

# Taxonomy of the *Ochyrotica cretosa* Group (Lepidoptera, Pterophoridae, Agdistinae)

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## ABSTRACT

The *Ochyrotica cretosa* group is revised and all species are figured. The group includes *O. cretosa*, *O. buergersi*, *O. salomonica*, n. sp., and *O. pseudocretosa*, n. sp. The group is distributed from the eastern islands of the Indonesian archipelago through New Guinea to the Solomon Islands.

## INTRODUCTION

This paper completes review of the Indo-Australian members of the genus *Ochyrotica*. The *Ochyrotica connexiva* and *concurva* groups have been recently revised (Arenberger 1988; Arenberger & Gielis 1988; Gielis 1989). Assessment of variation within the *cretosa* complex has been hindered by the rarity of most of the species.

Abbreviations used: ANIC = Australian National Insect Collection, CSIRO, Canberra, Australia; BMNH = British Museum (Natural History), London, U.K.; BPBM = Bishop Museum, Honolulu, Hawaii, USA; ZMHB = Museum für Naturkunde der Humboldt-Universität, Berlin, Germany; RNHL = Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands; USNM = United States National Museum, Smithsonian Institution, Washington, D.C., USA.

## OCHYROTICA CRETOSA GROUP

**Diagnosis.** Species in the *cretosa* group are characterized by their white color and dark to pale gray-brown markings.

### Key to Species of *O. cretosa* Group

1. Apical part of costal forewing margin with 2 dots; inner dot faces outer wing margin  
..... *buergersi* Gaede/*salomonica* Arenberger  
Outer dot faces outer wing margin ..... *cretosa* Durrant/*pseudocretosa* Gielis

### Key to species *O. cretosa* Group Based on Female Genitalia

1. Large sclerotized structure in distal part of ductus bursae ..... 2  
Small almost circular sclerotized structure in distal part of ductus bursae ..... 3
2. Ductal sclerotized structure with central semicircular protusion ..... *pseudocretosa*, n. sp.  
Ductal sclerotized structure spinelike, progressing toward antrum over  $\frac{2}{3}$ – $\frac{3}{4}$  length of ductus  
..... *cretosa* Durrant
3. Margin of 7th sternite flat; sclerotized part of antrum rectangular, narrow, top end slightly impressed ..... *salomonica* Arenberger

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2. Bornergasse 3, 4/6, 1190 Wien, Austria

Margin of 7th sternite curved; sclerotized part of antrum square, top end more or less funnel-like . . . . . **buergersi** Gaede

### Key to Species of *O. cretosa* Based on Male Genitalia

1. Valvae with saccular, costal arm, and harpe . . . . . **buergersi** Gaede  
Valvae with saccular and costal arm . . . . . 2
2. Valvae bilobed . . . . . 3  
Valvae not bilobed. Large spoonlike process, longer than cucullus, originating from mid-dorsal and mid = costa . . . . . **salomonica** Arenberger
3. Dorsal process almost as long as valvae . . . . . **pseudocretosa**, n. sp.  
Dorsal process  $\frac{1}{2}$  as long as valvae . . . . . **cretosa** Durrant

### *Ochyrotica cretosa* (Durrant, 1916)

Figs. 1, 3, 7, 11

*Steganodactyla cretosa* Durrant, 1916:163.

**MALE, FEMALE** (Fig. 1). Wingspan 15–17 mm. Forewing white; markings brown-gray, consisting of costal streak  $\frac{2}{3}$  wing length, dorsal blotches at  $\frac{1}{3}$ ,  $\frac{2}{3}$ , and  $\frac{5}{6}$ , outer 2 largest. Two small costal spots near acute apex, outer spot just beyond terminal wing margin; small subapical streak. Some diffuse dark scales between markings. Fringes at dorsum gray; gray at termen with basal white margin; costally gray. Underside gray. Hind wing gray. Fringe gray. Underside brown-gray. Androconial scales in single row, black. Thorax white, gray-white distally. Head fuscous-white. Patagial scales large, bifid. Antenna gray-white. Palp white, grayish at end of segments. Abdomen white, 2nd and 4th tergite gray. Legs white, grayish at end of segments.

**Male genitalia** (Fig. 3). Valvae symmetrical, bilobate. Dorsal arm originating from near base of valva, with pointed top,  $\frac{1}{2}$  as long as valva. Costal arm originating at middle of valva, apex funnel shaped. Tegumen bilobate. Uncus slender, curved. Vinculum narrow. Aedeagus stout, conical, with 2 small, lateral, thornlike protrusions near top.

**Female genitalia** (Fig. 7). Antrum oblique on ductus bursae, almost circular. Ductus bursae as long as diameter of bursa copulatrix. Heavily sclerotized, longitudinal spine  $\frac{2}{3}$ – $\frac{3}{4}$  as long as ductus bursae originating from junction area with bursa copulatrix. Bursa copulatrix without signum. Apophyses posteriores as long as papilles anales. Apophyses anteriores absent.

**Flight period.** July–September.

**Biology.** Unknown.

**Material examined.** Holotype ♂, [INDONESIA: IRIAN JAYA]: Mimika R[iver], viii.1910, A.F.R. Wollaston, 1911–229, 350401, genitalia BM 17991 (BMNH) [examined]; 2 ♀, [INDONESIA]: Ron I, vii.1897, W. Doherty, genitalia Ar 3546, 3547 (BMNH); 1 ♀, [INDONESIA]: Halmahera I, Goa Plateau, 50–100 m, 9.ix–12.ix.1955, genitalia CG 3027 (RNHL).

**Distribution** (Fig. 11). New Guinea: Mimika Riv, Ron I; Indonesia: Halmahera I (Goa Plat).

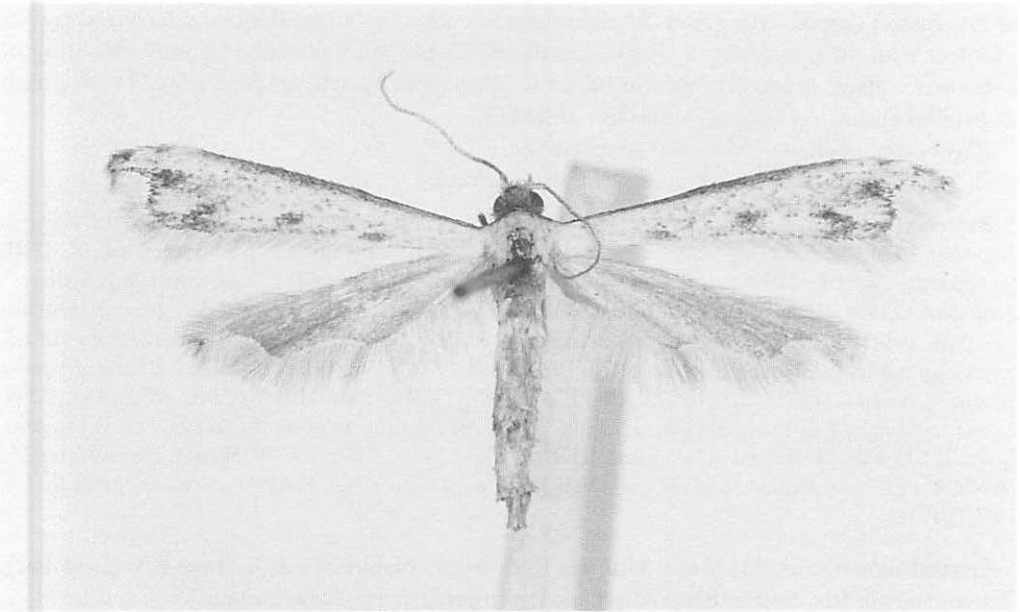
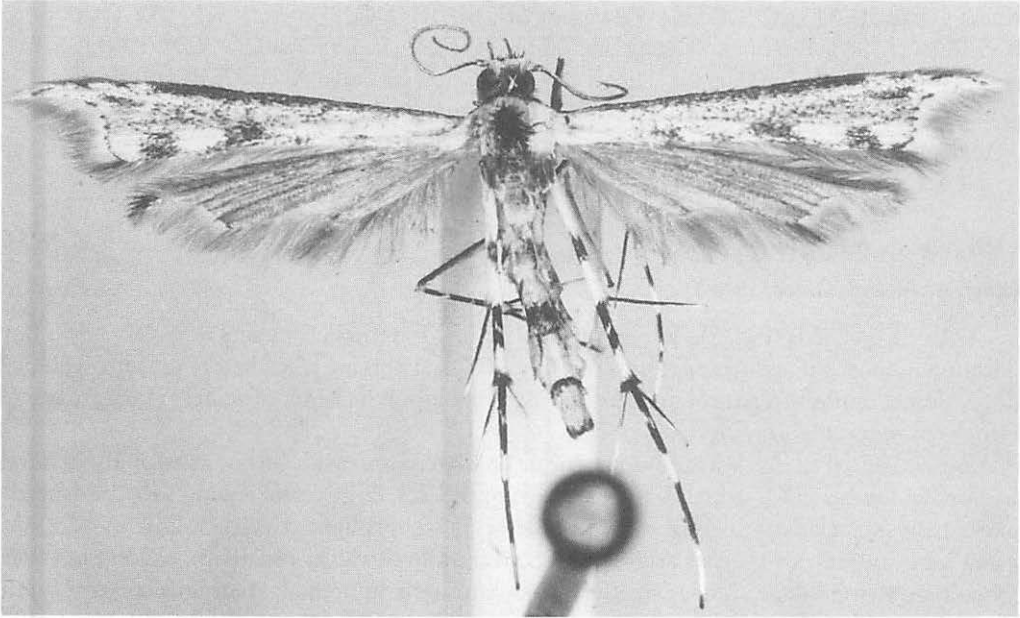
### *Ochyrotica pseudocretosa* Gielis, new species

Figs. 4, 8, 11

**MALE, FEMALE.** External characters as in *O. cretosa* Durrant.

**Male genitalia** (Fig. 4). Valvae symmetrical, bilobate. Long brushlike process from dorsal margin, almost as long as valvae. Slender process from termen of basal lobe of valvae, almost as long as terminal lobe, apex funnel shaped. Tegumen bilobate. Uncus slender. Vinculum arched, rather wide. Aedeagus straight, stout, with small cornutus.

**Female genitalia** (Fig. 8). Antrum oblique ductus bursae, almost square. Ductus bursae short, straight. Semicircular, heavily sclerotized plate, with a knoblike protrusion at concave side in



Figs. 1–2. *Ochyrotica* species, adults: 1, *O. cretosa*, holotype; 2, *O. buergersi*, New Guinea, Wareng, ♀ (USNM).

junction area with bursa copulatrix. Bursa copulatrix without signum. Apophyses posteriores as long as papillae anales. Apophyses anteriores absent.

*Flight period.* July–September, December–February.

*Biology.* Unknown.

**Type data.** Holotype ♂, [INDONESIA: IRIAN JAYA]: Sorong, 28.viii–6.ix.1948, Lief-

tinck, genitalia CG 3037 (RNHL). Paratypes: 1 ♂, 1 ♀, [INDONESIA: IRIANJAYA]: Sorong, 8.vii-14.viii.1948, Liefstinck, ♂ genitalia CG 3028 (CG), ♀ genitalia CG 3029 (RNHL); 1 ♀, Kampaur, sea level-2,000 ft, xii.1896-ii.1897, Doherty, genitalia Ar 3367 (BMNH); 1 ♂, [INDONESIA]: Maluku: Ternate I, 1892, Doherty, genitalia Ar 3361 (BMNH).

**Distribution** (Fig. 11). New Guinea: Sorong, Kampaur. Indonesia: Ternate I.

***Ochyrotica buergersi* Gaede, 1916**

Figs. 2, 5, 9, 11

*Ochyrotica buergersi* Gaede, 1916:81.

MALE, FEMALE (Fig. 2). Wingspan 14-16 mm. External characters as in *O. cretosa*, but differing in more orange-gray color of markings. Costal dots are placed more terminally; inner dot is almost opposite terminal margin of wing; outer dot is in center of acutely extended apex. Fringes more evenly grayish.

*Male genitalia* (Fig. 5). Valvae symmetrical, bilobate. External lobe not as strongly divided from basal lobe as in *O. cretosa*. Valvae have 3 appendices: large costal ending in a "bird-head-like" shape; saccular originating from middle of valva, strongly curved, ½ as long as outer valva lobe; ampulla (= harpe) originating from middle of valva, bristlelike, as long as outer lobe. Tegumen bilobate. Uncus slender. Vinculum narrow, arched. Aedeagus straight, with small cornutus and lateral thorn.

*Female genitalia* (Fig. 9). Antrum weakly sclerotized, almost rectangular, distal margin more or less funnel shaped. Margin of 7th sternite wavy. Ductus bursae slender, sclerotized ring at junction with bursa copulatrix. Bursa copulatrix simple, with platelike signum consisting of concentric spikes, gradually less sclerotized to periphery. Apophyses posteriores 1½ × length of papilles anales. Apophyses anteriores absent.

*Flight period.* January-May, July-September.

*Biology.* Reared from sweet potato (*Ipomoea batatas*).

**Material examined.** Holotype ♂, [INDONESIA: IRIAN JAYA]: Hauptlager b.[ei] Malu, Kaiscrin Augustaf. [uss] Exp. [edition], vi-viii. [19]12, Buergers S.G. [Now Sepik Riv], Abdomen lost (ZMHB) [examined]; 2 ♂, 5 ♀, Nabire, S of Geelvink Bay, 0-30 m, 2-9.vii.1962, J. L. Gressitt & J. Sedlacek, genitalia CG 1939, 1940 (BPBM, CG); 2 ♂, 1 ♀, Biak I, 1.vii.1962, Gressitt & Sedlacek, light trap, genitalia CG 1941, 1942 (BPBM); 1 ♂, Waren [= Wareng?], 17.viii.1936, S. Issiki, genitalia CG 1949 (USNM); 1 ♂, 1 w.a., Kota Nica (nr. Hollandia), 75 m, 22.ii.1958, 4.viii.1957, R. T. Simon Thomas, e.l. bataat (*Ipomoea batatas*), genitalia CG 3039 (RNHL); 1 ♀, PAPUA NEW GUINEA: Busu Riv, S of Lae, 100 m, 14.ix.1955, Gressitt, genitalia CG 1944 (BPBM); 1 ♂, Sogeri Plat, Bisianumu, 1,600 ft, 30.vii.1957, G. P. Holland, genitalia CG 3021 (RNHL); 1 ♂, Woodlark I: Kulumadau, 20.i-6.v.1957, W. W. Brandt, genitalia Ar 3352 (ANIC); 1 ♀, New Britain: Malmalwan, Vanaka-Nau, Gazellen Fen, 8.v.1956, Gressitt, genitalia CG 1946 (BPBM).

**Distribution** (Fig. 11). New Guinea: Kota Nica, Nabire, Biak I, Busu Riv (E of Lae), Wareng, Sepik Riv, Sogeri Plat, Woodlark I; Bismarck Arch: New Britain.

**Remarks.** *Ochyrotica buergersi* of Diakonoff (1952: 24) is *breviapex* Gielis.

***Ochyrotica salomonica* Arenberger, new species**

Figs. 6, 10, 11

*Ochyrotica cretosa* of Yano, 1963:851, 857. [misidentification]

MALE, FEMALE. Externally cannot be separated from *O. buergersi* Gaede.

*Male genitalia* (Fig. 6). Valvae symmetrical. Sacculus pronounced, curved, with distal spoon-like enlargement. Distal end of valvae acute. Tegumen bilobate. Uncus heavily sclerotized,

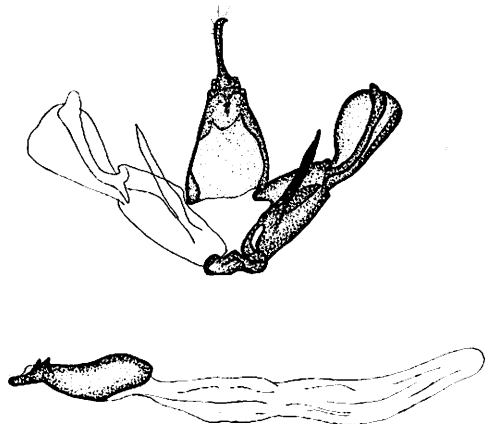


Fig. 3.

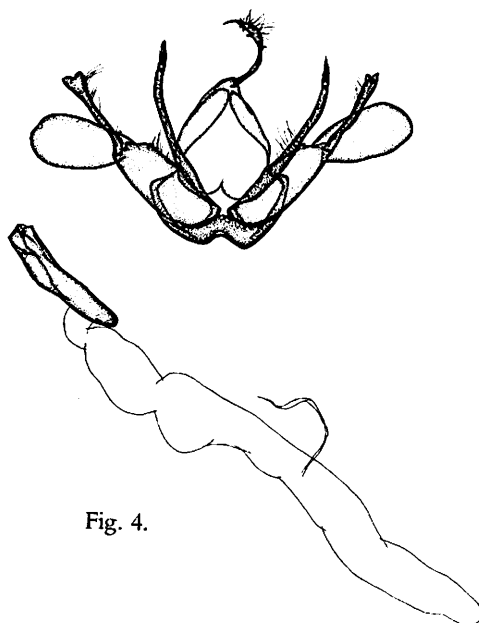


Fig. 4.

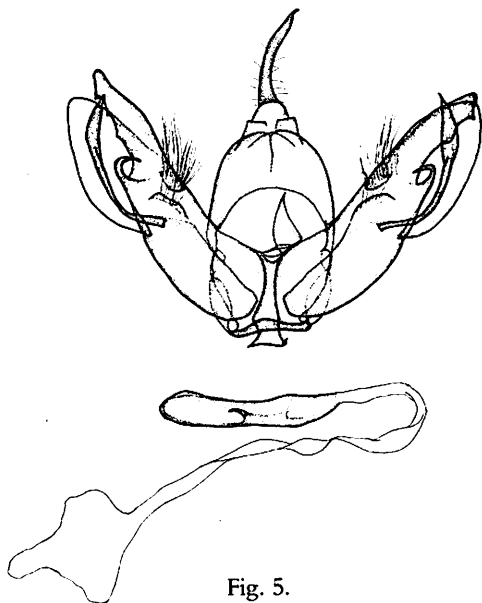


Fig. 5.

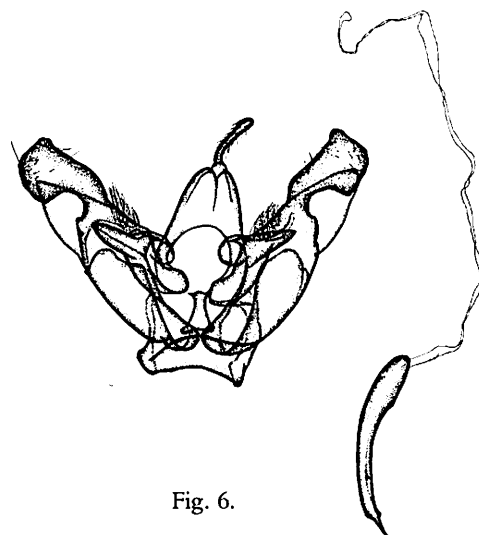


Fig. 6.

Figs. 3-6. ♂ genitalia: 3, *O. cretosa*, holotype, genitalia BM 17991; 4, *O. pseudocretosa*, paratype, genitalia Ar 3361 (BMNH); 5, *O. buergersi*, genitalia Ar 3352 (ANIC); 6, *O. salomonica*, holotype, genitalia Ar 3545 (BMNH).

conical. Vinculum broad, wide. Aedeagus slightly curved, apex acute, pointed. Cornutus small, thornlike at  $\frac{1}{3}$  of aedeagus length.

*Female genitalia* (Fig. 10). Antrum with distal rectangular, wide sclerotized segment just beyond distal margin of 7th sternite. Margin of 7th sternite almost straight. Other structures as in *O. buergersi*.

*Flight period.* March, May, July-September.

*Biology.* The species has been reared on *Merremia peltata*.

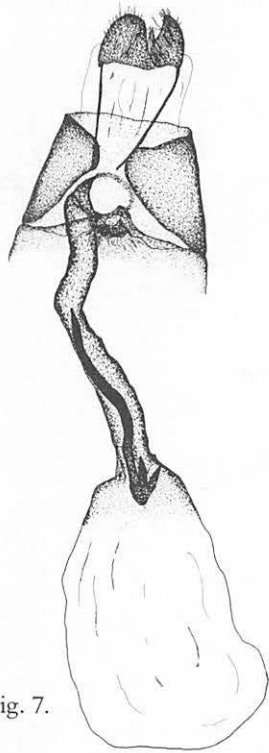


Fig. 7.

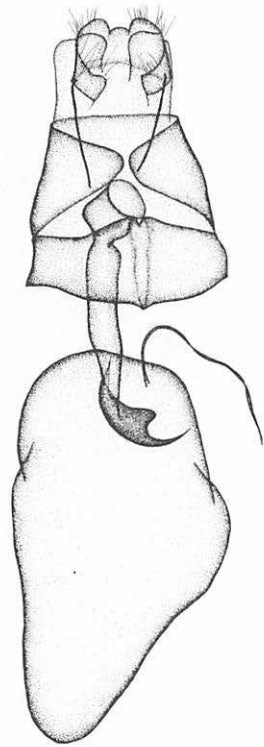


Fig. 8.

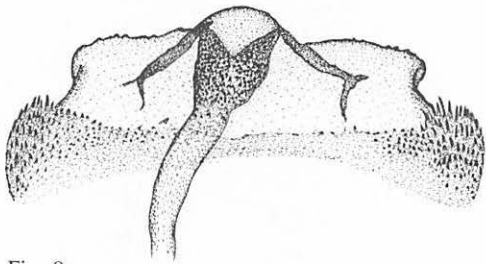
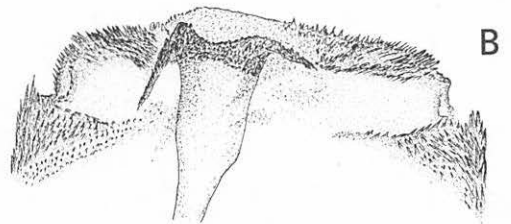
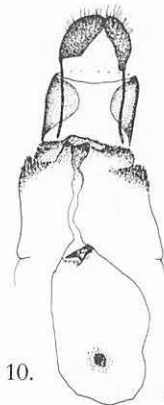


Fig. 9.



B



A



C



D

Fig. 10.

Figs. 7–10. ♀ genitalia: 7, *O. cretosa*, genitalia CG 3027 (RNHL); 8, *O. pseudocretosa*, paratype, genitalia Ar 3367 (BMNH); 9, *O. buergersi*, (7th sternite), genitalia CG 1939 (BPBM); 10, *O. salomonica*, (A: Genitalia; B: 7th sternite; C: Ductus bursae and bursa copulatrix junction; D: Signum), genitalia CG 3038 (RNHL).

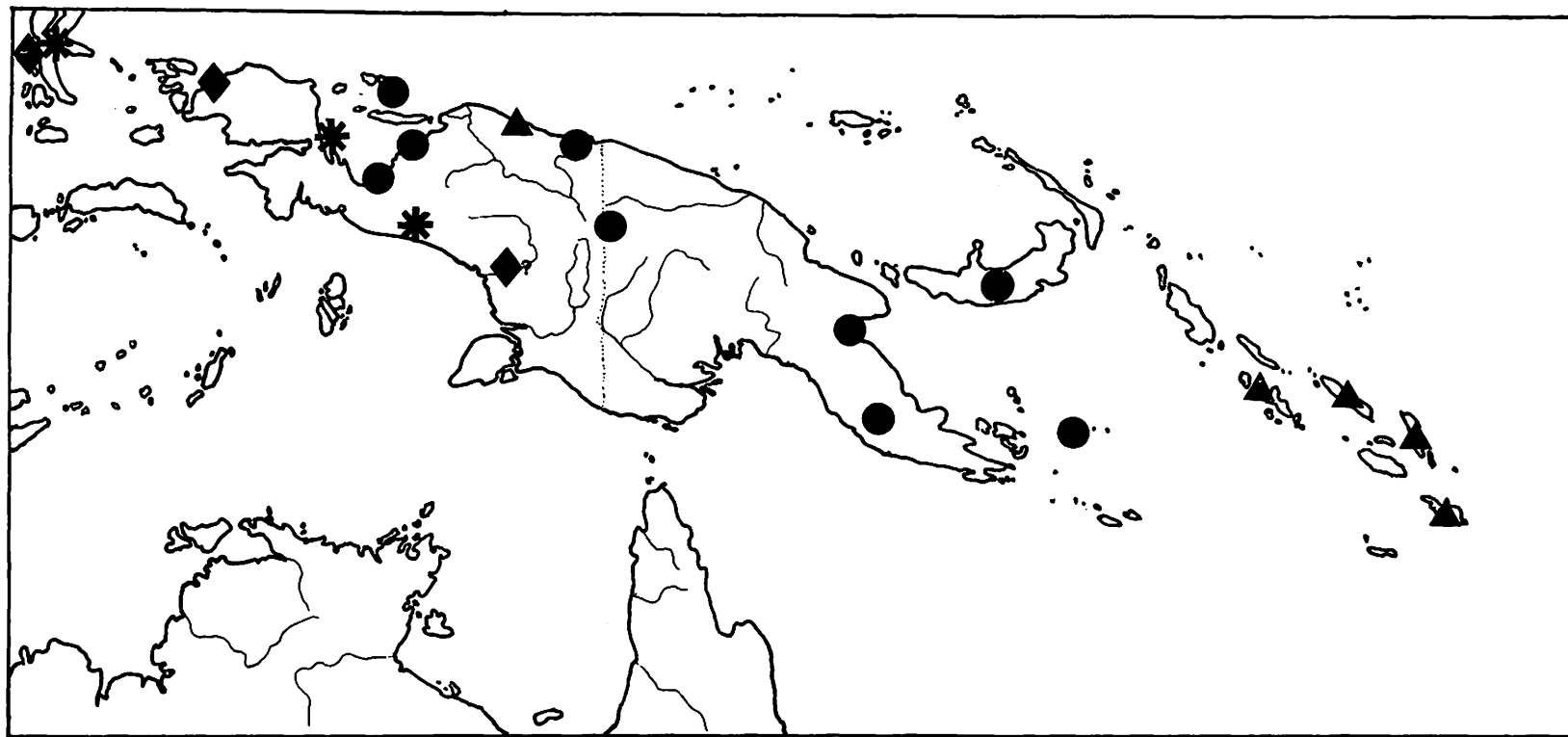


Fig. 11. Distribution of the species in the *Ochyrotica cretosa* / *buergersi* group; \* = *O. cretosa*; ◆ = *O. pseudocretosa*; ● = *O. buergersi*; ▲ = *O. salomonica*.

**Type data.** Holotype ♂, SOLOMON IS, Kolombangara I, 20.v.1982, M. Bigger, bred from *Merremia peltata*, MP 31. "Pres. by Comm. Inst. Ent., B.M. 1982-1." "*Steganodactyla cretosa* Durrant, det. J. Bradley, 1982." Genitalia Ar 3545 (BMNH); Paratypes: 1 ♀, SOLOMON IS: Santa Ysabel I: Molao, Maringe Dist, b.s.l., ca. 4 mi W Mt. Sasari, 29.vii.1960, C.W. O'Brien, light trap, genitalia CG 1947 (BPBM); 1 ♀, SOLOMON IS: Santa Ysabel, Koloture, b.s.l., 16.vi.1960, O'Brien [BPBM]; 1 ♂, San Cristobal I: Maniate, b.s.l., 5.viii.1960, O'Brien, light trap, genitalia Yano (see Yano, 1963) (BPBM); 1 ♀, Malaita I: Tangtalau, 150-200 m, 26.ix.1957, J. L. & M. Gressitt, light trap, genitalia Yano [see Yano, 1963] (BPBM); 1 ♂, [INDONESIA: IRIAN JAYA]: Sarmi, 11.iii.1958, R.T. Simon Thomas, genitalia CG 3038 (RNHL).

**Distribution** (Fig. 11). Solomon Is: Kolombangara, Santa Ysabel I, San Cristobal I, Malaita I; New Guinea: Sarmi.

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