattened, strongly setose. Bristles: one ocellar, two strong reclinate fronto-orbitals, one strong outer and one weak pale inner vertical, one pale postocellar, one dorsal on A.s.2. and one buccal. Postocular row pale, indistinct from occipital setulae.

Thorax (fig. 20). – Setulae short, pale on anterolateral margins and pre-sutural notum, black on post-sutural notum, with sparser pruinescence surrounding alveoli; longer on pleurites, generally pale with some brown setulae on mesopleuron, pleurotergite, scutellum and around coxae. Bristles: one humeral, two notopleural (posterior one on raised callus), one mesopleural, one supra-alar, one postalar, one intralar, one prescutellar ac and dc, two lateral and one subapical scutellars.

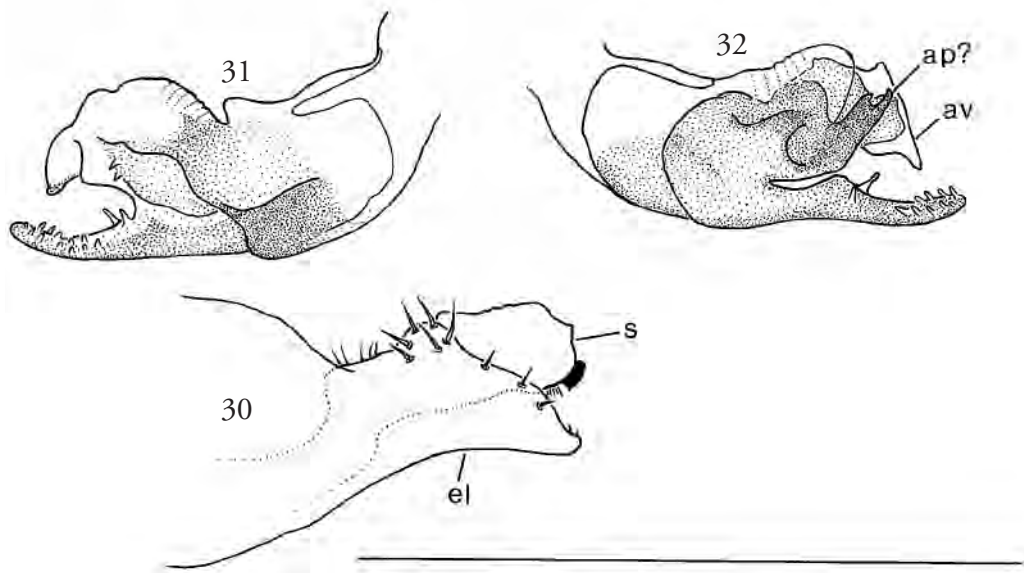
Legs. – Fore and mid femora with anteroventral and posteroventral rows of short black bristles (figs. 21, 22); mid-coxal prong narrow, pointed and pale coloured (fig. 23). Anterior margin of tarsomeres with short black preapical setulae.

Wing (fig. 24). – Costa with pre-humeral weakening, but without a distinct break, marked by a change in costal-setula length. Costal cell broad. Subcosta sinuous basally, ending abruptly distally, beyond which membrane is distinctly folded until junction with Costa. Setulae dorsally on entire length of R₁ and R₄₊₅. R₁ slightly sinuous; R₄₊₅ arching forward slightly.

Abdomen. – Pleurites densely covered with short, black setulae.

Male postabdomen (figs. 26, 27, 30-32). – Epan-drium rounded; preglans present, unsclerotized; glans with terminal claw-like lobes; base of ejaculatory apodeme membranous, but partially sclerotized, large and bulbous.

Female postabdomen (figs. 28, 29). – Tergite six absent; oviscape conical, shorter dorsally than ventrally; eversible ovipositor sheath ornamented on median membranous section with fine bumps; aculeus finely



Figs. 30-32. *Rhagmatosaga latiuscula* (Walker, 1856). – 30, outer view of the apex of the epandrial lobe and surstylus; 31, glans in lateral view from the left side; 32, glans in lateral view from the right side. Abbreviations: ap? = acophallus ?; av = membranous apical vesicle; el = epandrial lobe; s = surstylus. Scale bar = 0.5mm.

ornamented with wrinkles along lateral margin, tip blunt, with one pair of fine basal setulae and two pairs of strong, and 1 pair of very small apical setulae; three spherical spermathecae; one spermathecal duct free for entire length remaining two joined with unequal terminal sections of duct (fig. 29).

Included species. – *Rhagmatosaga latiuscula* (Walker, 1856).

Discussion

Rhagmatosaga insignis Frey, 1930 was designated by Frey (1930) as the type species of *Rhagmatosaga*. Hardy (1959) examined Walker's types of Tephritidae and transferred *Noeeta latiuscula* Walker, 1856 from *Noeeta* to *Rhagmatosaga* by synonymizing it with *R. insignis*.

Bezzi (1918) mentioned specimens from the Philippine Islands collected by Prof. C. F. Baker (see Other Material under *R. latiuscula* below), stating that these were allied to *Cladoderris* Bezzi, 1914 and *Agrochira* (*Mesanopin*) *tephritina* (Enderlein, 1912) and would be better placed in the Ortalidae. The family concepts have since changed and all three genera belong to the Plastotephritinae. Other than this placement there is no indication that these genera share a close evolutionary affinity, since a phylogenetic assessment of the Plastotephritinae has yet to be carried out.

Distribution

This is an Oriental genus, distributed from Laos to the Philippines.

Rhagmatosaga latiuscula (Walker, 1856) (figs. 18-32)

Noeeta latiuscula Walker, 1856b: 133 [generic misidentification]; Hardy 1959: 191 & 231 [correction].

Rhagmatosaga insignis Frey, 1930: 63, fig. 8 (wing); Hardy 1959: 191 & 231 [new synonymy]; Steyskal 1977: 136 [catalogue]

Rhagmatosaga latiuscula (Walker, 1856); Hardy 1959: 231 [new combination]; Steyskal 1977: 136 [catalogue].

Etymology

Latin *latiuscula* – slightly broad, possibly referring to the broad costa cell of the wing.

Diagnosis

Eye bare; pruinescence predominantly grey; bristles of mid femur in a long medial and a short apical series.

Description

Dimensions. – Male holotype: body length 3.2 mm; wing length 3.4 mm.

Colour and pruinosity. – Ground-colour dark brown. Head cream; antenna, pitilinal area, palp and dorsal surface of labellum slightly yellow; ground-

colour restricted to ocellar triangle, narrow band on gena and epistomal margin below eye and ventral surface of labellum, A.s.3 tinged grey-brown apically; postorbital sclerite mostly dark brown, but pale creamy-white adjacent to margin of eye; median occipital sclerite pale creamy-white. Scutellum with faint yellow-brown spots at base and along margin. Fore coxae pale buff apically. Tibiae with two medial pale-buff bands: at about two fifths and four fifths from base. Tarsomeres one and two pale-buff, remaining tarsomeres pale-brown. Wings speckled brown and hyaline (fig. 24), veins pale at hyaline areas of membrane and brown across dark brown markings. Tergites one and two pale-buff on distal margin with median black band (fig. 25). Male postabdomen brown. Silver pruinescence inconspicuous on most of head. Conspicuous grey pruinescence on notum and base of scutellum, but distinctly absent from alveoli; six poorly defined bronze-brown pruinescence markings on notum giving a mottled impression. Mesopleuron with a dense silver pruinose band across it from fore coxa to wing base. Abdominal tergites densely grey pruinose mottled with bronze-brown pruinescence (fig. 25).

Head (figs. 18-20). – Vertex concave between eye margins and ocellar triangle; face slightly concave at base, epistomal margin protruding as far as A.s.2.; arista twice as long as A.s.3, short and densely plumose. Palp broad. Occiput shallow, postgena swollen. Setulae pale, short on front of head, longer on postgena, palp, labellum and ventral margin of A.s.2.; parafrontals black.

Thorax (fig. 20). – Scutellum with a distinct furrow along median line.

Legs. – Row of bristles on fore femur long and thin, arranged in a single series on posteroventral surface (fig. 21); bristles of mid femora in anteroventral position, divided into a short apical series of three bristles and a longer medial series of six bristles (left leg). Setulae of legs brown, sometimes pale on bands of ground-colour. Mid and hind coxae each with two bristles; mid coxa with short, curved prong (fig. 23); mid trochanter with a short terminal bristle.

Wings. – Costal cell broad, the distance from C to R_1 twice the length of r-m; Sc, R_{2+3} and R_{4+5} slightly sinusoidal; Sc evanescent at flexion line; r-m positioned slightly basad of midway on dc; cup shorter than bm; apical crossveins of cup and dc curved.

Abdomen (fig. 25). – Setulae generally pale, black on tergite five.

Male postabdomen (figs. 26, 27, 30-32). – Epanthrium rounded, evenly covered with black setulae, distally produced into an elongate apical lobe, blunt ended, curved around in front of surstylus, with a small apical projection raised midway along length into a triangular lobe that is fused with surstylus.

Proctiger subsquare, fused with cerci. Cerci fused along midline and fused to proctiger, strongly setose ventrally. Apex of surstylus with a strongly sclerotized bar (fig. 30), inner margin of stem of surstylus raised as a shallow ridge with short setulae near apex. Stipe of aedeagus narrow. Preglans conical, unsclerotized, about, twice width of stipe. Glans divided into a complex array of processes, single terminal lobes present ventrally, with a double row of peg-like setulae; membranous apical vesicle present dorsally; possible acrophallus projecting dorsally at base of vesicle (fig. 32). Ejaculatory apodeme, strongly sclerotized (damaged in dissection) and a large bulbous partially sclerotized basal lobe attached to a short, unsclerotized ejaculatory duct. Arms of fultella and genital ring narrow, apices spatulate and poorly sclerotized (fig. 26, 27).

Variation. – Male body length: 2.9-3.9 mm; wing length: 3.0-4.0 mm; female body length: 3.0-3.5 mm; wing length: 3.2-3.6 mm. The specimen from Laos has a hyaline spot in the subcostal band connected to the hyaline area basad to that band and some small difference in mottling on abdomen. Some specimens have pruinescence more clearly defined, showing a strong line of silver-grey pruinescence along the median furrow of the scutellum and sometimes some marginal spots. The number of apical and median bristles in the rows on the male mid femur varies from 3-5 and 6-8 (fig. 22) respectively and may differ on the legs of an individual specimen. Furthermore, the distinction between the medial and apical series is not always well defined. Female specimens have fore and mid femoral bristles poorly developed and almost setula-like on mid leg.

Female postabdomen as in generic description (figs. 28, 29).

Type material examined. – Holotype ♂: BORNEO: 'Type' [printed round label with green border]; 'SHR' [handwritten, round label]; '684' [printed, small rectangular label breaking in half]; '*latiuscula* / Wilk' [handwritten in black ink, folded in three]; 'Borneo / W.W. Saunders / B.M. 1868-4.' [handwritten in black ink, pin hole through first 8 of year]; '*Rhegmatosaga* / *latiuscula* (Walker) / *R. insignis* Frey / is a / synonym / Det. 1954 / D.E. Hardy' [handwritten in black ink, with 'Det. 195' and 'D.E. Hardy' printed in line with 'is a' and 'synonym' respectively]; 'HOLOTYPE / *Rhegmatosaga* / *latiuscula* ♂ / (Walker, 1856) / Det: A.E. Whittington' [on red card, first and last lines printed in black ink, remainder handwritten] (BMNH).

Other Material. – LAOS: 1♂, Wapikhamthong Prov. / Wapi [possibly = Muang Vapi, 15°40'N 105°55'E], 15.iii.1967 Native Collector, RONDON—BISHOP MUS. COLLECTION, light trap (BPBM); VIETNAM: 1♀, Tay Ninh Province [ca. 11°18'N 106°06'E], Nui Ba Den (Black Virgin Mountains), 6-8.viii.1970, A.R. Gillogly 975m (3200 ft) (AMSA); PHILIPPINES: 1♂, 'Type' [printed on round label with red border]; 'Pres. by / Imp.Inst.Ent. / Brit.Mus. / 1931-56' [printed on white card]; '*Rhegmatosaga* / *insignis*

n.gen. / n.sp. Frey det.' [hand-written except for 'Frey det.']; '3902' [handwritten on small label]; 'Butuan [08°56'N 125°31'E] / Mindanao / Baker' [printed on white card]; 'Spec. typ. No. / ' [printed on dusty-pink paper, with bold black line down left side and fine black line (partly cut off) along bottom] (BMNH); 1 ♀, same locality and collector as BMNH type (USNM, bearing a number '3905'); 1 ♂, 'Davao [07°05'N 125°38'E], Mindanao, Baker' [printed on white card]; '6433' [handwritten on small label]; 'Spec. typ. No... / ' [printed on dusty-pink paper]; 'Mus. Zool. H:fors / Spec. typ. No 14080 / *Rhegmatosaga / insignis* Frey' [first two lines up to the numerals printed and numerals of second line plus following two lines hand-written in blue ink, all on pale blue paper] (MZHF); 3 ♂, 4 ♀, same locality and collector data as MZHF type (USNM, 1 ♀ also bearing a label with the number '6433').

Discussion

The holotype specimen of *R. latiuscula* is in good condition (as reported by Hardy 1959), small amounts of fungus visible. It is staged on a rectangular piece of clear celluloid and the postabdomen was dissected and placed in glycerine in micro-capsule on pin. The original description by Walker (1856) appears in his paper on material collected by Mr A. R. Wallace. The label of the type specimen, however, bears the name W.W. Saunders. It is clear from the discussion by Saunders of Wallace's collecting (Walker 1856) that Wallace gave material to Saunders, who then incorporated it into his own collection. Thus the reference to Saunders on the label does not refer to the collector, but to the owner of the collection.

In the original description (Walker 1856) the scutellum and abdomen were described as brilliant and shining black. This is possibly the case in freshly caught material, although I have seen none. The scutellum of the holotype is dark-brown now and has lost the grey pruinosity that is evident in other specimens, especially along the median furrow. Likewise the abdomen is dark brown and both it and the scutellum may have faded since the specimen was first described.

Contrary to Frey (1930), the syntype specimens of *Rhegmatosaga insignis* Frey, 1930 are in separate institutions. Both specimens are male, one is in BMNH (London) and the other is in MZHF (Helsinki).

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