Additional notes on the Sexavae of the Melanesian Subregion (Orthoptera, Tettigonioidea, Mecopodinae)

by

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ABSTRACT. — *Segestidea montana* sp.n. is described from the Eastern Highlands District, New Guinea. Its differential diagnosis is noted by revision of a part of the key to the species of the genus given in a previous paper (F. Willemse, 1977). On account of the synonymy of *Segestidea gracilis simulatrix* F. Willemse, 1977 and *Habetia defoliaria* Uvarov, 1924 the new combinations of *Segestidea defoliaria defoliaria* (Uvarov, 1924) and *Segestidea defolaria gracilis* (C. Willemse, 1957) are proposed. Some new faunistical data are given.

INTRODUCTION

Since a recent survey of the Sexavae (F. Willemse, 1977), some additional material became available. This contained some new faunistical data and a not yet described species of *Segestidea* I. Bolívar. Furthermore it was found that *Segestidea gracilis simulatrix* F. Willemse, 1977 is synonymous with *Habetia defoliaria* Uvarov, 1924.

SYSTEMATIC PART

Sexava nubila (Stål, 1874)

Material studied. — Z.Nw Guinea Exp. 1912, Kloofbivak, G. Versteeg (2 ♂, Instituut voor Taxonomische Zoölogie, Amsterdam). This hitherto unknown locality is covered by the known range of the species (F. Willemse, 1977: map 1).

Segestidea novaeguineae (Brancsik, 1897)
(fig. 9)

Material studied. — Gulf Distr., Murua Agr. Stat., near Kerema, VII.1959, F. X. Ryan, on *Cocos nucifera* and *Cacao* (3 ♂ 2 ♀); Morobe Distr., Bubia near Lae, VII.1961, J. H. Ardley (1 ♂); Madang Distr., Simba Valley, Tsembaga V, 4800 ft, 23.IX.1963, R. Rappaport (1 ♀); Eastern Highl. Distr., Amomenta near Aiyura, 5600 ft, 29.X.1963, J. H. Barett, on *Banana* (4 ♀) (all collection of Department of Primary Industry, Konedobu, Papua New Guinea). The species was not yet known from the Simba Valley and the Eastern Highlands District. The latter extends the known range of the species (F. Willemse, 1977: map 3) westernward.

Segestidea montana sp.n.
(figs 1—8, 11)

Material studied. — ♂ holo-, ♀ allotype, both labelled: Amomenta nr. Aiyura E. Highl. Distr., N. Guinea 5600 ft., on *Banana*, 1.II.1964, coll. J. H. Barrett; paratypes: New Guinea, Eastern Highlands District: Highl. Agric. Exp. Sta. Aiyura, 5400 ft, 23.II.1958, J. H. Barrett (6 ♂ 5 ♀); Aiyura, 5400 ft, 19.III.1963, ex *Banana*, J. H. Barrett (1 ♂); Amomenta near Aiyura, 5600 ft, on *Banana*, 22.X.1963 (1 ♂ 2 ♀), 29.X.1963 (4 ♂, 1 juv. ♂, 3 ♀, 1 juv. ♀; one male on *Pandanus*), 1.II.1964 (3 ♂ 3 ♀), J. H. Barrett. (holo-, allo-, 6 ♂ 5 ♀ paratypes in author's collection, other paratypes in collection of Department of Primary Industry, formerly Dep. of Agriculture, Stock and Fisheries, Konedobu, Papua New Guinea).

Additional material. — Papua, Central District, Tapini area, 6000 ft., V.1971, R. Straatman (1 ♀).

Description. — ♂ (figs 1-2), large. Fastigium of vertex obtusely pointed often with slightly fis-

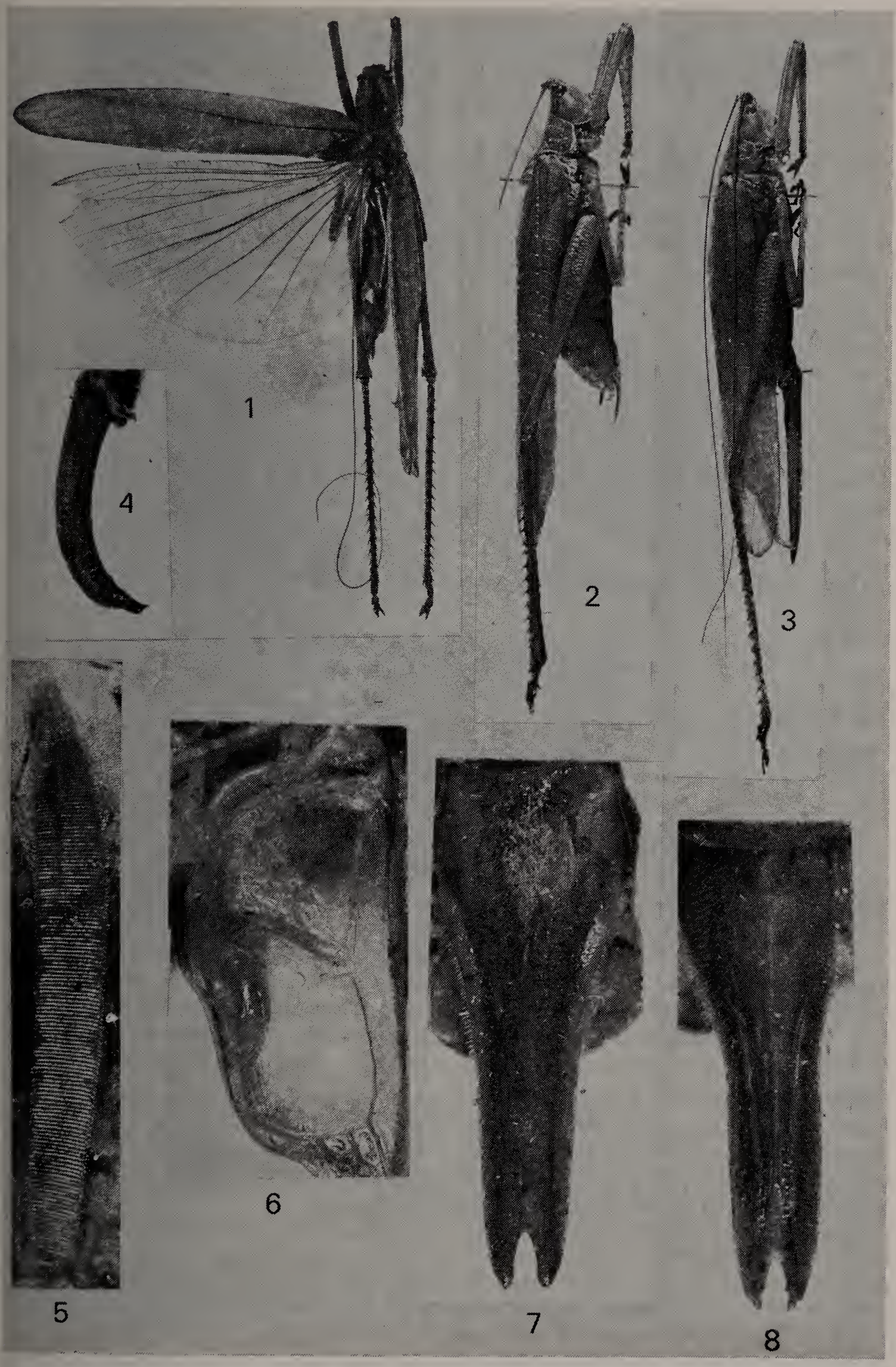

Fig. 1-8. *Segestidea montana* sp.n.: 1-2, ♂ holotype; 3, ♀ allotype; 4, left male cercus from above; 5-6, male stridulatory file and mirror; 7-8, male subgenital plate from below (all paratypes).

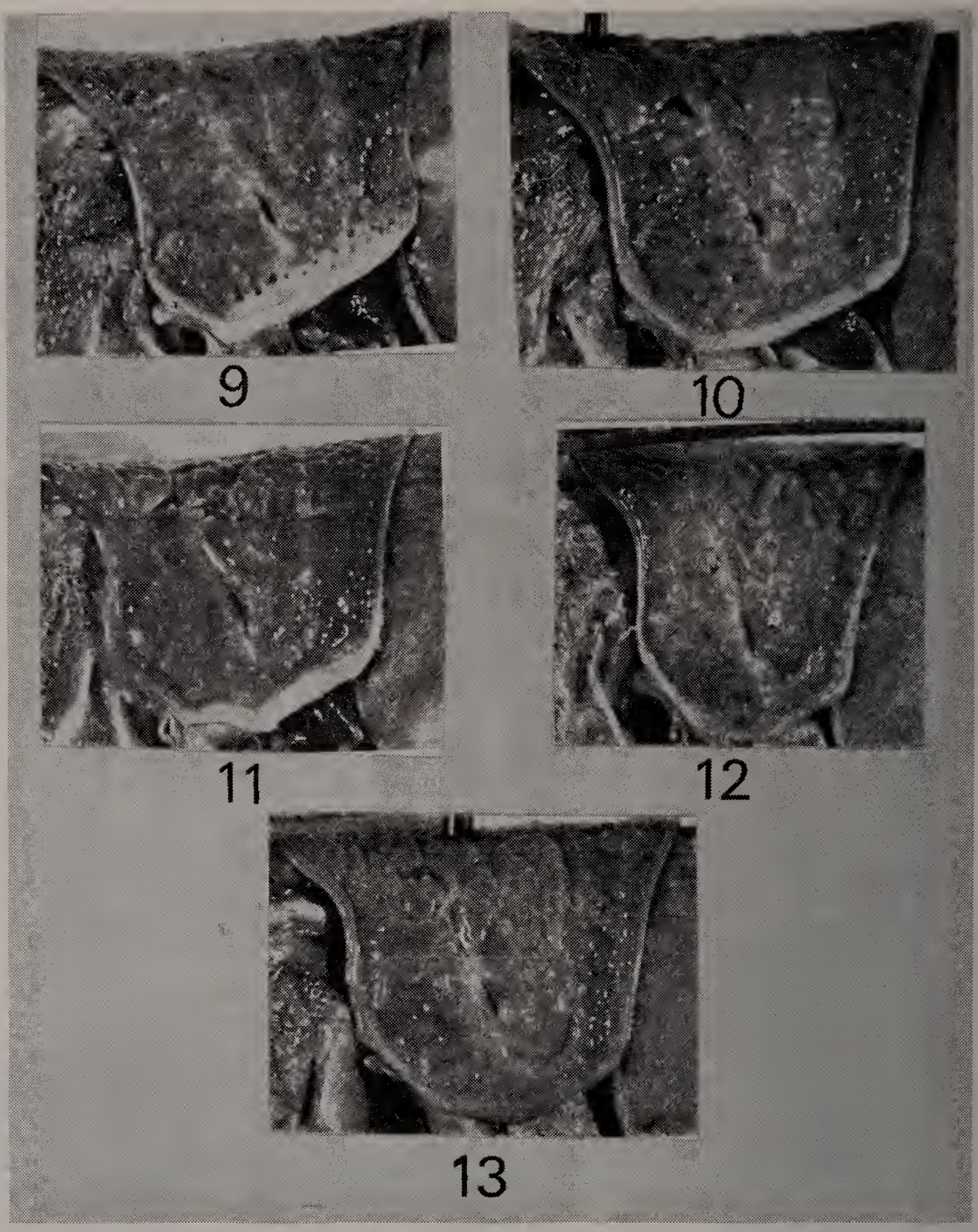

Fig. 9-13. Pronotal lateral lobe in *Segestidea,* right side of ♀; 9, *S. novaeguineae* (Brancsik) (Manam I.); 10, *S, rufipalpis* (C. Willemse) (allotype); 11, *S. montana* sp.n. (paratype); 12, *S. uniformis* (C. Willemse) (Pak I.); 13, *S. gracilis gracilis* (C. Willemse) (Mahur I.).

sate apex, slightly extending beyond antennal scrobae, but not reaching apical margin of scape. Pronotum slightly flattened medially, strongly rounded laterally, anterior margin slightly, posterior margin less convex to almost straight, "shoulders" indistinct. Pronotal lateral lobe (fig. 11) as long as high, but usually longer than high, lower margin roughly sinuate, due to ventral extension of deepest point, situated about in the middle of lobe length.

Flexed wings reaching distal end of proximal third to middle of hind tibia. Fore wing of moderate width, not as wide as in type-species, margins about parallel and tapering apically towards narrowly rounded apex; transverse veins of costal and radial areas slightest incrassate, archedictyon well developed, membrane slightly opaque. Stridulatory file (fig. 5) as in type-species, but smaller 3.9-4.2 mm long. Number of teeth about 150, of which anterior 25-35 fine, not sharp and narrowly spaced, other 115-125 sharp, wider and regurlarly spaced. Width of file increasing in anterior third of file length, reaching maximum 0.45-0.50 mm. Mirror (fig. 6) as in type-species, but smaller.

Fore femora with 1-4, mid femora with 0-2 spines in apical part of anteroventral margin. Hind femur, except near base, with series of spines on both ventral margins, spines hook-shaped as usual and not widened as in type-species. Fore and mid knee-lobes with one, hind knee-lobes with one or two spines. Fore tibia with 0-2, mid tibia with 5-7 dorsal spines on posterior margin, both tibiae with a posterior dorso-apical spine.

Cercus (fig. 4) and subgenital plate resembling those of *uniformis* (C. Willemse) but styli often vestigial (fig. 7-8).

General colour ranging individually from bright green to dark brown. Head and antennae of general colour, the latter not annulated. Palpi from pale to dark brown. Lower margin of pronotal lateral lobe from slightly to distinctly cream-coloured, this colour sometimes extending over the pleurae. Fore wing of general colour, often with the archedictyon bordering the posterior margin of the wing and a series of dots along the posterior margin of the radial vein, at the slightly incrassate bases of the transverse veins, bright yellow. Hind femur of general colour, without black spots, inner and lower sides ranging from flesh-coloured in green individuals to dark brown in specimens of that colour, but never solid black. Tip of hind tibia narrowly infuscate. All tarsi dark brown above, dull black below. Spines of legs black, but dorsal ones of hind tibia with yellowish to brown bases.

♀ (fig. 3), slightly larger than male. Ovipositor almost straight, long, reaching distal end of proximal third to middle of hind tibia, not or slightly extending beyond apex of flexed wings. Subgenital plate with short, median apical emargination, lobes large and widely rounded. Coloration as the male.

Measurements (length in mm): body ♂ 56-59, ♀ 54-63; fore wing ♂ 63-68, ♀ 76-83; hind femur ♂ 39-41, ♀ 43-46; ovipositor 36-38.

Distribution. Known from the type-locality Aiyura, Eastern Highlands District of New Guinea. A female at hand from Tapini, Central District of Papua, agrees completely with the type-series, but to establish its conspecifity, a study of an associated male is wanted.

Differential diagnosis. — The species is well defined. It can be allocated between *uniformis* and *rufipalpis* (both C. Willemse). In a recent survey of the Sexavae, a key to the species of *Segestidea* is given (F. Willemse, 1977: 241). The new species *montana* can be distinguished from the other members of the genus if the couplets 7 and 8 of that key are changed as follows:

7. Apical part of hind tibia, over a distance as long as hind tarsus, blackish, except for upper side; proximal part of outer side of hind femur with a series of small, black spots, or sometimes with a single large spot, exceptionally without any spot; lower margin of pronotal lateral lobe angulate in distal third (fig. 9); ventral spines of hind femur unusually widened basally, almost triangular (East New Guinea, extending into northeastern part of West New Guinea) . . . . . *novaeguineae* (Brancsik)
Hind tibia unicolorous over whole length or tip only blackish; outer side of hind femur always without solid black spots; lower margin of pronotal lateral lobe angulate (fig. 10), sinuate (fig. 11) or more convex (fig. 12-13); ventral spines of hind femur hook-shaped as usual 8a

8a. Lower margin of pronotal lateral lobe angulate or sinuate (figs 10-11) 8b
This margin more smoothly convex (figs 12-13) (Bismarck Archipelago) 9

8b. Lower margin of pronotal lateral lobe more angulate, deepest point at distal third (fig. 10); male stridulatory file, cercus and subgenital plate as in pl. 15 fig. 92, 100, pl. 16 fig. 108 (compare F. Willemse, 1977) (East New Guinea, Louisiade Archipelago: Misima I.) . . . . . *rufipalpis* (C. Willemse)
Lower margin of pronotal lateral lobe more sinuate, deepest point about in the middle of lobe length (fig. 11); male stridulatory file, mirror, cercus and subgenital plate as in fig. 4-8 (East New Guinea, Eastern Highlands District: Aiyura, Central District, Tapini?) *montana* sp.n.

Remarks. — It is noted here that the degree of development of the styli of the male subgenital plate was considered previously an important specific character (F. Willemse, 1977: 228). It is

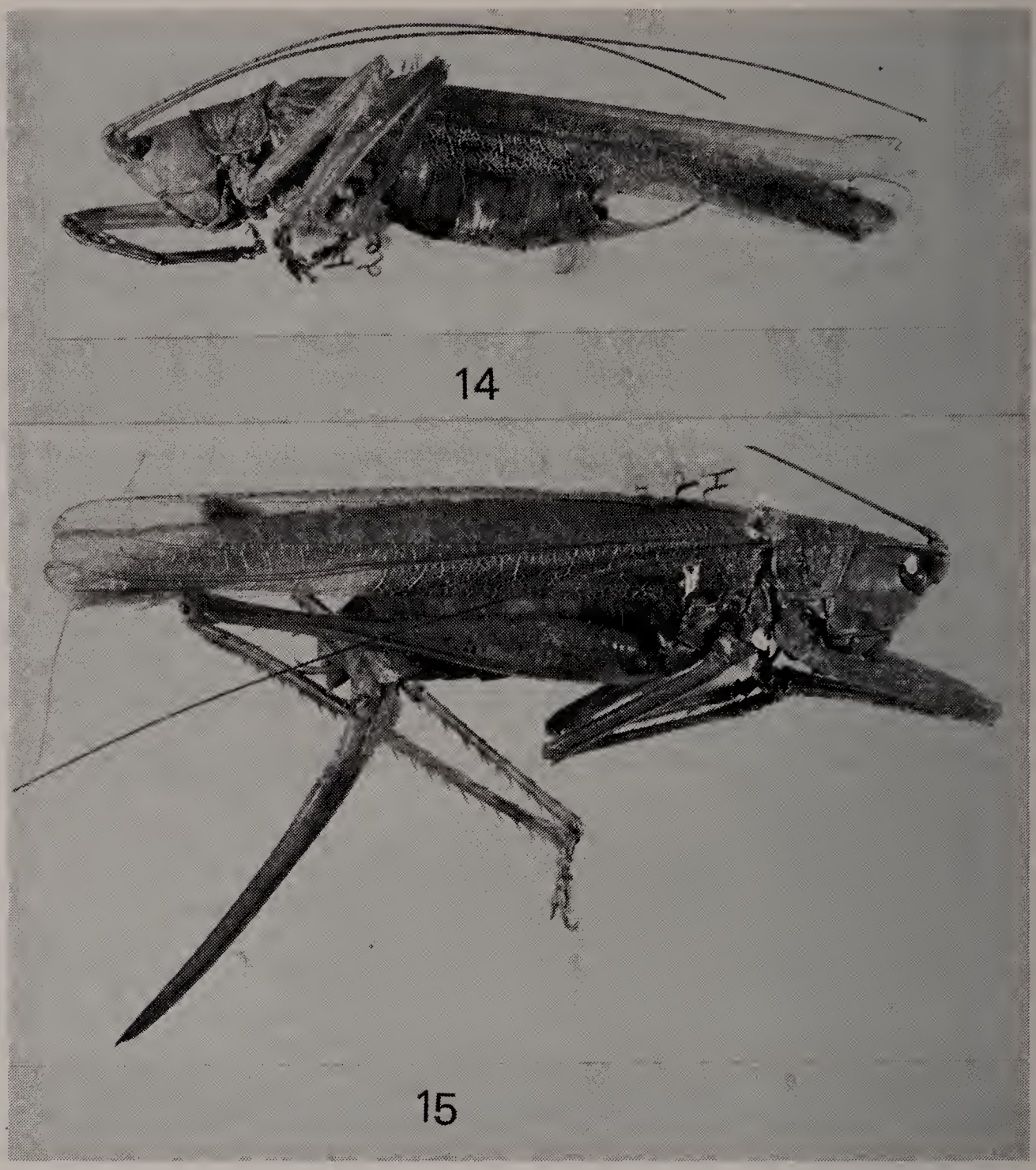

Fig. 14-15. *Habetia defoliaria* Uvarov, ♂ holo-, and ♀ allotype.

clearly shown now in *S. montana* that within the population of one species both distinct (fig. 8) and vestigial (fig. 7) styli may be found.

The new species was found together with *S. novaeguineae*. Previous records referring to *S. montana* are unknown.

Segestidea defoliaria defoliaria (Uvarov, 1924)
(figs 14-15)

Habetia defoliaria Uvarov, 1924: 35-36, fig. 1.
Segestidea gracilis simulatrix F. Willemse, 1977: 250, figs. SYN. NOV.

Material studied. — ♂ holo-, ♀ paratype, labelled: New Britain, near Rabaul, vii.1923, H. W. Simmonds, Habetia defoliaria sp.n. Det. B. Uvarov, Type and Paratype (British Museum (Natural History), London).

Additional material. — West New Britain, Dami Oil Palm Res. Station & Buvussi Oil Pal Settlement & Benaule Village, 12-13.XII.1977, C. H. Perry, on oil palm & young coconut (3 ♂ 6♀, collection of Department of Primary Industry, Konedobu, Papua New Guinea).

Synonymy. — On account of the identification of some Tettigonioidea from the Melanesian area the description of *Habetia defoliaria* Uvarov, 1924 came under my attention. The genus *Habetia* Kirby, 1906 (type-species *Agraecia spada* Brunner von Wattenwyl, 1898) is a member of the subfamily Agraecinae. For this obvious reason it was surprising to meet with a species which quite probably seemed to belong to the Sexavae, which are part of the subfamily Mecopodinae. The species was known only after the typical pair. Comparison of the types (figs 14-15) and the type-material of *Segestidea gracilis simulatrix* F. Willemse, 1977 reveals clearly that both taxa are identical. The new combinations *Segestidea defoliaria defoliaria* (Uvarov, 1924) for *S. gracilis simulatrix* F. Willemse 1977 and consequently *Segestidea defoliaria gracilis* (C. Willemse 1957) for *S. gracilis* (C. Willemse 1957) are proposed.

Distribution. — The range of the subspecies was known to cover East New Britain, which includes the type-locality of Habetia defoliaria. The West New Britain localities are new and extend the known range westernward.

Remarks. — The material at hand agrees fully with the description and differential diagnosis of the subspecies given by F. Willemse (1977) under *Segestidea gracilis simulatrix*.

The subspecies is of economic importance. Serious damage by defoliating both coconut and oil palm was recorded at Rabaul and at the Lowlands Agricultural Experiment Station, Keravat (Uvarov, 1924, as *Habetia defoliaria;* C. Willemse, 1958 & Szent-Ivany, 1959, as *Eumossula gracilis*). Dr. J. N. L. Stibick, who sent me the material at hand, informed me (in litt. 24.II.1978) that the subspecies has suddenly be found to be causing serious damage to oil palm at West New Britain.

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SCHREIBER, H., 1978. DISPERSAL CENTRES OF SPHINGIDAE (LEPIDOPTERA) IN THE NEOTROPICAL REGION: I-VI, 1-195, 68 fig., ruim 200 ref., geen index. Vol. 10 van de reeks Biogeographica. Dr. W. Junk, Den Haag. ISBN 90-6193-211-4. Prijs (gebonden): *f* 65,—.

Dit boek is een vertaling van Schreiber's Duitse dissertatie uit 1973. Hij promoveerde bij G. de Lattin en P. Müller, en produceerde een getrouwe toepassing van de door de Lattin ontwikkelde analysemethode van de „Ausbreitungszentren" (een term die meer belooft dan hij geeft; Verbreitungszentren of distribution centres zou minder hooggespannen verwachtingen hebben gewekt). Het werk is een volkomen afspiegeling van Müller's analyse van de Neotropische Vertebraten (verschenen in Biogeographica 2) en wekt dezelfde irritaties — door de slordigheid van de literatuurlijst, maar vooral doordat het boek door het ontbreken van een index onhanteerbaar is en door de subjectiviteit en oncontroleerbaarheid van de werkmethode. Ondanks dat Schreiber bijna 74.500 vlinders heeft gezien staat het aantal vindplaatsen van zeldzamer soorten niet in verhouding tot de getrokken conclusies.

Het boek wordt voorafgegaan door een geheel buiten het verband staand artikel over de nomenclatuur van Sphingiden genera, en een met gruwelijke plaatjes verluchte inleiding tot systematiek en morfologie van deze vlinders. De verzorging laat te wensen over — veel verspreidingskaarten hebben een onhandige schaal of vervloeiende symbolen. Er is een „locality index" met duizend plaatsnamen (waar men ook plaatsen als Paramaribo, Montreal en New York vindt aangegeven!). — W. N. Ellis.