

NEW SPECIES OF *Allacta* Saussure and Zehntner FROM PAPUA NEW GUINEA, IRIAN JAYA AND SARAWAK (Blattaria, Blattellidae: Pseudophyllodromiinae).

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ABSTRACT

Ten new species of *Allacta* Saussure & Zehntner are described of which nine are from the island of New Guinea, and one is from Sarawak. A key is presented to distinguish the New Guinea males.

Key words: New Guinea, Sarawak, cockroaches, taxonomy, new *Allacta* spp., Blattellidae.

INTRODUCTION

The cockroach genus *Allacta* Saussure & Zehntner (= *Arublatta* Bruijning) consists of about 30 described species and has been reviewed (Roth 1991, 1993). More recently I received a collection of New Guinea *Allacta* from the Bernice P. Bishop Museum (BPBM) which included nine new species, belonging to the *funebis* and *polygrapha* species groups. These are described below, as is one new taxon from Sarawak belonging to the *hamifera* species group, in the Zoological Institute, Lund, Sweden (ZILS). Previously only *basivittata* Bruijning, was known from New Guinea (Irian Jaya) and Aroe Island. A few specimens are from the Hope Entomological Collections, Oxford, England (HECO). Some BPBM specimens have been retained in the Museum of Comparative Zoology, Harvard University (MCZ).

Symbols used

@	=	male
\$	=	female

SYSTEMATIC SECTION

Genus *Allacta* Saussure & Zehntner

Allacta Saussure & Zehntner, 1895: 45; Roth 1991: 996 (synonymy and literature); 1993: 361. (Type species: *Abrodiaeta modesta* Brunner, by selection, Hebard 1922: 326).

Diagnosis: Tegmina and wings fully developed (Figs. 2A, C, E), or reduced in females (Figs. 7F, 8H); tegmina with oblique discoidal sectors. Cubitus vein of hind wing with three to six complete and no incomplete branches, apical triangle small or absent (Figs. 4D, 7D, 9E). Front femur Type B; pulvilli present on fourth proximal tarsomere only, tarsal claws simple, symmetrical, arolia present (Fig. 10F). Male: abdominal terga unspecialized. Genitalia with four principal phallomeres: hook on right side; median phallomere with or without lateral flange or extension; associated median phallomere usually curves under median sclerite and usually terminates in setose membrane (Fig. 3D), or a few spines (Fig. 3E).

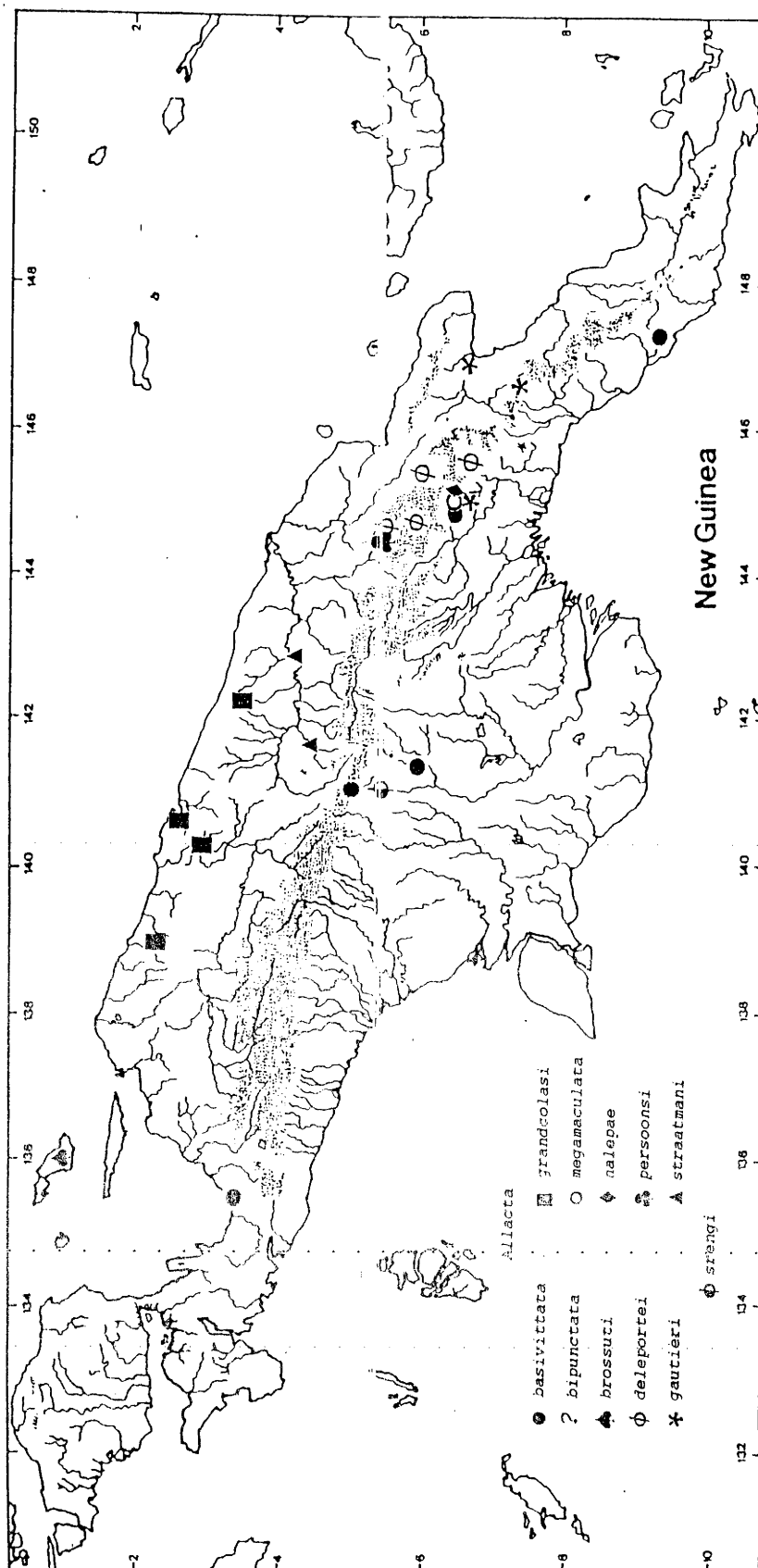
Distribution: The distribution of the New Guinea *Allacta* is shown in Figure 1.

Key to adult *Allacta* males from New Guinea

1. Face entirely dark (Figs. 2G, J) or with the lower part dark, upper region light (Figs. 2B, D, F) (*funebis* - species group) 2
- Face with median dark longitudinal stripe (Figs. 4A, 5A, 6A, 8A, 9A) (*polygrapha* - species group) 6
2. Face with region above antennal sockets orange (Figs. 2B,

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Figure 1. Distribution of *Allacta* spp. in New Guinea. Three of the species also occur elsewhere as follows: *basivittata* on Aroe Island; *bipunctata* on Sulawesi; *grandcolasi* on New Ireland.



- D, F). Tegmina with maculae at the bases of anal fields (Figs. 2A, C, E) 3
- Face entirely dark (Figs. 2G, J) 5
3. Tegmina without medial pale maculae (Fig. 2C) *basivittata*
- Tegmina with pair of medial pale maculae (Figs. 2A, E) 4
4. Medial maculae of tegmina very small (Fig. 2A) *bipunctata*
- Medial maculae of tegmina very large (Fig. 2E) *megamaculata*
5. Pronotum with broad lateral orange zones (Fig. 2I) *straatmani*
- Pronotum without orange zones (Fig. 2H). Tegmina only with oblique yellowish maculae at bases of anal field (Fig. 2H). *grandcolasi*
6. Interocular space 0.5 mm or less (Figs. 5A, 9A) 7
- Interocular space more than 0.5 mm 8
7. Median genital phallomere with large lateral membrane on distal half (Fig. 5C). Pronotum as in Fig. 5B *brossuti*
- Median genital phallomere without lateral flange (Fig. 9C). Pronotum as in Fig. 9B *srengi*
8. Median genital phallomere without lateral flange (Fig. 7E) 9
- Median genital phallomere with lateral flange (Figs. 4C, 6D). 10
9. Dark pronotal macula almost completely solid (Fig. 7B). Apex of median phallomere swollen (Fig. 7E) *persoonsi*
- Pronotal macula with more pale areas (Fig. 8B). Apex of median phallomere not swollen (Fig. 8D) *nalepae*
10. Genitalia as in Fig. 6D. Pronotum as in Fig. 6B. Interocular width 0.9-1.0 mm (Fig. 6A) *deleportei*
- Genitalia as in Fig. 4C. Pronotum as in Fig. 4B. Interocular width 0.7 mm (Fig. 4A) *gautieri*

funebria - species group

Diagnosis: Very dark. Head entirely dark (Figs. 2G, J) or with region above antennal sockets orangish, lower portion dark (Figs. 2B, D, F). Pronotum entirely dark or with lateral margins or posterolateral corners narrowly yellowish or yellowish white (Figs. 2A, C, E, H), or broad lateral borders orange (Fig. 2I). Tegmina dark with yellow, yellowish white, or white maculae at base of anal field and with (Figs. 2A, E) or without (Figs. 2C, H, I) pale maculae medially, sometimes without any pale marks.

Species: *basivittata* (Bruijning); *bipunctata* (Walker); *grandcolasi* spec. nov.; *megamaculata* spec. nov.; *straatmani* spec. nov.

Allacta basivittata (Bruijning) (Figs. 1; 2C, D; 3B, C)

Arublatta basivittata Bruijning 1947:224, figs. 4a-d (@ & \$); Princis 1953:55; 1965:151 (synonymized with *bipunctata*).

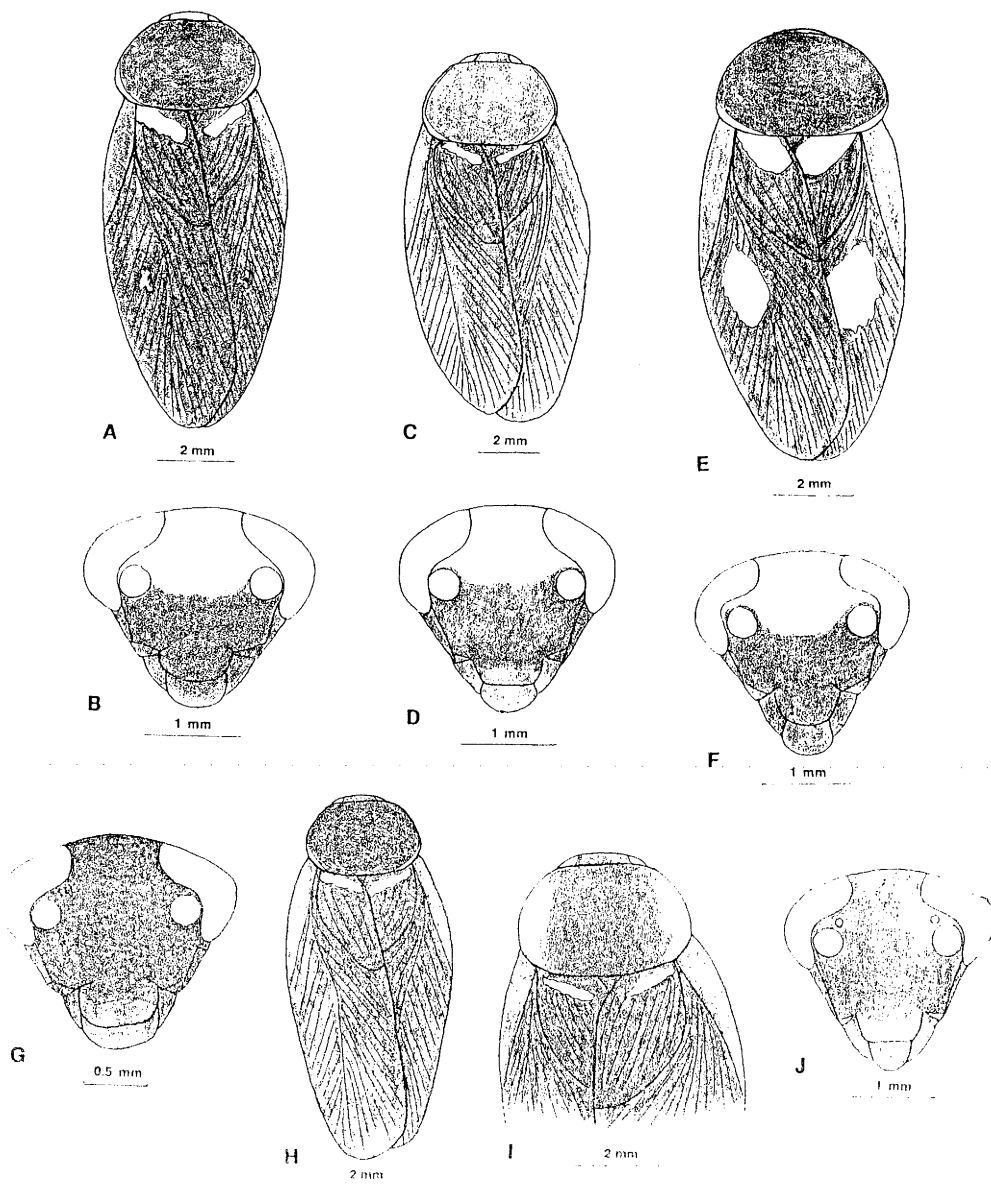
Allacta basivittata (Bruijning): Roth 1991:1010, fig. 31 (redescribed @ & \$ as *bipunctata*).

Material examined: Papua New Guinea. BPBM: Oriomo river, 6 m, 1@ (terminalia slide 510), 21.ii.1964, light trap, 2\$\$ (one carrying an ootheca in the vertical position), 14.ii.1964, H.C.; Koitaki [9+23'S 147+16'E], 1500 ft., 1@, xi.-xii.1928, 1\$, x.xi.1928, Pemberton; "Ruka", 9 m, 1\$, 9.viii.1965, H. Clissold; Kiunga, 35 m, 1\$ (carrying an ootheca in the vertical position), viii.1969, J. & M. Sedlacek; Kiunga, Fly River [6+07'S 141+17'E], 2@@, 1\$, 23-25.vii.1957, 1\$, 5-7.viii.1957, 1\$, 26-30.vii.1957, 1@, 4-5.ix.1957, W.W. Brandt. The following were collected by J.L. or J.L. & M. Gressitt: W. District, Oriomo Gov't. Sta., 2@@ (one on shelf fungus), 26-28.x.1960; Karimui [6+32'S 144+47'E], south of Goroka [6+04'S 145+23'E], 1000 m, 1@, 4.vi.1961, 1\$, 3.vi.1961; Karimui, 1\$, 4.vi.1961. Irian Jaya. BPBM: Star Mts., Sibil Val. [5+00'S 141+00'E] 1245 m, 1\$, 18.x.-8.xi.1961, L.W. Quate. The following were collected by J. Sedlacek: Nabire [3+22'S 135+29'E], 5-50 m, 1@, 25.viii.-2.ix.1962; Nabire, S. Geelvink Bay, 10-40 m, 1\$, 1-4.ix.1962. Four specimens retained in the MCZ.

Comments: Roth (1991: 1010) redescribed this species as *Allacta bipunctata* (Walker) (from Sulawesi) with which it had been synonymized by Princis (1965: 151; 1969: 941). However, after examining Walker's type in my recent revision of *Allacta*, I (Roth 1993: 361) decided to keep the two species distinct, until its male (from the type locality) is described, because the males and females of *basivittata* lack two small yellow spots in the middle of the tegmina which are found in *bipunctata* (Roth 1993: 364). The tegmina of all the above specimens have the maculae at the bases of the anal field and lack the yellowish maculae near the middle (Fig. 2C). The pale markings on the pronota and tegmina may vary in size and color (yellow, yellowish white or white); on the pronotum the yellowish margin may extend along the lateral edge (Fig. 2C) or may be reduced and restricted to the rounded hind corner. The head always is bicolorous, the region above the antennal sockets orange, the remainder blackish (Fig. 2D). The subgenital plate, styli, and genitalia are shown in Figs. 3B, C.

Measurements (mm) (\$ in parentheses): Length, 7.6-9.5 (8.0-9.7); pronotum length x width, 2.0-2.6 x 3.1-4.1 (2.3-2.7 x 3.7-4.4); tegmen length, 8.0-10.0 (7.5-9.1); interocular width, 0.7-0.8 (0.7-0.9).

Figure 2. *Allacta* spp., habitus and heads: A, B) = *bipunctata* (male from Olsobip, Papua New Guinea). C, D) = *basivittata* (male from Kiunga, Papua New Guinea). E, F) = *megamaculata* (E, male holotype, F, female paratype). G, H) = *grandcolasi* (male paratype). I, J) = *stratmani* (male holotype).



***Allacta bipunctata* (Walker)**
(Figs. 1, 2A, B; 3A)

Blatta bipunctata Walker 1869:141 (\$).

Pseudectobia bipunctata (Walker): Shelford 1907:495, pl. 30, fig. 3

Pseudophyllodromia bipunctata (Walker): Shelford 1908:17; Hanitsch 1933:134; Bruijning 1947:223.

Arublatta bipunctata (Walker): Princis 1965:151.

Allacta bipunctata (Walker): Roth 1991:1010, fig. 31 (redescribed *basivittata* as the junior synonym of *bipunctata*); 1993 (1992): 364, fig. 1) (redescribed

the \$ as distinct from *basivittata*).

Material examined: Papua New Guinea. BPBM: Fly river, Olsobip [5+°+23'S 141+°+32'E], 400-600 m, 1@ (terminalia slide 507), viii.1969, 1@, 400 m, 23.viii.1969, J. & M. Sedlacek.

Description: *Male:* Interocular space slightly less than distance between antennal sockets (Fig. 2B). Pronotum subelliptical, widest near middle (Fig. 2A). Tegmina and wings fully developed extending well beyond end of abdomen, former with oblique discoidal sectors. (Wings were not spread). Front femur Type B₂, with one to four stout proximal spines (some very small); pulvilli on fourth proximal tarsomere of all legs, tarsal claws simple, symmetrical, arolia small. Abdominal terga unspecialized. Supraanal plate strongly transverse, very short, hind margin weakly convexly rounded, paraprocts similar plates. Subgenital plate with shallow medial excavation which is visible in slide preparation because pressure of coverslip exaggerates excision (Fig. 3A); in pinned specimen inner excavated margins are contiguous forming keel-like ridge between small styli (e.g., Fig. 3C). Genitalia as in Fig. 3A: hook on right side with preapical incision; median phallomere with broad, irregularly rounded membrane distad; associated with median phallomere is rodlike sclerite which has densely setose structure distad; left phallomere consisting of several simple sclerites.

Colouration: Black. Head with orange region from occiput to level of antennal sockets, remainder black (Fig. 2B). Pronotum black with narrow yellowish white margin limited to rounded posterior corners (Fig. 2A). Tegmen with large, rectangular, oblique, yellowish white macula at base of anal field and very small yellow or whitish spot (may be single or very narrowly unequally divided) near middle (Fig. 2A). Abdomen, legs, and cerci black.

Measurements (mm): Length, 8.7-9.2; pronotum length x width, 2.6-2.7 x 3.9-4.1; tegmen length, 8.8-9.2; interocular width, 0.6.

Comments: The male's median and left genital phallomeres are similar to those of *basivittata*, and these two specimens may simply be a variant of that species. However, the male of *bipunctata* from Sulawesi (type locality) is still unknown and its genitalia should be compared with the present Papua New Guinea material to be certain the taxa are not conspecific. The principal difference between the male markings of the two taxa are the presence of small whitish medial maculae on the tegmina of *bipunctata* (absent in *basivittata*) and these are distinctly larger in the female

type from Sulawesi.

***Allacta megamaculata* spec. nov.**

(Figs. 1, 2E, F; 3D)

Material examined: *Holotype:* @ (terminalia on slide 506), New Guinea NE, Karimui [6+°+32'S 144+°+47'E] [Papua New Guinea], 1080, 13.vii.1963, J. Sedlacek; in BPBM. *Paratype:* Papua New Guinea. BPBM: same data as holotype, 1\$.

Etymology: The specific name refers to the very large maculae near the middle of the tegmina.

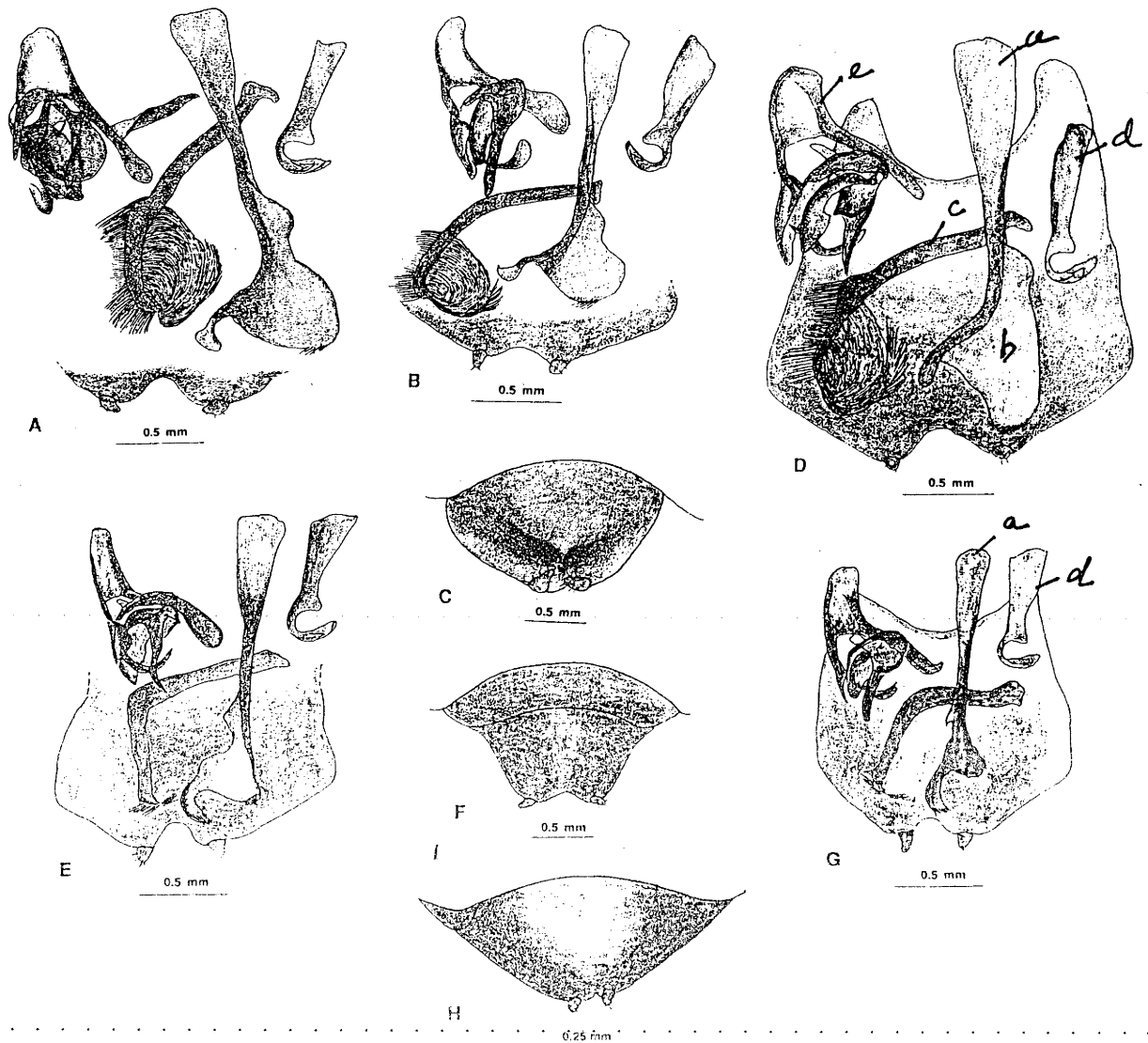
Description: *Male:* Head slightly exposed, interocular width slightly less than distance between antennal sockets (Fig. 2F). Pronotum transverse, subelliptical, widest behind middle (Fig. 2E). Tegmina and wings fully developed extending beyond end of abdomen, former with oblique discoidal sectors (wings were glued to abdomen and therefore not spread). Front femur Type B₂ with one or two small stout spines about length of piliform spinules; pulvilli only on fourth proximal tarsomere of all legs, tarsal claws symmetrical, simple, arolia small (only one front leg intact). Abdominal terga unspecialized. Supraanal plate transverse, hind margin convexly rounded, paraprocts similar plates. Subgenital plate with medial excision forming ridge or keel between small similar styli (e.g., Fig. 3C); in slide preparation, excised region spreads apart and distance between styli is exaggerated (Fig. 3D). Genitalia as in Fig. 3D; hook on right side with preapical incision; median phallomere apically rounded, distal half with large irregular lightly sclerotized plate bearing small group of setae along margin; below median phallomere is additional sclerite distally modified with densely setose plate; left phallomere consisting of several closely associated sclerites.

Female: Supraanal plate strongly transverse, hind margin convex with shallow V-shaped excavation medially.

Colouration: Black. Head orange from occiput to level of antennal sockets (Fig. 2F). Pronotum black with posterior rounded corners narrowly yellowish white (Fig. 2E). Tegmen black with two large yellowish white maculae one at base of anal field, other near middle (Fig. 2E). Abdomen and legs black, cerci black with preapical segment white.

Measurements (mm) (\$ in parentheses): 9.5 (9.7); pronotum length x width, 2.7 x 4.1 (2.7 x 4.3); tegmen length, 9.5 (9.0); interocular width, 0.8 (1.0).

Figure 3. *Allacta* spp., males, subgenital plates and genitalia [A, B, D, E, G, are from slide preparations (dorsal); only the hind margin of the subgenital plate is shown in A and B, and only the distal half in E; C, F, H, are from pinned specimens (ventral)]: A) = *bipunctata* (from Fly River, Olsobip, Papua New Guinea). B, C) = *basivittata* (B from Oriomo River and C from Klunga, Fly River, Papua New Guinea); D) = *megamaculata* (holotype; a = median phallomere; b = lateral membrane; c = associate median phallomere; d = right hooklike phallomere; e = left phallomere). E, F) = *straatmani* (E from paratype, F from holotype). G, H) = *grandcolasi* (G from holotype, H from paratype).



Comments: The male genitalia of this species shows a close relationship to *bipunctata* and *basivittata*. The white maculae in the middle of the tegmina of *megamaculata* are much larger than those found in *bipunctata* and the species is distinctly larger than the other two related taxa.

***Allacta grandcolasi* spec. nov.**

(Figs. 1, 2G, H; 3G, H)

Material examined: Holotype: male, Hollandia (= Jayapura) [Irian Jaya] [2+°32'S 140+°42'E], 0-300 m., 1\$, 22.xii.1961-2.i.1962, S. & L. Quate; BPBM.

Irian Jaya. BPBM: *Paratypes*: same data as holotype, 2@@ (1 with terminalia on slide 509), 1\$; Ifaar [2+34'S 140+31'E], Cyclops Mts. [2+32'S 140+36'E], 300-500 m, 1 (abdomen missing), 23-25.vi.1962, J.L. Gressitt; Ifaar, Cyclops Mts. 300-500 m, 1\$, 23-25.vi.1962, J. Sedlacek. The following were collected by T.C. Maa: Bodem [2+20'S 138+55'E], 100 m, 11 km SE. of "Oeberfaren", 1@, 7-17.vii.1959; Genyem [2+46'S 140+12'E], 40 km W. of Hollandia, 100-200 m, 1@, 1-10.iii.1960; Hollandia, 1@, 13.iii.1960; Ifar, 400-550 m, 1\$, 23.vi.1959. Papua New Guinea. BPBM: Torricelli Mts. [3+25'S 142+15'E], "Mobitel", 750 m, 1@, 16-31.iii.1959, W.W. Brandt. New Ireland. BPBM: New Ireland (SW), "Camp Bishop", 12 km up Kait R., 240 m, 1\$, 15.vii.1956, B.J. Ford Jr. Three specimens retained in MCZ.

Etymology: The species is dedicated to Dr. Philippe Grandcolas, URA 373 CNRS, Laboratoire de Primatologie, Station Biologique de Paimpont, France, for his important contributions to cockroach taxonomy.

Description: *Male*: Head slightly exposed, interocular space less than distance between antennal sockets (Fig. 2G). Pronotum suboval, widest near middle (Fig. 2H). Tegmina and wings fully developed extending beyond end of abdomen, former with oblique discoidal sectors. Hind wing with simple radial and media veins, cubitus vein with five complete and no incomplete branches, apical triangle small. Front femur Type B₂, with two stout proximal spines; pulvilli on fourth proximal tarsomere only, tarsal claws symmetrical, simple, arolii small. Abdominal terga unspecialized. Supraanal plate transverse, hind margin rounded, right and left paraprocts similar simple plates. Subgenital plate with small similar styli, one on each side of shallow medial excision (Figs. 3G, H). Genitalia as in Fig. 3G: Hook on right side, with preapical incision; median phallomere distally enlarged with small group of terminal setae; curved rod under median phallomere bends in middle, apical margin setose; left phallomere several closely arranged sclerites.

Female: Tegmina and wings slightly reduced. Supraanal plate strongly transverse, hind margin convex with small medial excavation.

Colouration: Head very dark reddish brown to black; vertex, clypeus, and labrum lighter, minute ocellar spots yellowish (Fig. 2G); maxillary palpi dark reddish brown to black; antennae brown or brownish yellow, or proximal antennomeres brownish yellow, remainder brown. Pronotum very dark reddish brown, lateral edges yellow or yellowish white, or pale edging limited

to posterior rounded corners only (Fig. 2H). Tegmina dark reddish brown with narrow, oblique, yellowish or yellowish white band at bases of anal fields (Fig. 2H). Wings very dark, costal region reddish. Abdomen dark reddish brown. Cerci black with four terminal segments yellowish white or white. Legs reddish brown to black, tarsi lighter.

Measurements (mm) (\$ in parentheses): Length, 7.4-8.5 (7.9-9.6); pronotum length x width, 2.1-2.3 x 3.1-3.6 (2.3 x 3.6-3.7); tegmen length, 8.6-10.0 (7.2-7.8); interocular width, 0.6 (0.7).

Comments: This species is closely related to *straatmani* because of their strongly similar median genital phallomeres.

Allacta sp. A

Material examined: Papua New Guinea. BPBM: Bulolo [7+12'S 146+39'E], 650 m, 1\$, 3.viii.1968; Ambunti [4+14'S 142+49'E], Sepik R., 50 m, 1\$ (carrying ootheca in vertical position), 10.v.1963, R. Straatman. Irian Jaya. BPBM: The following were collected by T.C. Maa: Hollandia-Kotania [2+36'S 140+39'E], 1\$, 25-28.ii.1960; Waris [3+30'S 140+55'E], S. of Hollandia, 450-500 m, 1\$ (carrying ootheca in vertical position), 27-30.vii.1959.

Comments: These females are dark reddish brown. The head and tegmina are completely dark; the pronotum may or may not have very narrow yellow lateral margins. The cerci are completely dark or the penultimate segment may be pale. Except for the absence of basal yellow markings on the tegmina, the species strongly resembles and may be a color morph of *grandcolas* but males are needed to determine if this is true or if it is new. Both forms are sympatric.

Measurements (mm): Length, 8.2-10.0; pronotum length x width, 2.3-2.5 x 3.4-3.8; tegmen length, 8.1-9.3; interocular width, 0.6-0.7.

Allacta straatmani spec. nov. (Figs. 1, 2I, J; 3E, F)

Material examined: *Holotype*: male, New Guinea NE [Papua New Guinea], May R. Patrol Sta., [4+28'S 141+37'E], dry forest, 250 m, 3.vi.1963, R. Straatman; BPBM. *Paratypes*: Papua New Guinea. BPBM: New Guinea NE, Ambunti [4+14'S 142+49'E], Sepik R., 50 m, 1@ (terminalia slide 508), 10.v.1963, R. Straatman. Irian Jaya. HECO: The following were collected by Dr. S.G. Burgers on The Kaiser Augustaf. Exp. to D.N. Guinea: Hauplg. b.

Malu, 1@, 3.ii.1913, 1@, 6.ii.1913; Lager am Rosensee, 1@, 15.ii.1913, 2\$\$, 14.ii.1913; Standlager b. Malu, 1\$, iii-iv.1912; Maanderberg, 1\$, 21-30.viii.1913. Two specimens retained in the MCZ.

Etymology: The species is dedicated to Dr. R. Straatman who collected the holotype.

Description: *Male:* Head slightly exposed, interocular space slightly less than distance between minute ocellar spots (Fig. 2J). Pronotum suboval, widest near middle (Fig. 2I). Tegmina and wings fully developed extending beyond end of abdomen, former with oblique discoidal sectors. Hind wing with radial and media veins straight, simple, cubitus vein with five complete and one long incomplete branches, apical triangle small. Front femur Type B₂, with two to four large proximal spines and long row of piliform spinules; pulvilli on fourth tarsomere only on all legs, tarsal claws symmetrical, simple, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, hind margin convexly rounded, right and left paraprocts similar simple plates. Subgenital plate with pair of small similar styli one on each side of a shallow excision (Figs. 3E, F). Genitalia as in Fig. 3E: hook on right side, with preapical incision; median phallomere with distal enlargement terminating in group of small setae; sclerotized rod bends strongly in middle below median sclerite, terminating in group of setae. Left phallomere consisting of several small sclerites.

Colouration: Head black or dark reddish brown, ocellar spots yellowish (Fig. 2J). Pronotum black with wide lateral orange zones (Fig. 2I). Tegmen black except for distinct narrow (variable in size) oblique yellow macula at base of anal field (Fig. 2I). Hind wing very dark. Abdomen and cerci black. Legs dark reddish black.

Female: Similar to male. Supraanal plate transverse, hind margin with shallow medial excision.

Measurements (mm) (\$ in parentheses): Length, 8.0-9.3 (9.0-10.7); pronotum length x width, 2.5-2.7 x 3.7-4.0 (2.6-2.8 x 3.9-4.1); tegmen length, 9.5-9.8 (8.8-9.4); interocular width, 0.7 (0.7).

Comments: The broad lateral orange zones on the pronotum of *straatmani* are distinctive. *Allacta luteomarginata* (Hanitsch) from Singapore has a completely dark head and its pronotum is blackish brown with broad yellowish-hyaline lateral zones (Roth 1991: figs. 30A, B). The median and accessory median phallomeres (Roth 1991, fig. 30G) differ distinctly between the two taxa. The male genitalia of *straatmani* relates it more closely to *grandcolasi* than to others in

the species group.

polygrapha - species group

Diagnosis: Head with a medial longitudinal stripe extending from occiput or vertex to clypeus (Figs. 4A, 8A, 9A), or with transverse facial markings (Roth 1991: fig. 29A). Pronotal disk usually with large symmetrical pattern of dark dots, lines, or blotches (Fig. 9B). Tegmina usually checkered with dark cells between veinlets, and with one or more larger blotches (Fig. 9D). The tegmina and wings of females in this species group (in New Guinea) are usually variably reduced. The similarity between females of these species, and variability in color pattern intraspecifically makes it difficult to identify that sex in most species. This is particularly true because of the paucity of topotypic males and females so that the extent of variation is unknown. Also a number of species are sympatric which makes matching some females with a particular male equivocal. For this reason I have usually not designated females as paratypes, unless their color markings were very similar to males (e.g., *A. persoonsi*).

Species: *brossuti* spec. nov.; *deleporte* spec. nov.; *gautieri* spec. nov.; *nalepae* spec. nov.; *persoonsi* spec. nov.; *srengi* spec. nov.

Two females (Normanby, Wakaiuna I., Wakaiuna, Sewa Bay, 21-30.xi.1956 and 11-20.xii.1956, leg. W.W. Brandt) have almost completely dark heads (no longitudinal facial band) but their pronota and tegminal markings are typical of the *polygrapha* group. Their legs and abdomens are dark brown to black. They may be a new species but males are needed to determine this. It is possible that they are melanistic forms of one of the described taxa.

Allacta gautieri spec. nov. (Figs. 1, 4A-H)

Material examined: *Holotype:* male (terminalia slide 513), Mt. Missim [7+°+20'S 146+°+43'E], New Guinea (NE) [Papua New Guinea], Malaise trap, 7.xii.1966, G.A. Samuelson. *Paratypes:* Papua New Guinea. BPBM: same locality as holotype, 1@ (terminalia slide 512), 1500-2000 m, 15-21.iv.1968, J. & M. Sedlacek. Additional material.- Papua New Guinea. BPBM: Wau [7+°+20'S 146+°+43'E], 1150-1600 m, 1\$, 9.ii.1968, J. Sedlacek; Busu R. [6+°+36'S 147+°+00'E], E. of Lae [6+°+43'S 147+°+00'E], 100 m, 1\$, 15.ix.1955, J.L. Gressitt. Karimui [6+°+32'S 144+°+47'E], 1080 m, 1\$, 13.vii.1963, J. D. Sedlacek.

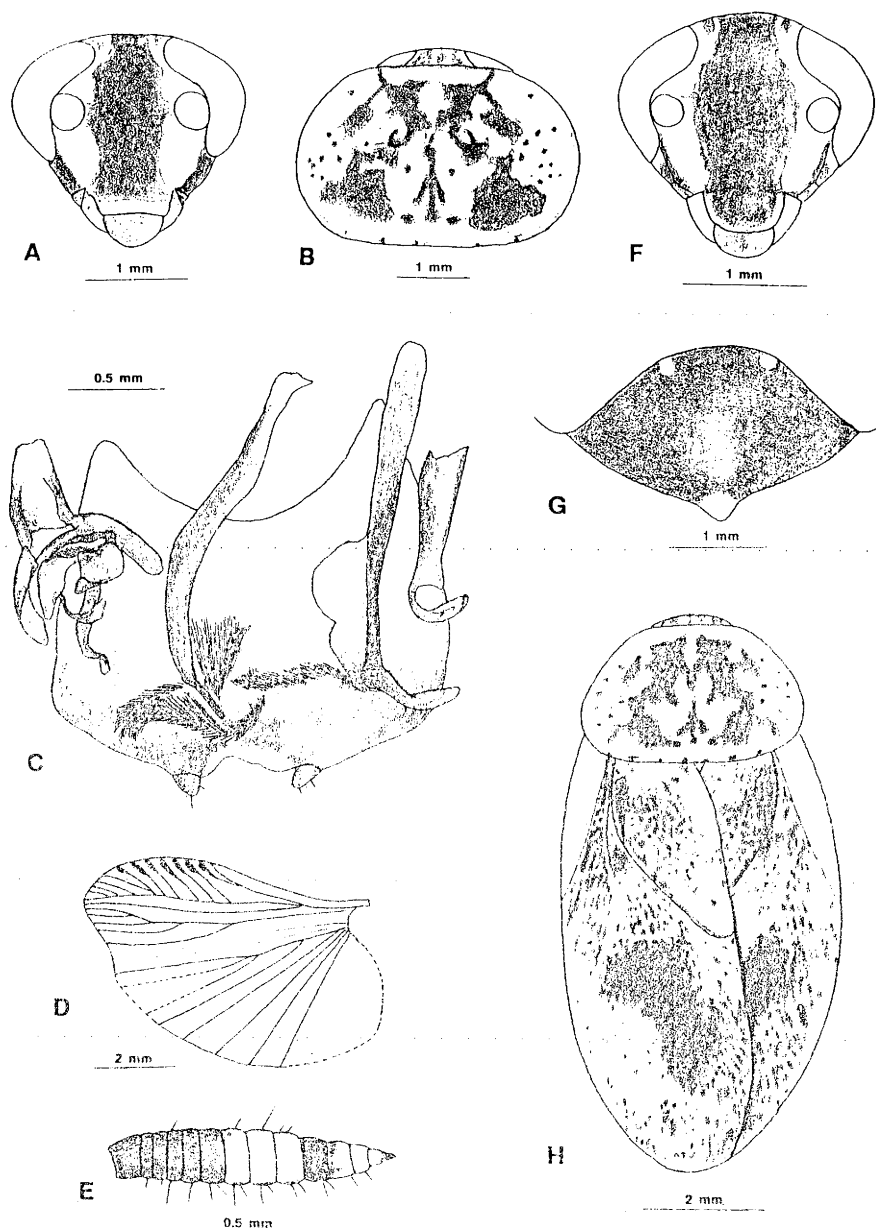
Etymology: The species is dedicated to Dr. J.Y.

Gautier, Université de Rennes, France, for his contributions to our knowledge of cockroach biology and taxonomy.

Description: *Male:* Head slightly exposed, interocular width less than space between antennal sockets (Fig. 4A). Pronotum subelliptical, widest at middle (Fig. 4B).

Tegmina and wings fully developed extending well beyond end of abdomen, discoidal sectors of former oblique. Front femur Type B₂ with three large proximal spines; pulvilli only on fourth tarsomere of all legs, tarsal claws simple, symmetrical, arolia well developed. Abdominal terga unspecialized; supraanal plate strongly transverse, hind margin convex, entire, right

Figure 4. *Allacta gautieri* sp. n. A - C) = head; B = pronotum; c) = subgenital plate and genitalia (dorsal); D - H) = females: D, E) = from Busu R., left hind wing, and cercus; F - H) = from Karimui: F) = head; G) = subgenital plate (ventral); H) = habitus.



and left paraprocts similar simple plates. Subgenital plate with a pair of small similar styles separated by shallowly excised margin (Fig. 4C). Genitalia as in Fig. 4C: hook on right side with preapical incision; median phallomere with large flange on distal half, apical region curved laterally and with some minute spicules along edge; accessory median phallomere broad, becoming narrow at apex where it is surrounded by large setose membrane; left phallomere consisting of several simple sclerites.

Colouration: Yellow and dark reddish brown. Head yellow with broad dark reddish brown longitudinal stripe from occiput to distal region of clypeus, labrum dark (Fig. 4A); maxillary palpomeres three and four pale, terminal segment darker with pale apex; proximal antennomeres yellowish on upper surface, darker below, remaining segments light brown. Pronotum with symmetrical dark brown pattern of blotches, lines, and dots, few dark dots in pale lateral zones (Fig. 4B). Tegmina mottled with yellowish white veins, cells between veinlets dark with large reddish brown blotches. Legs yellowish brown with black markings as follows: front coxae black at base, mid and hind coxae black basally and along outer margins; front femur dorsal margin and anterior surface base and apex black, ventral margin posterior surface black; tibiae with dark rings at base, apex, and middle; first tarsal segment with dark rings at base and apex, second and third tarsomeres dark. Abdominal terga dark brown laterally, middle zones mixture of light and dark. Abdominal sterna with broad medial area light brown, remaining lateral zones dark brown, distal half of subgenital plate pale. Cerci with five dark proximal segments succeeded by three cercomeres partly pale and dark (along lateral margins) then dark segment and three terminal pale segments.

Female: Head with interocular space slightly less than distance between antennal sockets (Fig. 4F); maxillary palpomeres three and four pale, the fifth dark. Pronotum subelliptical, widest behind middle (Fig. 4H). Tegmina and wings fully developed reaching tip of abdomen, former with oblique discoidal sectors (Fig. 4H). Hind wing with simple costal veins except for branched third one from apex, distally clubbed or thickened; radial vein straight, simple, media straight, simple or forked apically, cubitus vein weakly curved with four or five complete (one may be forked) and no incomplete branches, apical triangle obsolete (Fig. 4D). Front femur Type B₂ with four large proximal spines; pulvilli on fourth proximal tarsomere only, tarsal claws simple, symmetrical, arolia present. Supraanal plate strongly transverse, hind margin convex, apex arched.

Colouration: Head occiput with narrow, black or reddish brown curved lateral stripe near each eye, medially with pair of stripes that fuse on vertex, widen longitudinally and extend to clypeus, labrum lighter, background color yellow (Fig. 4F). Pronotum with black or reddish brown symmetrical pattern on pale background, lateral zones semihyaline sprinkled with white and dark dots (Fig. 4H). Tegmina with pair of dark reddish brown blotches in anal vein area, and larger pair on distal half (Fig. 4H). Abdominal terga with yellow and brown areas. Abdominal sterna dark brown to blackish, sprinkled with yellow spots; subgenital plate very dark with pair of small yellow dots near anterior margin and at apex of hind margin, medial region may be tinged with reddish brown (Fig. 4G). Cerci with six black basal segments succeeded by three pale, one dark then two pale cercomeres, apex dark (Fig. 4E). Legs with dark rings on femora, tibiae, and tarsi.

Measurements: (mm) (\$ in parentheses): Length, 9.0-10.0 (8.0-10.0); pronotum length x width, 2.5-2.6 x 3.9-4.0 (2.1-2.5 x 3.8-4.3); tegmen length, 13.5-14.0 (7.4-8.1); interocular width, 0.7 (0.8-1.0).

Comments: A male specimen from U. Watut, SW [7°+11'S 143°+39'E], 1300-1600 m, 1@ (terminalia slide 519), 1.v.1963, J.L. Gressitt, differs from the type males of *gautieri* in having distinctly smaller tegmina and wings that reach to a little beyond end of abdomen and its habitus resembles that of a female. I provisionally labelled it *Allacta* sp., close to *gautieri* because its genitalia come closest to this species.

Measurements (mm): Length, 9.0; pronotum length x width, 2.5 x 4.1; tegmen length, 8.9; interocular width, 0.7.

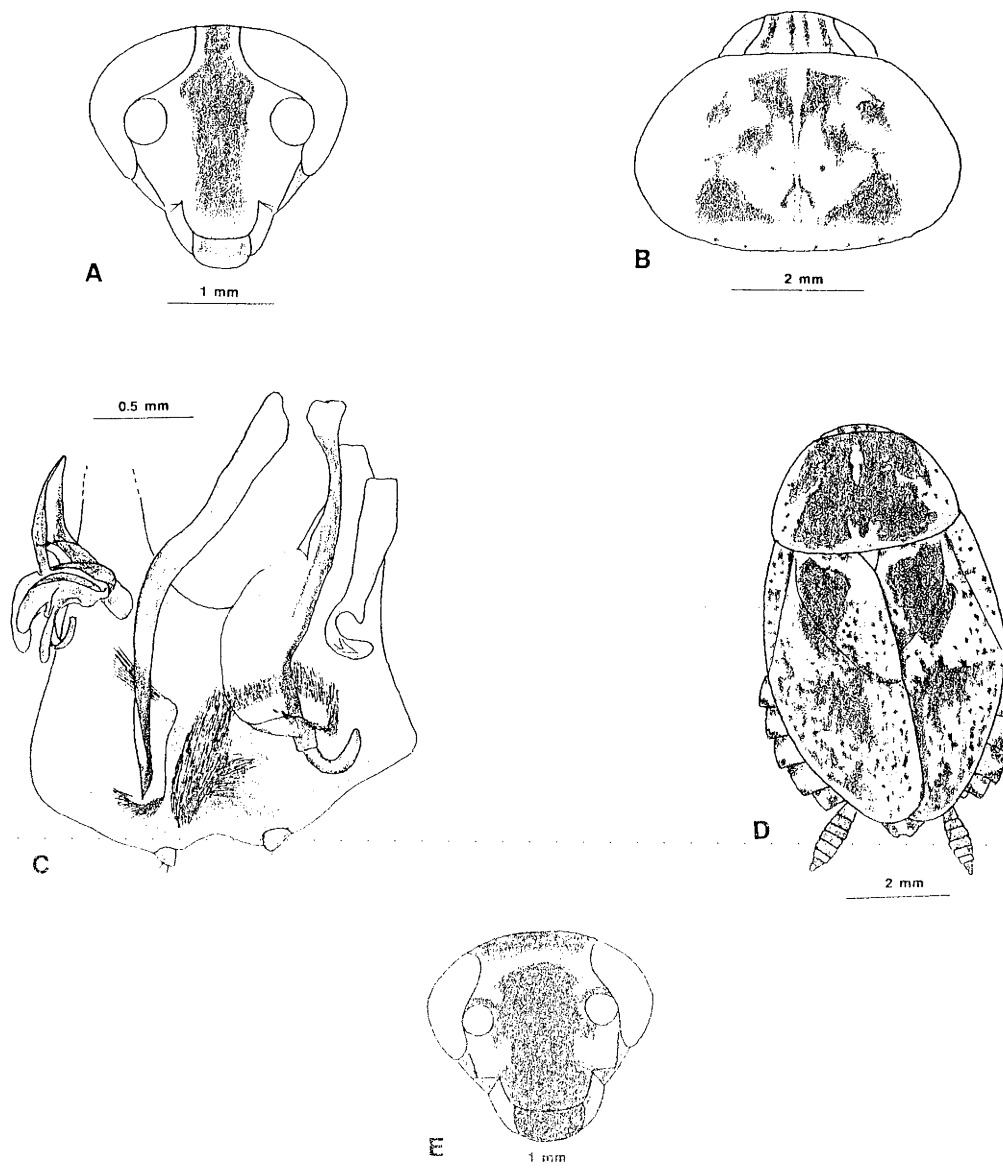
***Allacta brossuti* spec. nov.**
(Figs. 1, 5A-C)

Material examined: *Holotype:* male (terminalia slide 517), New Guinea (NW) [Irian Jaya], SE. Biak I. [1°+00'S 136°+06'E], light trap, 1.vii.1962, J.L. Gressitt & J. Sedlacek; in BPBM.

Etymology: The species is dedicated to Dr. R. Brossut of the Université de Bourgogne, Dijon, France, for his contributions to our knowledge of cockroach biology.

Description: *Male:* Head slightly exposed, eyes close together, interocular width distinctly less than space between antennal sockets (Fig. 5A). Pronotum subelliptical, widest behind middle (Fig. 5B). Tegmina and wings fully developed extending well beyond end

Figure 5. A - C) = *Allacta brassuti* sp. n., male holotype: A) = head; B) = pronotum. C) = subgenital plate and genitalia (dorsal); E, D) = *Allacta* sp., female from Tsenga, habitus and head.



of abdomen, former with oblique discoidal sectors. (Wings were stuck to the abdomen and therefore were not spread). Front femur Type B₂ with three large proximal spines; pulvilli only on fourth proximal tarsomere of all legs, tarsal claws symmetrical, simple, arolia well developed. Abdominal terga unspecialized; supraanal plate strongly transverse, hind margin convexly rounded; right and left paraprocts similar, simple sclerotized plates. Subgenital plate almost symmetrical with pair

of small similar styli separated by shallowly excavated margin (Fig. 5C). Genitalia as in Fig. 5C: hook on right side with preapical incision; median phallomere with membrane on distal half, apically curved, hook-like and minutely spined; associated median phallomere dark broad rod terminating in membrane, setose at both ends; left phallomere consisting of several simple sclerites.

Colouration: Head yellow with four small dark stripes on occiput, one curved on each side next to eyes, two median ones less distinct; black longitudinal stripe extends from vertex to proximal half of clypeus, distal half yellowish brown, labrum brownish (Fig. 5A); maxillary palpi yellow, base of fifth palpomere dark. Pronotum yellow, disk with dark reddish brown symmetrical pattern, few dark dots (Fig. 5B). Tegmina with yellow veins and large reddish brown maculae, small cells between veinlets dark giving checkered appearance, anterior edge without dark spots. Abdominal terga brownish mottled with light and dark areas. Abdominal sterna with distal segments pale medially, dark laterally. Cerci with segments one to five dark brown, six to ten whitish, 11 and 12 dark, cercomerites 13-15 white, apex dark.

Female: Unknown.

Measurements (mm): Length, 9.8; pronotum length x width, 2.4 x 3.6; tegmen length, 10.1; interocular width, 0.4.

***Allacta* sp. B**
(Figs. 5D, E)

Material examined: Papua New Guinea. BPBM: Daulo Pass [5°55'E 145°18'E], 2400 m, Asaro-Chimbu div., 15.vi.1955, 1\$, 12.vi.1955, J.L. Gressitt; 13 km SE. of Okapa [6°32'S 145°41'E], 1\$, 26.viii.1964, J. & M. Sedlacek.

Description: *Female:* Head slightly exposed, eyes wide apart, interocular space slightly more than distance between antennal sockets (Fig. 5E). Tegmina and wings reduced, reaching to end of abdomen (Fig. 5D) or only to about sixth tergum. Front femur Type B₂ with one to three large proximal spines; pulvilli only on fourth proximal tarsomere, tarsal claws simple, symmetrical, arolia small. Supraanal plate transverse, apex of hind margin shallowly concave.

Colouration: (based mainly on specimen from near Okapa; female from Daulo Pass is badly discolored). Head occiput dark with pair of round yellow maculae, vertex with transverse yellow stripe succeeded by broad blackish longitudinal band extending to clypeus (Fig. 5E). Pronotal disk with large blackish brown macula with few pale markings, lateral border zones hyaline with few dark dots (Fig. 5D). Tegmina with large reddish brown maculae separated by yellowish vein areas (Fig. 5D). Abdominal terga black and yellow, supraanal plate black with longitudinal medial yellow stripe. Subgenital plate dark reddish brown with yellowish anterior border and pale diffuse medial zone,

remaining sterna mottled with small dark dots. Cerci blackish, with couple of terminal segments pale on dorsal surface. Legs with infuscated coxae, femora with dark basal and apical bands, tibiae and tarsi with dark incomplete rings.

Measurements (mm): Length, 8.1-9.2; pronotum length x width, 2.2-2.3 x 3.7-3.8; tegmen length, 5.1-6.0; interocular width, 1.2.

Comments: One of the females from Daulo Pass has the same collection data as the holotype male of *deleporte*, but it and the second female have a yellowish transverse band anterior to the antennal sockets, which is absent in the male of that species. The females of sp. B differ from the female which I have determined as *deleporte* in length of tegmina, interocular width, and color pattern of head and pronotum.

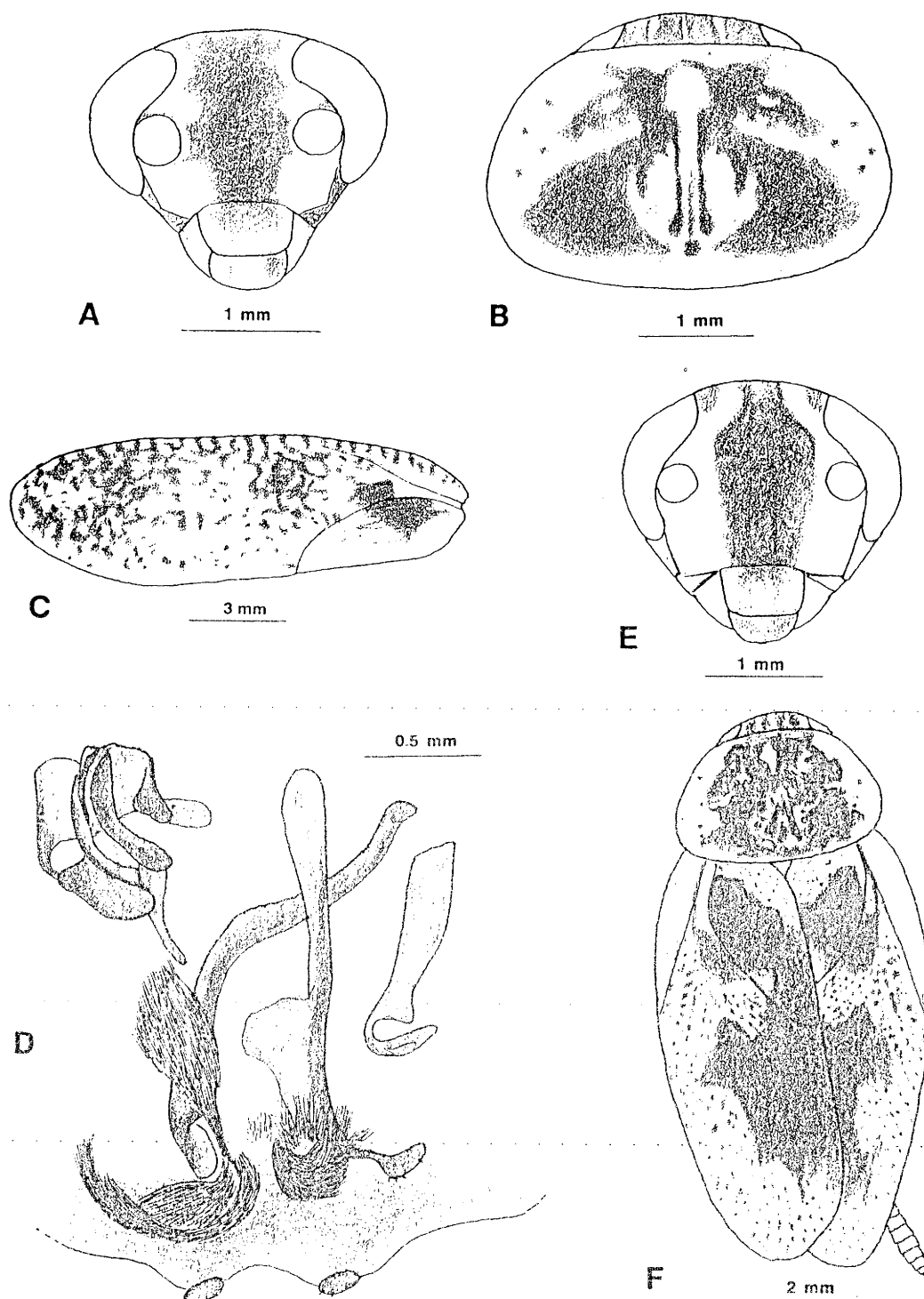
***Allacta deleporte* spec. nov.**
(Figs. 1, 6A-F)

Material examined: *Holotype:* male (terminalia slide 515), New Guinea (NE) [Papua New Guinea], Daulo Pass [5°55'E 145°18'E], 2400 m, Asaro-Chimbu div., 15.vi.1955, J.L. Gressitt; in BPBM. *Paratype:* Papua New Guinea. BPBM: New Guinea (NE), Purosa [6°45'S 145°35'E], 20-26 km SE. of Okapa [6°32' 145°41'E], 1800-2020 m, 1@ (terminalia slide 518), 28.viii.1964, J. & M. Sedlacek. Additional material.- Papua New Guinea. BPBM: New Guinea (NE), 13-20 km SE of Okapa [6°32'S 145°41'E], 1650-1770 m, 1\$, 26.viii.1964, J. & M. Sedlacek; New Guinea (NE), Tsenga [5°26'S 144°36'E], Upper Jimmi V., 2\$, 15.vii.1955, J.L. Gressitt.

Etymology: The species is dedicated to Dr. Pierre Deleporte, University of Rennes, for his contributions to our knowledge of cockroaches.

Description: *Male:* Head exposed, interocular space about same or slightly less than distance between antennal sockets (Fig. 6A). Pronotum subelliptical, widest near middle (Fig. 6B). Tegmina and wings fully developed extending well beyond end of abdomen, former with oblique discoidal sectors. Front femur Type B₂, with one large proximal spine; pulvilli on fourth proximal tarsomere, tarsal claws symmetrical, simple, arolia present. Abdominal terga unspecialized. Supraanal plate transverse, hind margin shallowly convex, right and left paraprocts similar plates. Subgenital plate with pair of small, deflexed similar styli, interstyler margin concave (Fig. 6D). Genitalia as in Fig. 6D: hook on right side, with preapical incision; median phallomere with apex

Figure 6. *Allacta teleportei* sp. n., male holotype: A) = head; B) pronotum; C) = left tegmen; D) = genitalia and hind margin of subgenital plate; E - F) = female from Daulo Pass Papua New Guinea, head and habitus.



curved and slightly enlarged, distal region with large lateral membrane; accessory median phallomere broad throughout, apex rounded and with large setose membrane; left phallomere consisting of several simple sclerites.

Colouration: Head yellowish, occiput with four broad light reddish brown stripes that join darker reddish brown band extending from vertex to clypeus, labrum yellowish white (Fig. 6A); maxillary palpomeres three and four pale, fifth segment dark. Pronotum with large symmetrical reddish brown pattern on white and yellowish background, lateral zones with small hyaline areas and opaque white with several small reddish brown dots (Fig. 6B). Tegmina with large reddish brown maculae and smaller dots, veins whitish (Fig. 6C). Abdominal terga and sterna with small dark dots, subgenital plate whitish. Front coxae with small basal and apical brown marks, mid and hind coxae dark (appear to be discolored); femora with dark basal and apical maculae, tibiae and tarsi with dark rings. In male paratype mid and hind coxae have small white basal maculae and cerci are pale on both surfaces.

Female: Head slightly exposed, interocular width less than distance between antennal sockets. Pronotum subelliptical, widest near hind margin (Fig. 6F). Tegmina and wings well developed extending beyond end of abdomen (Fig. 6F). Most legs missing. Supraanal plate transverse, trigonal, apex weakly concave, not quite reaching hind margin of subgenital plate.

Coloration: Head with blackish stripe from vertex to basal half of clypeus, background color on face and occiput whitish, labrum pale (Fig. 6E); maxillary palpomeres three and four pale, terminal segment weakly infuscated basad. Pronotum with reddish brown pattern on yellowish and whitish background, broad lateral borders hyaline with small dots. Tegmina with large reddish brown maculae as in Fig. 6F.

Measurements (mm) (\$ in parentheses): Length, 9.5 (9.0-10.4); pronotum length x width, 2.1-2.2 x 3.3-3.5 (2.6-3.0 x 4.0-4.7); tegmen length, 12.0-13.6 (8.5-9.4); interocular width, 0.9-1.0 (0.9-1.0).

Comments: The color patterns on the pronotum and tegmina are slightly different and darker in the male paratype, but the genital phallomeres are almost identical in both type specimens.

Allacta persoonsi spec. nov.

(Figs. 1, 7A-H)

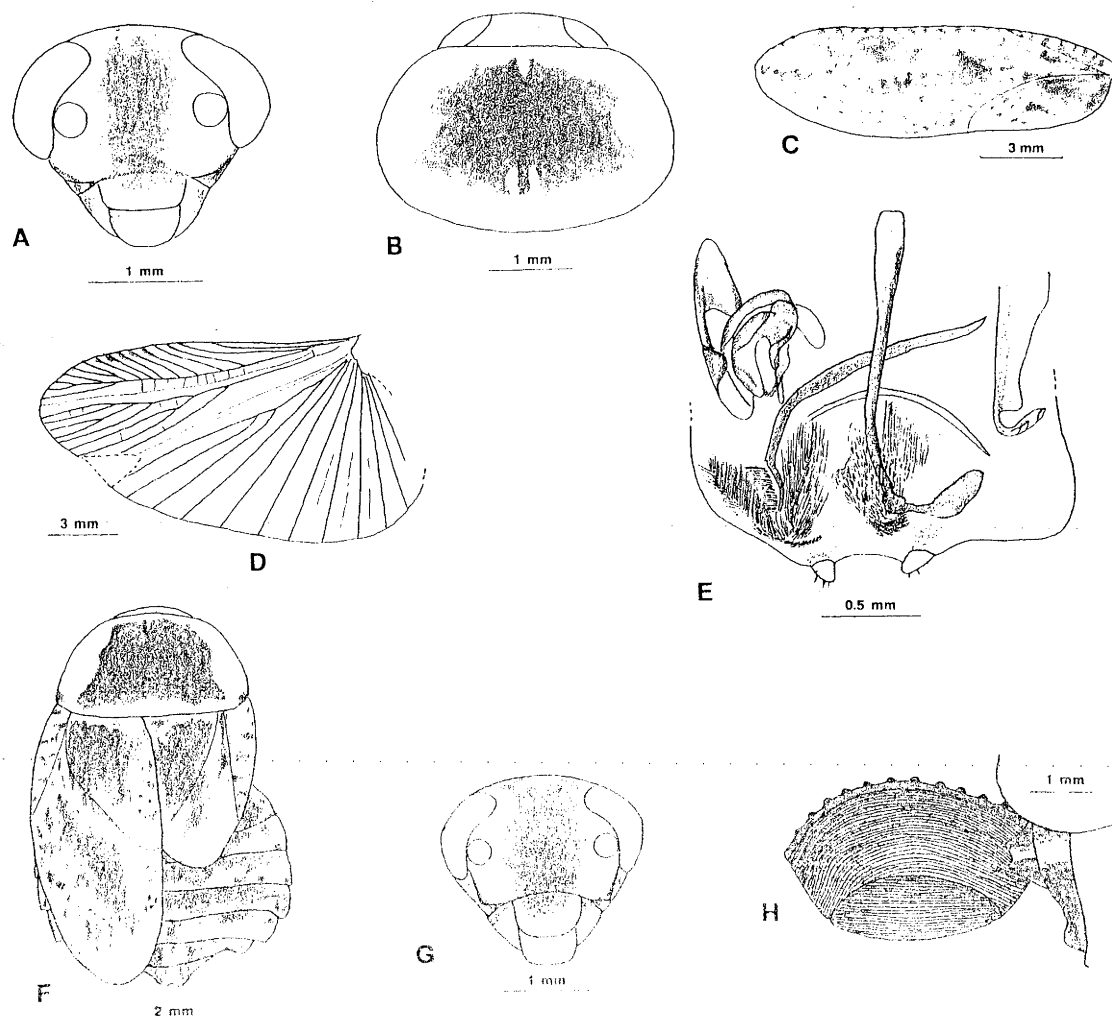
Material examined: *Holotype*: male, New Guinea (NE) [Papua New Guinea], Tsenga [5+°+26'S 144+°+36'E], Upper Jimmi V., 14.vii.1955, J.L. Gressitt; in BPBM. *Paratypes*.- Papua New Guinea. BPBM: same data as holotype, 1@ (terminalia slide 511), 1\$ (carrying ootheca), 1@, 13.vii. 1955. One retained in MCZ.

Etymology: The species is dedicated to Dr. C.J. Persoons of the Netherlands Organization for Applied Scientific Research, who was the first to identify the female sex pheromones of *Periplaneta americana*.

Description: *Male*: Head exposed, interocular space slightly less than distance between antennal sockets (Fig. 7A). Pronotum subelliptical, widest near middle (Fig. 7B). Tegmina and wings fully developed extending well beyond end of abdomen, former with oblique discoidal sectors. Hind wing with proximal seven costal veins clubbed, radial vein simple, straight, cubitus vein almost straight with five complete (two bifurcate) and no incomplete branches, apical triangle small (Fig. 7D). Front femur Type B₂ with three large proximal spines; pulvilli only on fourth proximal tarsomeres, tarsal claws symmetrical, simple, arolia small. Abdominal terga unspecialized. Supraanal plate strongly transverse, hind margin shallowly convex, entire, right and left paraprocts similar simple sclerites. Subgenital plate with pair of small similar styli separated by weakly concave interstyler margin (Fig. 7E). Genitalia as in Fig. 7E: hook on right side with preapical incision; median phallomere distally swollen and with large setose membrane lying above it; two rodlike sclerites curve under median phallomere, one very dark terminating in large dense group of setae, other much more slender and unmodified distally; left phallomere consists of several small sclerites.

Colouration: Yellow and dark reddish brown. Head yellow with a wide longitudinal stripe between antennal sockets extending from vertex almost to distal margin of clypeus, labrum yellow (Fig. 7A); maxillary palpomeres three and four pale, segment five slightly darker; antennae yellow. Pronotal disk with large reddish brown macula that may be almost solidly dark (Fig. 7B), or with variable amounts of dull yellowish areas or small symmetrical dots and lines, broad lateral and narrow anterior and posterior zones subhyaline yellow. Tegmina hyaline, veins yellowish or white, reddish brown between veins and veinlets, and two or three small solidly dark areas (Fig. 7C). Wings clear, veins yellowish, some infuscation for short

Figure 7. *Allacta persoonsi* sp. n. A - E) = males: A = head; B) = pronotum; C) = left tegmen; D) = left hind wing (apical triangle region damaged); E) = subgenital plate and genitalia (dorsal); F - H) female: F) = habitus; G) = head; H) = Ootheca attached to the end of the subgenital plate (dorsal view of supraanal plate which is partly hidden by the apex of the left tegmen; the ootheca is rotated to the left so that its flat bottom surface is visible). (A - D, from holotype, E - H, from paratype, same locality as holotype).



distance on margin posterior to apical triangle. Abdomen dark reddish brown, supraanal and subgenital plates yellowish brown. Legs yellowish brown with dark brown bands: coxae and femora dark brown in basal and distal regions; metatarsi darkly ringed at base, apex, and middle. Cerci light brown.

Female: Shorter and stockier than male. Interocular space slightly less than distance between antennal sockets (Fig. 7G). Pronotum subparabolic (Fig. 7F). Tegmina reduced reaching to end of abdomen (left tegmen), right tegmen abnormal reaching only to

fourth abdominal tergum (Fig. 7F). Hind wing vestigial, lateral, reaching only to first abdominal tergum. Brown areas much darker than male. Pronotal macula solidly dark (Fig. 7F). Abdominal tergadark with lateral yellow spots on segments two to five, sixth mostly yellow, segment seven dark with two medial yellow longitudinal stripes, supraanal plate with narrow yellow stripe medially (Fig. 7F). Abdominal sterna with large dark medial macula on proximal segments, lighter areas with dark dots, subgenital plate blackish, anterior margin yellow.

Measurements (mm) (\$ in parentheses): Length, 9.0-9.2 (7.0); pronotum length x width, 2.2 x 3.4-3.5 (2.2 x 3.6); tegmen length, 12.0-12.8 (5.5); interocular width, 0.7-0.8 (1.2).

Ootheca: The ootheca carried by the female is attached to the tip of the subgenital plate by a small piece of dried membrane and is rotated to the left at a 45° angle (Fig. 7H). This suggests that the egg case was being rotated prior to its deposition, but that is questionable since the *Pseudophyllodromiinae* normally do not rotate their oothecae. It is possible that the egg case was being deposited in the vertical position but accidentally assumed a 45° angle when the female was collected. The ootheca is reddish brown, bulbous, with a flat bottom that suggests it is probably cemented vertically to a surface (perhaps on leaves) with its keel directed dorsad; the keel has 15 distinct rounded serrations indicating the presence of 15 eggs; the outer walls have many fine curved parallel ridges and no longitudinal egg cell demarcations are visible.

Measurements (mm): Length, 3.5; width, 2.0; height, 1.5.

The ootheca resembles the egg case of *Chorisoneura apolinari* Hebard (*Pseudophyllodromiinae*) but that species has considerably fewer parallel ridges in the outer membranous covering (Roth 1968: fig. 68).

***Allacta nalepae* spec. nov.**
(Figs. 1, 8A-H)

Material examined: *Holotype:* male (terminalia slide 514), New Guinea (NE) [Papua New Guinea], Karimui [6+°32'S 144+°47'E], 3.vi.1961, J.L. & M. Gressitt; BPBM. Additional material.- Papua New Guinea. BPBM: Mt. Karimui [6+°32'S 144+°47'E], 2100-2300 m, 1\$, 16-20.iv.1977, J.L. Gressitt *et al.*

Etymology: The species is dedicated to Dr. Christine A. Nalepa, North Carolina State University, for her contributions to our knowledge of *Cryptocercus* biology.

Description: *Male:* Head with interocular space about same as distance between antennal sockets (Fig. 8A). Pronotum subelliptical widest near middle (Fig. 8B). Tegmina and wings fully developed extending beyond end of abdomen, discoidal sectors of former oblique. Front femur Type B₂, with one large proximal spine; pulvilli on fourth proximal tarsomere only, tarsal claws simple, symmetrical, arolia present. Abdominal terga unspecialized. Supraanal plate trans-

verse, hind margin convexly rounded, medially slightly indented, right and left paraprocts similar simple plates (Fig. 8C). Subgenital plate with pair of small similar styli, interstyler margin concave (Fig. 8D). Genitalia as in Fig. 8D: hook on right side with preapical incision; median phallomere without lateral membrane, distal end scythe-like, apex not swollen; accessory median phallomere slender throughout with large apical setose membrane.

Colouration: Head with four dark occipital bands, the medial stripes fusing on vertex and extending as dark brown stripe to anteclypeus, labrum lighter, cheeks yellowish white (Fig. 8A). Pronotal disk with reddish brown pattern, broad lateral zones hyaline (Fig. 8B). Tegmina with large reddish brown maculae and small dots and patches, anterior costal region hyaline. Legs brownish yellow, coxae dark brown proximally and distally; femora with dark spots basad and near apices. Cerci pale, apex dark.

Female: Head exposed, eyes wide apart, interocular width greater than distance between antennal sockets (Fig. 8F). Pronotum subparabolic (Fig. 8H). Tegmina and wings reduced, former with oblique discoidal sectors, reaching only to sixth segment (Fig. 8H). Hind wings slightly smaller reaching to segment five, cubitus vein with five complete and no incomplete branches, apical triangle absent (Fig. 8E). Front femur Type B₂ with two large proximal spines; pulvilli on fourth proximal tarsomere only, tarsal claws symmetrical, simple, arolia small. Supraanal plate transverse, trigonal, apex, shallowly concave (Fig. 8H).

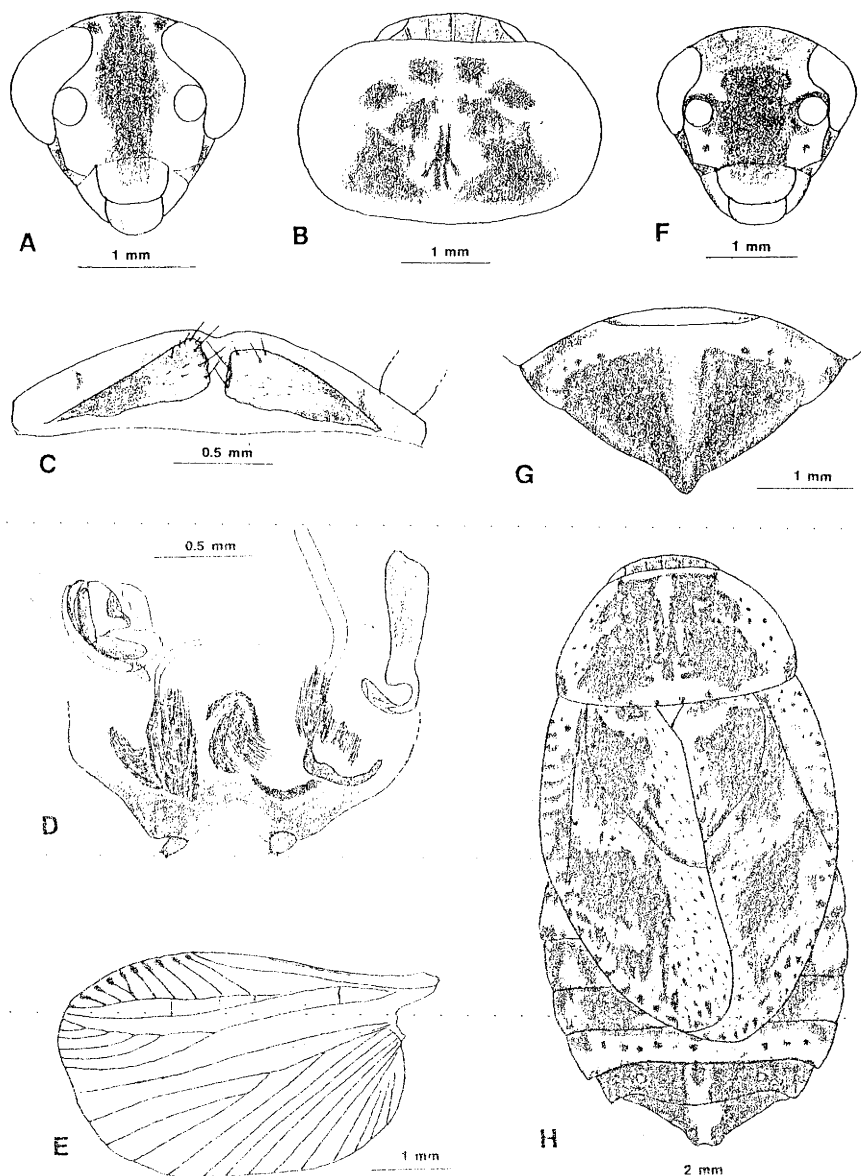
Colouration: Head with occiput light reddish brown and three small yellow spots; broad dark reddish brown stripe extends from vertex to clypeus, labrum and cheeks yellow (Fig. 8F). Pronotum with very dark reddish brown symmetrical pattern on yellow background, broad lateral zones opaque yellow with numerous small reddish brown dots (Fig. 8H). Tegmen with large reddish brown macula in anal vein area and one large and two smaller marks, rest of tegmen checkered with small dots (Fig. 8H). Abdominal terga mostly reddish brown with yellowish areas. Subgenital plate mostly reddish brown with narrow yellow band along anterior border and partway down middle (Fig. 8G). Coxae and femora with dark areas basad and apically; tibiae with dark rings basad, medially, and apically; tarsi with dark apical rings.

Measurements (mm) (\$ only): Length, 9.2; pronotum length x width, 2.3 x 3.7; tegmen length, 5.8; interocular width, 1.2.

Comments: The female was taken in the same area as the male type of *nalepae* but their head color patterns differ. However, I am provisionally considering them to be conspecific. The problem is exacerbated by

the fact that females from Karimui have colour patterns similar to those of what I have determined as *gautieri*. More males and females are needed to determine if the sexes have been properly matched.

Figure 8. *Allacta nalepae* sp. n. A - D) = male holotype: A) = head; B) = pronotum; C) = supraanal plate and paraprocts (ventral); D) = distal part of subgenital plate, and genitalia (dorsal); E - H) = female from locality as holotype: E) = hind wing; F) = head; G) = subgenital plate (ventral); H) = habitus.



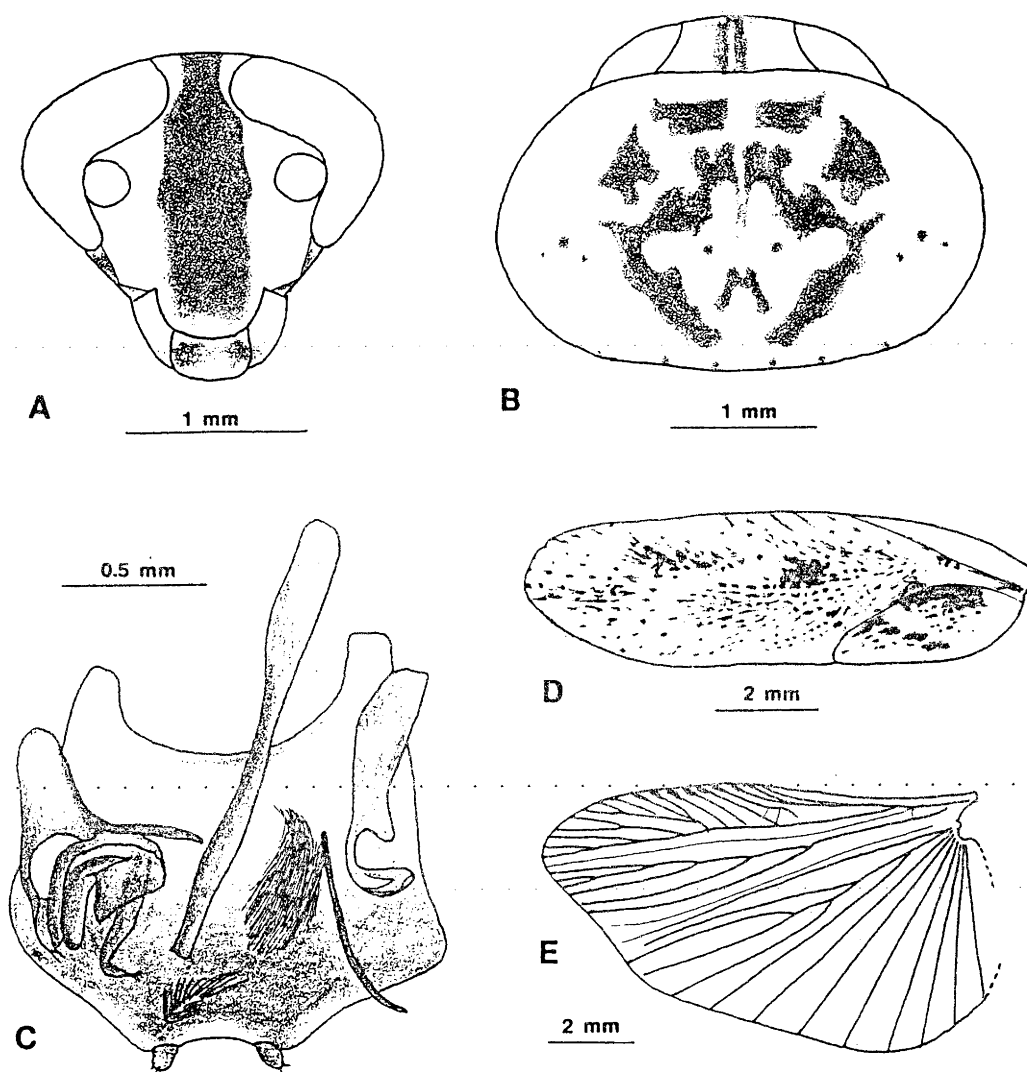
***Allacta srengi* spec. nov.**
(Figs. 1, 9A-E)

Material examined: *Holotype*: male (terminalia slide 516), New Guinea (NE) [Papua New Guinea], 10 km N. of Angoram [4°04'S 144°03'E], 10-30 m, 15.viii.1969, J.L. Gressitt; in BPBM. Additional material.- Papua New Guinea. BPBM: Star Mts., Sibil Val., [5°00'S 141°00'E], 1245 m, 1@ (terminal abdominal segments missing), 18.x.-8.xi.1961, L.W. Quate.

Etymology: The species is dedicated to Dr. Leam Sreng of the Centre National de la Recherche Scientifique, Marseille, France, for his contributions to our knowledge of cockroach pheromones.

Description: *Male*: Head with eyes close together, interocular space distinctly less than distance between antennal sockets (Fig. 9A). Pronotum subelliptical widest near middle (Fig. 9B). Tegmina and wings fully developed extending well beyond end of abdomen, former with oblique discoidal sectors. Hind

Figure 9. *Allacta srengi* sp. n., males: A) = head; B) = pronotum; C) = subgenital plate and genitalia (dorsal); D) = left tegmen; E) = left hind wing. (A - D, from holotype, E, F from Star Mts., Sibil Valley).

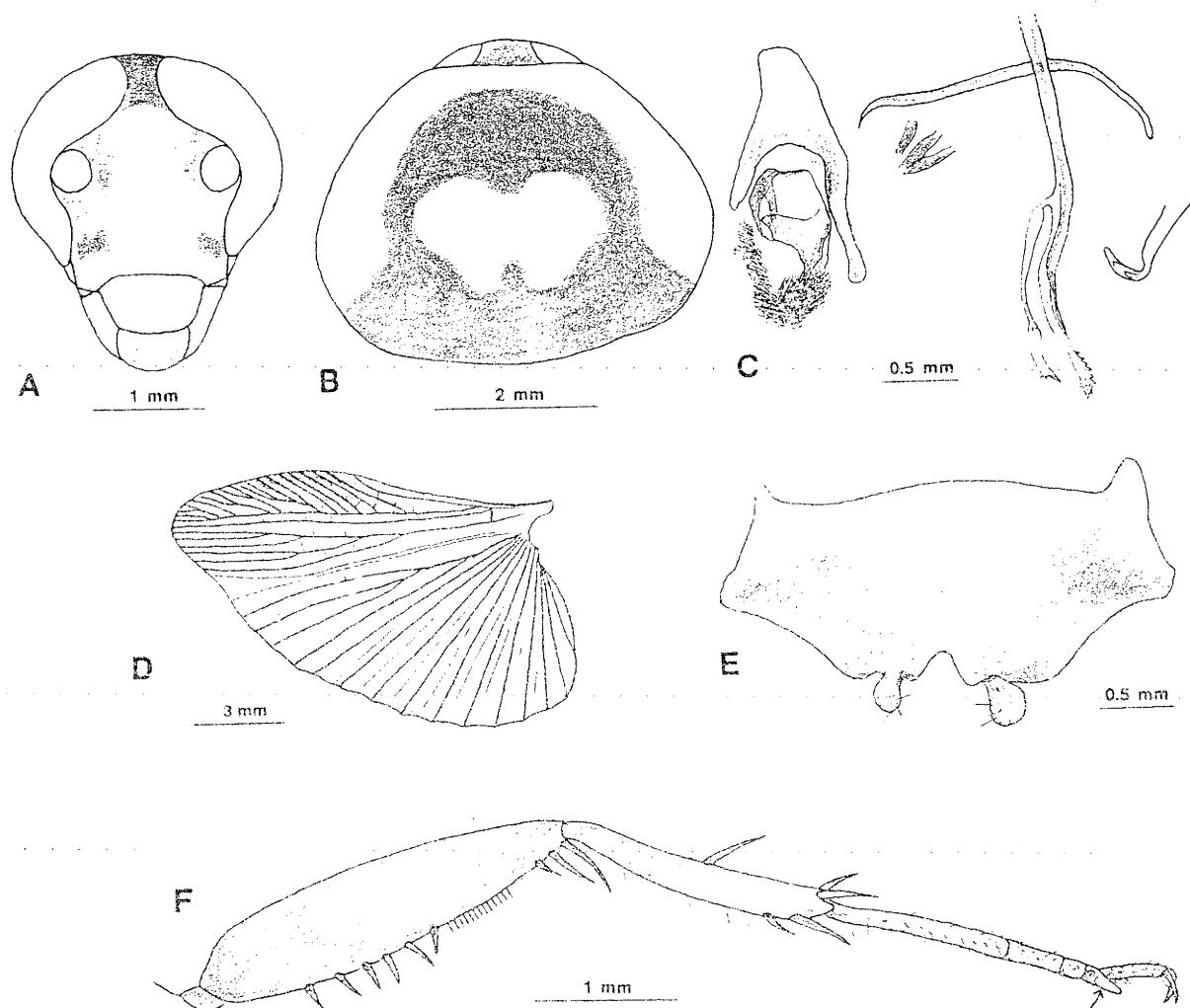


wing with simple and one multiple branched clubbed costal veins, radial and media veins simple straight, cubitus vein straight with four complete (one branch may be forked) and no incomplete branches, apical triangle subobsolete (Fig. 9E). Front femur Type B₂ with three large proximal spines; pulvilli on fourth proximal tarsomere only, tarsal claws simple, symmetrical, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, hind margin shallowly convexly rounded, right and left paraprocts similar simple plates. Subgenital plate with two small similar styli, interstyler margin weakly concave (Fig. 9C).

Genitalia as in Fig. 9C: hook on right side, with preapical incision; median phallomere rodlike, unmodified apically; accessory median phallomere a simple slender rod; two patches of setae, one on right side, and smaller one near apex of median phallomere.

Colouration: Head whitish with pair of very close dark brown longitudinal stripes that fuse on vertex, broaden and extend to about middle of pale clypeus, labrum darker, mandibles whitish (Fig. 9A); maxillary palpomeres pale, fifth segment weakly infuscated. Pronotum with reddish brown pattern on sparsley

Figure 10. *Allacta svensonoru* sp. n., male holotype: A) = head; B) = pronotum; C) = genitalia (dorsal); F) = front leg (anterior surface, coxa not shown; arrow indicates pulvillus on fourth tarsomere).



speckled white background (Fig. 9B). Tegmina with white veins, and three reddish brown blotches, some veins and cells between veinlets reddish brown giving checkered appearance (one large blotch occurs in anal vein area and two smaller ones in remaining part of the tegmen; Fig. 9D) (maculae larger on right tegmen). Front coxae pale, others dark brown; femora pale with dark brown basal and apical spots, tibiae and tarsi with dark spots. The leg markings of the Star Mts. male are more pronounced than those of the holotype.

Female: Unknown.

Measurements (mm) (the Star Mt. ♂ is larger than the holotype and is listed in brackets): Pronotum length x width, 2.0 x 3.1 [2.2 x 3.6]; tegmen length, 9.1 [11.4]; interocular width 0.4 [0.5].

hamifera - species group

Allacta svenssonorum spec. nov. (Figs. 10A-F)

Material examined: *Holotype*: male (terminalia slide 427), Borneo, Sarawak, Bako National Park, 26-31.xii.1978, Gärdenfors, Hall, Hansson, Samuelsson; in ZILS.

Etyymology: The species is named after Dr. Göran K. Svensson, biophysicist, and his wife Ingela, good friends and neighbors.

Description: *Male*: Head slightly exposed, eyes very close together, interocular space much less than distance between antennal sockets (Fig. 10A). Pronotum suboval, widest behind middle (Fig. 10B). Tegmina and wings fully developed extending beyond end of abdomen, former with oblique discoidal sectors. Hind wing with radial and media veins straight, simple, cubitus vein straight, with four complete (one forked) and no incomplete branches, apical triangle small (Fig. 10D). Front femur Type B₃ with five or six large proximal spines; pulvilli only on fourth proximal tarsomere, tarsal claws symmetrical, simple, arolii small (Fig. 10F). Abdominal terga unspecialized. Supraanal plate strongly transverse; hind margin convex; paraprocts simple similar plates. Subgenital plate hind margin medially excised (seen more clearly in slide preparation) with pair of small bulbous styli, right one slightly larger (Fig. 10E). Genitalia as in Fig. 10C: hook on right side, small, with preapical incision, median phallomere with minutely spicular apex, and slender process arising about near middle; slender, longitudinal, narrow, rodlike sclerite lies under median phallomere; left phallomere with large setose membrane.

Colouration: Head with occiput and vertex dark brown, remainder yellowish with some weakly dark areas near eyes and on cheeks (Fig. 10A). Pronotum with yellowish macula surrounded by dark brown, anterior and lateral regions yellowish, subhyaline (Fig. 10B). Tegmina reddish brown, hyaline, humeral field yellowish, distinct markings absent. Hind wing with costal vein zone yellowish, anal field weakly infuscated. Abdominal terga and sterna brownish yellow, lateral edges dark. Dorsal surface of cerci with three or four dark basal segments, remaining cercomeres pale. Legs brownish yellow.

Female: Unknown.

Measurements (mm): Length, 12.0; pronotum length x width, 3.6 x 4.9; tegmen length, 13.0; interocular width, 0.2.

Comments: The pronotal markings of *svenssonorum* resemble those of *Allacta interrupta* (Hanitsch) (Sarawak, Java) (Roth 1993: fig. 4A), *A. figurata* (Walker) (India) (Roth 1993: fig. 5B), and *A. maculicollis* (Hanitsch) (South Vietnam) (Roth 1991: fig. 33C). *Allacta svenssonorum* keys to couplet 11 in Roth (1993: 363) where it can be separated from *interrupta* and *figurata* by differences in head and tegminal markings.

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