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THREE NEW SPECIES OF THE GENUS *CARPOSINA* FROM MAKARONESIA
(LEPIDOPTERA: CARPOSINIDAE)

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A b s t r a c t : Three new species of the genus *Carposina* from Makaronesia (Lepidoptera, Ditrysia, Carposinidae).
Beschreibung von drei Carposinidenarten aus Madeira und den Kanarischen Inseln (Makronesien).

K e y w o r d s : Lepidoptera; Ditrysia; Carposinidae; systematics; Madeira; Canary Islands.

Introduction

The Carposinidae form a natural group which is so distinct that its species can be recognized as belonging to this family almost at one glance. And yet it is still but superficially known; so it seems that the Palae-arctic fauna which is the best known of the world has been explored for the Carposinidae rather inadequately.

The noteworthy and peculiar feature of this family is its apparent preference for islands: while only two species have been recorded for a long time from the whole of western Central Europe, not less than five species,

which are all endemics, are becoming known from Madeira and the Canary Islands (Makaronesia), through the endeavours of many zealous collectors, with Dr. J. Klimesch among them.

The author is indebted to Dr. Klimesch and to the Vienna Museum for entrusting him with the material described below and for the present of duplicates for the collection of the Leiden Museum. To the Uyttenboogaart-Eliassen Stichting of Amsterdam, his thanks are due for a grant covering the costs of text figures, drawn by Messrs A.C.M. van Dijk, the Hague and A. Bosch, Leiden.

The types will be deposited in the collection of Dr. Klimesch and that of the Vienna Museum.

Descriptions of species

Carposina sublucida spec.nov. (fig. 1, 2)

M a l e : 13 mm. Head whitish, sides of face grey, vertex glossy pale grey. Antenna whitish, faintly ringed with light grey, scape pale grey, marked with darker, top white; ciliations above 1. Palpus rather long, porrected, gently curved downwards, triangularly dilated by a loose tuft in middle above and a small tuft before apex below; light grey, densely dusted with blackish, except the sparsely dusted tuft above, terminal segment blackish. Thorax silvery-grey, mixed with darker. Abdomen glossy creamy. Fore wing sublanceolate, long and narrow, costa moderately curved towards ends, more curved towards base, apex rather pointed, termen slightly convex, very oblique. Whitish, rather sparsely dusted with small grey scales, except inwards-oblique denser grey suffusion across wing and posterior end of cell and a less dense dusting along costa posteriorly, in apex and along termen, here extending halfway towards cell; posterior half of costa with five subquadrate black suffused spots; basal patch well-defined not quite reaching dorsum, on costa to 1/6, grey, edged except on dorsum with black; this edge dilated into a round spot above dorsum; outer edge inwards-oblique, well defined; submedian fascia black, from 1/3 of costa, parallel to edge of basal patch, not exceeding fold, broken into four subquadrate spots; halfway this

fascia and discoidal, indication of a median fascia, formed only by a small blackish dot just below first costal spot, and another on lower edge of cell, both whitish-edged. Discoidal mark sinuate, ends clavate and rounded, gently edged with whitish; termen from costa before apex and in apex with a black line, dentoidal small black bars on ends of terminal veins, two bars in tornus larger and separate. Cilia whitish, slightly mixed with grey basal half with suffused and indistinct greyish blotches between terminal bars.

Hind wing without cubital pecten; whitish with a creamy gloss, cilia concolorous.

F e m a l e : 14 mm. Paler, due to slight rubbing, but with most markings of the male recognizable; dot on lower edge of cell somewhat extended, irregular. Top of abdomen light silvery grey. Otherwise as male. Hind wing with a cubital pecten.

M a l e g e n i t a l i a : are very distinct. Tegumen semispherical. Uncus triangular, pointed, with broad base. Gnathos arms thick, heavy, with excurved tops, without median cavity, massive, base dilated, sessile, (not angulate, nor recurving), with a median strip of strong spines from top to base. Vinculum broad, top truncate. Valva broad short and curved, top rounded, sacculus 1/3, ampulla large, angulate and transverse, with base marginal and bifid, apical part directed distad, thick, tip acute, cucullus bristly along margin. Transtilla apparently small but labis very large and stout. Aedeagus clavate, stalk moderate, over 1/2, apex oval with a split top, a patch of long spines at the left, a single spine at the right side.

F e m a l e g e n i t a l i a : Postapophyses slightly, but abruptly dilated at 1/3 from bases, bases strongly dilated. Anapophyses simple and straight. Lamella postvaginalis finely aciculate. Ostium and colliculum rather wide, subsclerotic, spinulate above, becoming finely reticulate below, with honeycomb structure. Ductus bursae moderately long passing imperceptibly into a longer tubular corpus bursae, with rounded end, without any signa. (A moderately undulate long tubular spermatophore present, with a simply rounded end).

Canary Islands, La Gomera Hermigya, reared from *Eonium* sp., e.l. 28.XII. 1966 (J. Klimesch), 1 ♂, holotype, genitalia slide 10038; 1 ♀, 24.IV.-6.V. 1965 (J. Klimesch), allotype, genitalia slide 10039.

A small, pale species with characteristic markings, moderately resembling *C. berberidella*, but much smaller and paler, with only one subterminal fascia and distinct genitalia.

The aberrant gnathos arms, the shape of the valva and the unusual ampulla suggest a subgeneric distinction of this species, but other characters are quite normal.

Carposina cinderella spec.nov. (fig. 3)

M a l e : 16.5 mm. Head light grey, vertex slightly infuscated. Antenna (missing but for a stump), whitish, grey-ringed. Palpus rather long, porrected, dilated by roughish scales beyond middle, grey, outwardly densely suffused with blackish-grey. Thorax grey, sprinkled with blackish-grey. Abdomen glossy slaty-grey, top becoming whitish. Fore wing oblong, sublanceolate, rather narrow, costa gently curved throughout, apex subobtuse, termen gently convex, oblique. Whitish-ochreous, densely dusted with dark grey, except along posterior edges of dark fuscous markings. Basal patch conspicuous, from 1/6 of costa, edge raised, well-defined, very inwards-oblique and gently concave; a transverse moderate band at 1/3, parallel to edge of basal patch, dark fuscous, formed of three spots: costal largest, triangular, median rounded, dorsal subtriangular, with base obliterate; space before this band coarsely strewn with dark grey scales except edges, space beyond band finer strewn, dusting forming a darker large blotch on upper half of cell, filling out its half, extending to discoidal spot and extending downwards slightly beyond it; discoidal blackish posterior edge strongly sinuate and well defined, anterior fused with suffused blotch; posterior half of costa with some fine dark fuscous obliquely transverse marks of diverse size, rather obscured by dark streaks along veins; veins beyond cell all streaked with blackish, streaks becoming thicker on margin; a transverse, slightly attenuated band of fuscous suffusion well before termen, preceded by an ill-defined parallel patch of light ground colour, from well below costa to dorsum, hardly dusted with

darker but not quite interrupting dark streaks on veins. Cilia whitish-ochreous, rather infuscated and with faint large greyish blotches between veins.

Hind wing with a slight cubital pecten; light grey, becoming suffused with dark grey from middle to costa. Cilia concolorous.

M a l e g e n i t a l i a : Tegumen broad and slightly depressed. Uncus conical, with laterally extended shoulders, submembraneous throughout. Gnathos arms not exceeding uncus, rather thick, without median cavity, upper half with lateral spines, lower, with spicula. Vinculum large, almost 1/2 length of valva, triangular, top obtuse, base thickened. Valva rather short posterior half narrowed, bristly except along costa, top obtuse; sacculus oval, sclerotic ampulla at its top, moderate, straight and obtusely pointed with longitudinal cracks. Aedeagus as long as valva, straight, stalk 1/2, top rather irregular, with a single patch of long spines in disc to the left from middle.

Canary Islands, Teneriffa, Guimar (Pinker), 1 ♂, holotype, GS 10040.

A medium-sized species, with much narrower and more greyish tinged fore wings than in *C. gigantella* REB. Again the genitalia are decisively distinct from other known species, by the shape of the heavy ganthos arms and of the valva, sacculus and ampulla.

Carposina anopta spec.nov. (fig. 4,5,6,7)

M a l e : 15-17 mm (holotype 17 mm). Head white, vertex with grey spots, face glossy, silvery white. Antenna creamy with tawny rings, finely long ciliate, cilia appressed. Palpus 1 1/2 times length of head, tawny fuscous, upper edge white, with a loose triangular tuft of long white hairs, terminal segment moderate, subacute, white-tipped. Thorax glossy white, with a pattern of fuscous marks, arranged thus: a central ring with a bar to the head, another longer one, to the apex, and a pair of thick short bars, obliquely to the sides; metathorax white. Abdomen creamy-white, glossy.

Fore wing oblong-suboval, narrow, broadest at $2/3$, costa moderately curved at ends, almost straight in middle, apex pointed-subobtuse, termen a trifle sinuate, almost straight, oblique. Glossy creamy white, scattered with separate dark fuscous dots throughout and marked with dark fuscous slightly suffused spots. Basal patch fuscous, to $1/6$ of costa, with edge darker fuscous, straight, strongly inwards-oblique, moderately roughened with elevated scales; a paler small spot beyond extreme base of dorsum; costa from before $1/3$ to apex with seven moderate, dark brown spots, first and second more distant, about equidistant with edge of basal patch, second slightly submedian; second to last rather equidistant, slightly oblong, truncate posteriorly; an oblique series of three rounded and raised scale-tufts, equidistant, parallel to edge of basal patch, from below and just beyond first costal spot, to below fold; an oblong, outwards-oblique large tuft below lower edge of cell at $2/5$ of wing; an inwards-concave tufted streak along end of cell, pale edged posteriorly, with a dark spot between this and fourth costal spot; a pale area beyond these markings reaching to tornus, more or less narrowed upwards, not quite reaching costa; apical and terminal edge narrowly dark fuscous, slightly dilated on ends of terminal veins. Cilia creamy, suffusedly barred by grey, with a suprmedian and a basal creamy line.

Hind wing with a cubital pecten; white with a silky gloss and a finest greyish suffusion towards costa and apex, veins finely marked slightly darker. Cilia concolorous.

F e m a l e : 18 mm. Head as in male, antenna unicolorous fuscous. Palpus over 3 times length of head with a loose whitish tuft above, becoming shorter posteriorly, and a more appressed rough fringe towards apex of median segment below, whitish, lower half mixed with fuscous. Otherwise very similar to the male, but less densely dusted, with dark markings more extended, but paler; wing beyond cell less darkly suffused throughout, with a faint subterminal fascia from penultimate costal dot, to dorsum before tornus.

Hind wing with cubital pecten; narrowly oblong-suboval, unicolorous greyish-white.

M a l e g e n i t a l i a : Tegumen moderate, rounded-truncate. Uncus, a pointed, slender cone, beset with short hairs. Gnathos arms very slender, thin and hyaline, slightly clavate, with a median streak of small aciculae. Vinculum strong, darkly staining, end obtuse. Valva small,

oblong oval, with a rounded top, thinly bristled along edge, except costa, sacculus under 1/2, darkly staining, ampulla a simple spike with a gradually dilated base, in lateral aspect concave. Aedeagus awl-shaped, filled with cornuti.

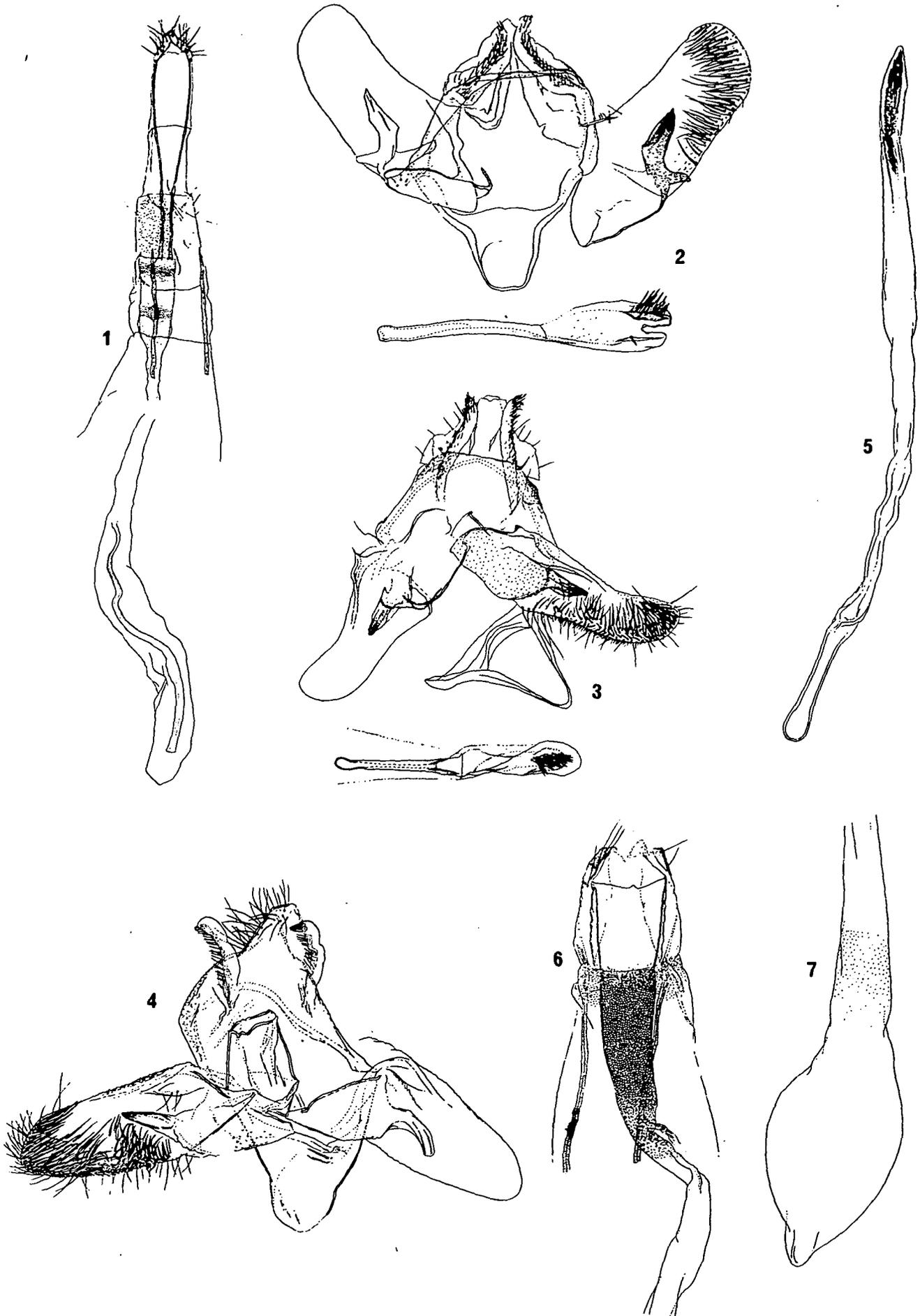
F e m a l e g e n i t a l i a : (Ovipositor missing). Ostium and cilliculum, a wide, gradually narrowed tube, its upper third sclerotic and simple, with a small triangular frontal prominence of the upper edge, lower 2/3 of the tube minutely reticulate. Ductus bursae rather wide, minutely aciculate-granulate. Signa absent.

Madeira, Rabaçal, 1000 m, 18.IV.1967 (F. Kasy), 1 ♂, holotype, GS 10749; 1 ♂ paratype, GS 10754; 1 ♀, allotype, GS 10748.

A narrow-winged, small species, of the same appearance as *C. atlanticella* REBEL, but distinct by darker tinge, slightly larger size and quite different female genitalia.

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Fig. 1-2 *Carposina sublucida* sp.n.; fig. 1 - ♀ allotype, genitalia; fig. 2 - ♂ holotype, with below: aedeagus; fig. 3- *C. cinderella* sp.n. ♂, holotype, genitalia, with below: aedeagus; fig. 4-7 *Carposina anopta* sp.n.; fig. 4 - ♂ holotype, genitalia; fig. 5 - aedeagus; fig. 6 - ♀ allotype (ovipositor missing); fig. 7 - bursa copulatrix.



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