fuscous strigulae; surface of wing marked with many scattered, short, transverse fuscous dashes; across middle an oblique brown fascia extends from inside middle of dorsum to vein 9, beyond end of cell; black scales irregularly scattered along the fascia; at end of cell a conspicuous white spot; tornal spot indicated by a short oblique black bar and a few black scales on margin; from about apical fourth, on vein 9, an outwardly curved row of black dashes, edged with wood brown, extends to vein 4; cilia tawny with a darker basal line; underside, along costa, olive buff, mottled with fuscous. Hind wing grayish fuscous; underside mostly olive buff mottled with fuscous; cilia grayish fuscous with some olive buff scale mixed. Foreleg wood brown suffused fuscous; tarsi fuscous narrowly annulated with buff; (midleg missing); hind leg light olive buff; terminal four tarsal segments banded with grayish fuscous. Abdomen grayish fuscous dorsally, pale clay color ventrally with fuscous median longitudinal line.

Female genitalia slide JFGC 11376. Ostium U-shaped. Antrum a short, sclerotized band. Inception of ductus seminalis dorsal and immediately anterior to antrum. Ductus bursae short; surface granular. Bursa copulatrix pear shaped; posteriorly granular. Signa two large curved, narrow blades. Lamella antevaginalis more or less rectangular, sclerotized, with a deep concavity posteriorly. Lamella postvaginalis consisting of two elongate triangular, sclerotized patches.

HOLOTYPE.—USNM 70092.

TYPE LOCALITY.—Rapa, Haurei.

DISTRIBUTION.—Rapa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (19.IX. 1963).

Unfortunately, the male of *nythobia* is unknown, but the female suggests that this species is closely related to *C. ombrodelta* (Lower). The female of *nythobia*, however, lacks the conspicuous tornal spot of *ombrodelta*, this being indicated only by a short, black dash diagonally between veins 1c and 2 and a few black scales on the tornal margin. The lamella postvaginalis of *ombrodelta* also lacks the sclerotized patches of *nythobia*.

Family CARPOSINIDAE

Genus *Carposina* Herrich-Schäffer

Carposina Herrich-Schäffer, 1853, p. 38, pl. 12; figs. 1, 2. (Type-species: *Carposina berberidella* Herrich-Schäffer, 1853 [designated by Fernald, 1908, pp. 34, 59].)

Carposina paracrinifera, new species

FIGURE 110; PLATE 18*e*, *g*

Alar expanse 13–15 mm.

Labial palpus white; in ♂ second segment shaded and irrorate with blackish fuscous; in ♀ second segment shaded and irrorate with blackish fuscous; third segment with broad blackish fuscous band on outer side. Antenna gray; scape white. Head white with narrow line of blackish fuscous on face laterally. Thorax very pale ochraceous buff with large grayish-fuscous blotch dorsally; tegula tipped gray. Forewing ground color sordid white; extreme base ochraceous buff with costal edge, spot on angle, and a small spot on outer edge grayish fuscous; on costa at one-third, middle, and two-thirds blackish-fuscous spots; subapically on costa two similarly colored small spots; six clusters of raised scales, in pairs at one-third, middle, and two-thirds, blackish fuscous edged white and light ochraceous buff; a grayish suffusion between the middle and outer pair of scale tufts, each scale of which is finely and narrowly edged ochraceous buff; midway between the outer pair of scale tufts and termen a transverse grayish suffusion, scales edged with ochraceous buff, mixed with scattered black scales; along termen a series of small, suffused black spots mixed with ochraceous buff; cilia grayish. Hind wing shining pale grayish fuscous; cilia grayish with darker basal band. Foreleg ocherous white overlaid fuscous on outer side; tarsal segments fuscous annulated; midleg similar; hind leg ocherous white, lightly suffused grayish on outer side. Abdomen ocherous white suffused grayish dorsally.

Male genitalia slide JFGC 11453. Harpe rather narrow, somewhat broader basally than at middle, narrowest slightly before cucullus; cucullus terminating in a sharp hook. Gnathos consisting of two convergent, slender processes, terminating in a cluster of setae. Uncus absent or only weakly indicated. Vinculum elongate, narrowly rounded. Tegumen very broad, short, little more than one-third the length of harpe. Anellus a small sclerotized plate. Aedeagus long, slender, dilated beyond middle; vesica with well-developed cluster of strong cornuti.

Female genitalia slide JFGC 11454. Ostium transverse, oval, large. Antrum strongly sclerotized. Inception of ductus seminalis posterior to middle of ductus bursae. Ductus bursae sclerotized for most of its length. Bursa copulatrix membranous. Signa two pairs of

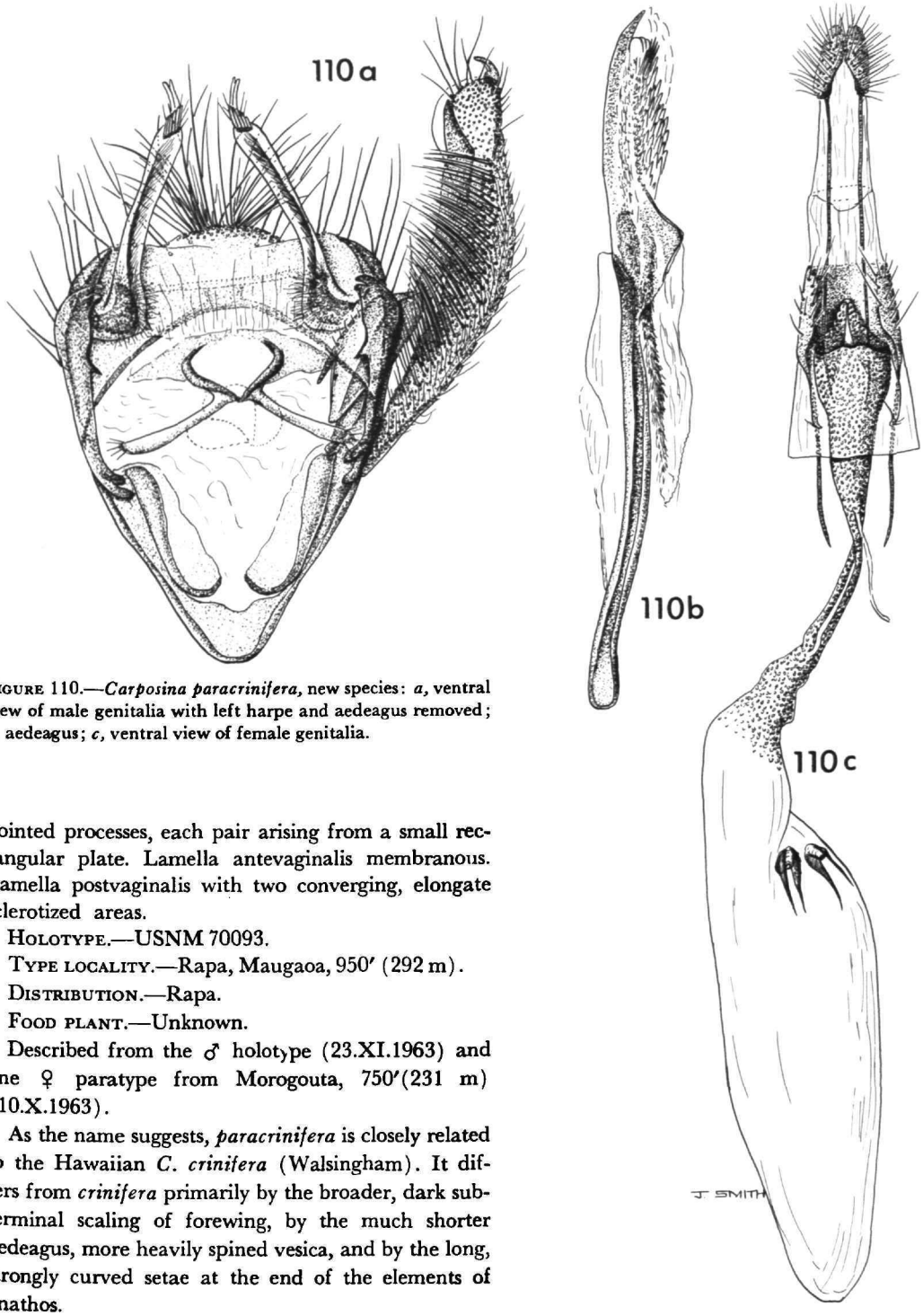

FIGURE 110.—*Carposina paracrinifera*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

pointed processes, each pair arising from a small rectangular plate. Lamella antevaginalis membranous. Lamella postvaginalis with two converging, elongate sclerotized areas.

HOLOTYPE.—USNM 70093.

TYPE LOCALITY.—Rapa, Maugaoa, 950′ (292 m).

DISTRIBUTION.—Rapa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23.XI.1963) and one ♀ paratype from Morogouta, 750′(231 m) (10.X.1963).

As the name suggests, *paracrinifera* is closely related to the Hawaiian *C. crinifera* (Walsingham). It differs from *crinifera* primarily by the broader, dark subterminal scaling of forewing, by the much shorter aedeagus, more heavily spined vesica, and by the long, strongly curved setae at the end of the elements of gnathos.

Carposina apousia, new species

FIGURE 111; PLATE 18*f*

Alar expanse 16–18 mm.

Labial palpus white; second segment grayish fuscous and ochraceous buff on outer side; third segment with grayish fuscous spot dorsally. Antenna grayish fuscous, basally white; scape white. Head white with grayish fuscous line in front of eye. Thorax white; dorsally a grayish fuscous suffusion; tegula with ill-defined grayish suffusion posteriorly. Forewing ground color white; basal sixth of costa grayish fuscous; at basal third of costa a blackish-fuscous spot followed by four small, similarly colored spots on costa; at basal third of dorsum a cinereous shade; at basal third, on vein 1a, on dorsal edge of cell, and at end of cell blackish fuscous tufts of raised scales, mixed with ochraceous buff and white; scattered over wing several irregular ochraceous buff spots and blotches; apical third shaded with gray; cilia sordid white, shaded gray along termen. Hind wing pale grayish fuscous, lighter toward base; cilia sordid white. Foreleg ocherous white, shaded grayish fuscous on outer side; tarsal segments annulated grayish fuscous; midleg similar but not so heavily shaded; hind leg ocherous white; tibial spurs faintly grayish. Abdomen ocherous white, suffused grayish dorsally.

Female genitalia slides JFGC 11455, 11825. Ostium transverse, wide. Antrum narrowly sclerotized. Inception of ductus seminalis approximately at posterior two-thirds of ductus bursae. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent. Lamella antevaginalis membranous. Lamella postvaginalis membranous immediately posterior to ostium, with a prolonged sclerotized area posteriorly.

HOLOTYPE.—USNM 70094.

TYPE LOCALITY.—Rapa, Maugaoa, 950′(292 m)

DISTRIBUTION.—Rapa.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (7.XI.1963) and one ♀ paratype from Maurua, 600′(181 m) (17.X. 1963).

The coloring and pattern of *apousia* and *paracrinifera* are strikingly similar, but the two may be separated by the smaller costal spots and the more rounded

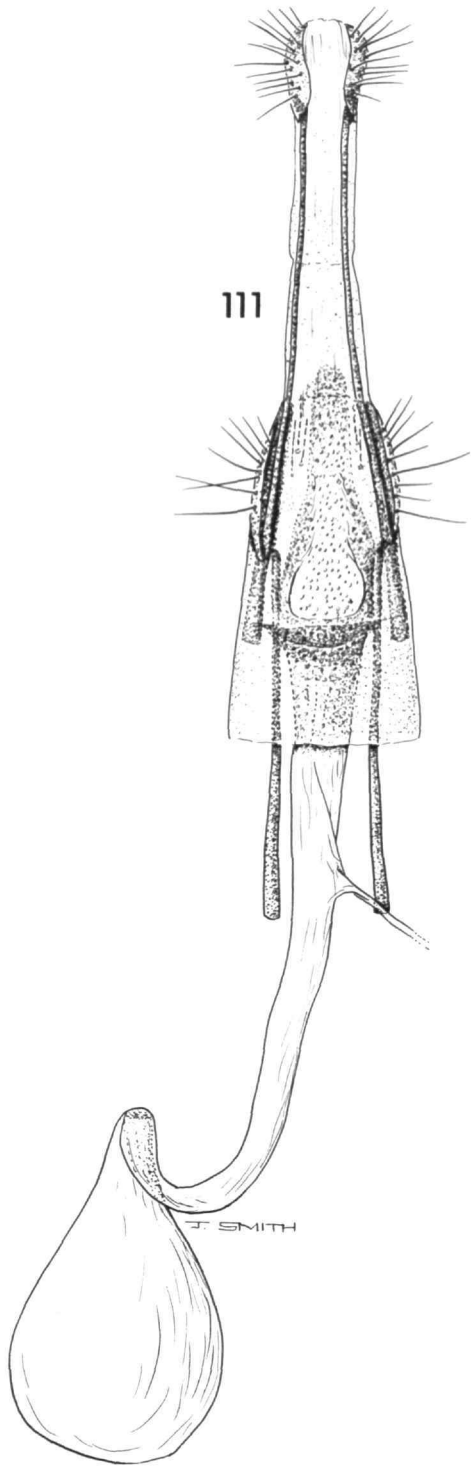

FIGURE 111.—*Carposina apousia, new species.* Ventral view of female genitalia.

tuft of raised scales at the end of cell of *apousia* as seen in the photographs. The absence of signa in *apousia* readily distinguishes it from *paracrinifera.* Unfortunately, the male of *apousia* is unknown.

Despite the absence of signa in *apousia* it agrees with *paracrinifera* in other structural features, is closely similar in appearance, and is obviously very nearly related and derived from the same ancestral form. In the absence of signa this species would appear to belong in the Australian genus *Paramorpha,* but because of the obvious close relationship of the two Rapa species I cannot justify generic separation.

Family GELECHIIDAE

Key to the Genera of Gelechiidae

1. Third segment of labial palpus acute, smooth 3
   Third segment of labial palpus modified 2
2. Third segment plumose (♂ only) ..... ***Stoeberhinus***
   Third segment compressed, and tufted posteriorly ..... ***Palintropa***
3. Forewing with veins 2 and 3 stalked 4
   Forewing with veins 2 and 3 separate ..... ***Phthorimaea***
4. Second segment of labial palpus dilated toward apex ..... ***Autosticha***
   Second segment of labial palpus not dilated toward apex (♀ only) ..... ***Stoeberhinus***

Genus *Phthorimaea* Meyrick

Phthorimaea Meyrick, 1902, p. 103 (Type-species: *Gelechia (? Bryotropha) operculella* Zeller, 1873, p. 262, pl. 13; fig. 17 [by original designation].)

Phthorimaea operculella (Zeller)

FIGURE 112; PLATE 19*e*

Gelechia (?Bryotropha) operculella Zeller, 1873, p. 262, pl. 13; fig. 17.

Because the "potato tuber moth" is so common and widespread and the literature is so extensive, I have not treated this species in the same detail as I have the other Microlepidoptera.

To facilitate identification, however, figures of the adult and the genitalia are included.

Two males were collected at Haurei 23.X and 12.XII.1963.

Genus *Palintropa* Meyrick

Palintropa Meyrick, 1913c, p. 160. (Type-species: *Palintropa hippica* Meyrick, 1913c, p. 160 [by monotypy].)

Meyrick erected this genus for the single species *hippica,* the latter based on two specimens from Ceylon. In his description Meyrick states, "Forewings with 2 from angle, 3 absent, ..." An examination of a wing slide of his type in the British Museum reveals clearly the presence of vein 2, arising well before angle of cell, and what he interpreted as vein 2 is actually vein 3. The fact is that all viens are present in the forewing. Of the hind wing he writes, ". . . 3 absent, 4 and 5 connate, 6 and 7 stalked." Here, again, he missed vein 2 which is present, 3 and 4 are short-stalked (perhaps connate in some specimens, a condition which can easily exist), 5 is well separated from 4, and 6 and 7 are separated by a short, very oblique section of the discocellular vein.

From the discrepancies one might think that Meyrick had some other species before him when he described the genus, but the characters which he did not see could have been missed easily by anyone using only a hand lens as Meyrick did. It is always a source of amazement that Meyrick saw so much as accurately as he did.

That the presence of this genus should be discovered 50 years after its description, nearly 9,000 miles east of its original home, on a very remote island, is in itself interesting and presents some zoogeographical problems to titillate the imagination. There is no question about the generic identity of the Rapa material, and undoubtedly this apparent disjunct distribution of the genus will seem less startling when exhaustive collecting has been accomplished in the vast areas between Rapa and Ceylon.

Meyrick (1930b, p. 723 [485]) recorded *hippica* from Tonkin, China, establishing a wide distribution for the species he described from Ceylon.

Had Meyrick known of the presence of this genus on Rapa, would he have accounted for the Ceylon species, as he did for the presence of his *Dichelopa* in Australia, by the invention of "Palaeonesia"?