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REVIEW OF THE CENTRAL AMERICAN CASTNIA INCA COMPLEX (CASTNIIDAE)

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The genus *Castnia* has long been an intriguing group scientifically, and the rarity of specimens has made them a prize among collectors. The scarcity of specimens also led early workers such as Walker (1854), Boisduval and Guenee (1874), Westwood (1875), and others to describe new species from single specimens or paintings, undoubtedly contributing to the present confusion in the nomenclature of the group.

Houlbert's monograph on the family Castniinae (1918) is deficient in many respects as noted by Rothschild (1919) and Talbot (1919). Houlbert divided the family into 33 genera, 21 of which were described as new. He designated *Papilio licus* Drury as the type species of the genus *Castnia,* but the type species is *C. penelope* Schaufuss 1870 (= *Papilio icarus* Cramer [1775] preoccupied). For further discussion of the name *Castnia,* see Hemming, 1967.

Houlbert's genera were based wholly upon wing patterns and small differences in the shape of the pulvillus and the paryonychium. There is much additional variation within this family, particularly with regard to venation and at least the male genitalia. Houlbert did venation drawings for some of the genera he designated, but drawings do not appear for all of the new genera. The differences of last tarsal segment appear in some cases to be because of relative size differences of the insects themselves.

To make his monograph stronger Houlbert should have done comparative genitalic studies, particularly on the generic level. Houlbert's only genitalic figures are highly deceptive and quite similar, although preparations of both species are quite different. The male genitalia of *C. cacica* and *C. penelope* (the type of the genus) are illustrated in Figures **1** and **2**. Houlbert's figures did not show nor did the descriptive text mention anything about the recurved penis characteristic of the members of this family. Strangely, preliminary investigations show that genitalically *C. penelope* is closer to the mimetic "genus" *Gazera* than to many more "conventional" *Castnia.* Hence, the male genitalia alone will give no final answer to the phylogenetic relationships, but they must be taken into consideration along with the other characters.

Until further work can be done, I will follow Rothschild (1919) and Talbot (1919) and refer to the entire genus as *Castnia* rather than the generic assignments of Houlbert. Rothschild (1919) mentioned briefly that Jordan was working on a monograph of *Castnia,* but regrettably it was never published. Some of the nomenclatorial confusion in this family might have been averted had he published his findings.

As stated previously, specimens of this family are rare. As sufficient material becomes available, further taxonomic work will be published. Sufficient material has been accumulated in the Central American *inca*

complex, but there are some South American relatives of *inca,* few specimens of which are available, so meaningful work cannot be done at this time on the entire group.

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The Central American Castnia inca Complex

This group is characterized above by warm to dark brown forewings with brown markings and up to three hyaline subapical spots. The ground color of the hindwings is pale yellow-orange to bright orange marked by a black extradiscal black spotband. Ground color of the forewing and the hindwing below is paler than above with markings similar to those of the upper surface.

The venation (Figs. **3, 4**) is characteristic of *Castnia* with additional closed cells on the forewing and the hindwing. There is variation in placement of the veins with respect to relative size differences. The small cubital stub off the hindwing closed cell may be present or absent in members of the complex examined.

Male genitalia are diagnostic within the group, but the female genitalia (Fig. **5**) are not significantly different.

Key to the Central American Castnia inca Complex

Note: the female of *C. inca dincadu,* n. ssp., is unknown and the female of *C. flavimaculata,* n. sp., is described from a photograph of specimens in the collection of Alberto Diaz Frances.

1. Ground color of forewing above more or less uniform with darker markings (males) ..... 2.

1′. Ground color of forewing above brown to brownish-black with highly contrasting grey to tan bar across cell and grey to tan at end cell and inside transverse line from apex to inner lobe (females) ..... 6.

2. Ground color of forewing above warm yellow-brown with brown markings ..... 3.

2′. Ground color of forewing above reddish-brown to brown with dark brown or olive brown markings ..... 5.

3. Hindwing above, bright orange with a yellow extradiscal spotband outlined in black, and black costal bar present; Morelos and Guerrero Mexico ..... *C. flavimaculata,* n. sp.

3′. Hindwing above with completely black extradiscal spotband and without black costal bar ..... 4.

4. Hindwing above, pale orange, yellowed in disc, margin ochreous; subapical spot R_5-M_1 reduced or absent; Canal Zone ..... *C. inca dincadu,* n. ssp.

4′. Hindwing above, golden orange, margin (usually) black; forewing subapical spot R_4-R_5 ovoid, three times the size of other two; Central America ..... *C. clitarcha* Westwood.

5. Hindwing above, black extradiscal spotband wide, contiguous to space Rs-M_1; small usually light yellow uniform spotband posteriad to extra-discal spotband; Veracruz, Mexico ..... *C. inca orizabensis* Strand.

5′. Hindwing above, black extradiscal band thinner, with uneven

spotband posteriad same color as disc; most of Mexico to at least Chiriqui ..... *C. inca inca* Walker.

6. Hindwing above, bright orange with a yellow extradiscal spotband outlined in black, and black costal bar present; Morelos and Guerrero Mexico ..... *C. flavimaculata,* n. sp.

6′. Hindwing above, with completely black extradiscal spotband but without black costal bar ..... 7.

7. Prominent extradiscal globular spot on forewing above in Cu_{1a}-Cu_{1b} (Fig. **12**); hindwing above orange with area posteriad to extradiscal black band lighter yellow; Central America ..... *C. clitarcha* Westwood.

7′. Forewing above, no extradiscal spot in space Cu_{1a}-Cu_{1b} (for example, Fig. **20**) ..... 8.

8. Hindwing above, ground color duller with black extradiscal spotband wide, shading into disc and contiguous to space Rs-M_1; small lighter yellow uniform spotband posteriad of extradiscal band (Fig. **26**); Veracruz, Mexico ..... *C. inca orizabensis* Strand.

8′. Hindwing above, black extradiscal spotband thinner with uneven spotband posteriad same color as disc (Fig. **20**); most of Mexico to at least Chiriqui ..... *C. inca inca* Walker.

Castnia clitarcha Westwood, 1875

Figures 6 (♂ genitalia), 11, 12 (♂), 13, 14 (♀)

Castnia clitarcha Westwood, 1875; 176; pl. 31, fig. 2 (female only, figure of male is of *inca*): "Panama, Nicaragua"

Male: Head, thorax, and abdomen brown above, golden tawny below. Antennae brown, gray under club. Palpi golden tawny. Tibia and inner margins of femur golden tawny; rest of leg warm brown.

Forewing above warm brown with brown markings: along costa, most of apex, and margin, two bars across cell. one two-thirds up cell and one at end cell, a transverse line from apical patch to inner lobe, a small spot in M_1-M_2 outside transverse line and two larger spots outside transverse line in M_3-Cu_{1a} and Cu_{1a}-Cu_{1b}; three hyaline subapical spots in R_3-R_4, R_4-R_5 (largest), and R_5-M_1.

Hindwing above, orange with black margin grading to yellow-orange at tornus, with an isolated small black spot in Sc+R_1-Rs and a partially coalesced extradiscal black spotband from Rs-M_1 to 2A-3A; veins between marginal black band and spotband outlined in black, weakly connecting the two bands.

Forewing below: warm brown along costa, at apex and along margin; lower two-thirds of cell to tornus golden orange; rest of wing tawny yellow with similar markings as above: bars across and at end cell blackish-brown but sometimes orange; transverse dark brown line terminates at M_3.

Hindwing below pale yellow-orange with warm brown along costa and margin; markings as above except spotband and isolated extradiscal spot rust to golden brown, with warm brown inside; area posteriad to spotband paler tawny orange; tawny at tornus and inside extradiscal spotband in 2A-3A; ovoid warm brown bar from inner margin costad.

Fringes of forewing above and below warm brown. Fringes of hindwing above and below warm brown with gold at tornus.

Lengths of forewings of the two males examined 51 mm. and 55 mm.

Male genitalia similar to those of *inca* but considerably reduced in size. Valvae more rounded; saccus reduced and curved ventrad.

Female: Head, thorax, and abdomen similar to male. Forewing above gray-brown with darker brown markings which are more prominent because of intervening tan anterior areas: horizontal bars across cell and at end cell; row of submarginal blackish-brown spots outside subapical hyaline spots from R_4-R_5 to Cu_{1a}-Cu_{1b} (not in male); blackish-brown extradiscal spots outside transverse line in spaces M_2-M_3, M_3-Cu_{1a}, Cu_{1a} Cu_{1b}, and Cu_{1b}-Cu_2. Female hindwing above as in male with area posteriad to black extradiscal spotband lighter yellow-orange.

Forewing below warm brown along costa, around apex, and along

margin; lower two-thirds of cell laterally to tornus golden-orange; rest of wing tawny-yellow with prominent blackish-brown markings as above except row of submarginal spots outside subapical hyaline spots from R_4-R_5 to Cu_1 -Cu_{1b} lighter. Hindwing below as in male.

Fringes of forewing as in male. Hindwing fringes tan at costal margin and warm brown along margin.

Length of forewing of the female examined, 65 mm.

Material examined: PANAMA: Chiriqui, 1♂ (W. J. Kaye, A): HONDURAS, 1♂ 1♀ (USNM).

Of the Central American species considered this appears to the rarest and largest.

Castnia inca inca Walker, 1854

Figures 7 (♂ genitalia), 5(♀ genitalia), 18, 19, 28-31 ♂), 20, 21 (♀)

Castnia inca Walker, 1854: 24-25. (Figured in Butler, 1877: pl. 1, p. 3, pl. I) "Mexico, Venezuela, Honduras".

= *Castnia clitarcha* Westwood (*in partim*) 1875: 176, pl. 31, fig. 1 (♂ only).

= *Castnia inca hondurana* Strand, 1913, p. 11.

Male: Head, thorax, and abdomen above brown, below golden tawny. Antennae above and below dark brown. Palpi brown above, whitish below. Legs: tibia clothed with golden-tawny; rest of leg rust to dark brown.

Forewing above rust-brown to brown with dark brown to olive-brown markings: olive-brown along costal margin with dark brown at apex and along margin; two brown diagonal bars, one two-thirds up cell and one at end cell, dark brown transverse line from apex to inner margin lobe; hyaline subapical spots in spaces R_3-R_4, R_4-R_5, and R_5-M_1 with spots in R_3-R_4 and R_5-M_1 sometimes markedly reduced; brown extradiscal spots outside the transverse line may occur in spaces M_2-M_3, M_3-Cu_{1a}, and Cu_{1b}-Cu_2; area outside transverse line from Cu_2 to tornus brown with interspersed rust and white scales.

Hindwing above golden orange to reddish-orange, costal margin overscaled with black, blackish-brown or orange-brown; contiguous black extradiscal spotband from Rs-M_1 to Cu_2-2A; margin rust (may be black) with black along veins interconnecting the extradiscal spotband and margin; isolated black extradiscal spot in Sc+R_1-Rs (may be reduced or absent); inner margin to tornus various shades of rusty gold, with interspersed tawny scales at tornus.

Forewing below warm brown along costa, at apex, and along margin; a patch of brown with scattered yellow scales at apex in space R_3-R_4; golden orange two-thirds up cell extending laterally on lower half of wing; other areas tawny with same markings as above: markings inside and end of cell and outside transverse line blackish-brown with gold shading; transverse line shades from warm brown at apex to golden orange near dark brown scaled patch in Cu_2-2A.

Hindwing below tawny yellow, slightly darker along costa and margin; markings as above with the extradiscal spotband outlined in rust brown with tawny scales inside and whitish spots in spaces Cu_2-2A and at tornus; darker ovoid streak from inner margin laterally to costa.

Forewing fringes above and below brown with a few gold scales at tornus. Hindwing fringes above and below tawny gold.

Lengths of forewings of male specimens examined ranged from 40 mm. to 52 mm., averaging 46.4 mm.

Male genitalia as figured and quite large with a curved saccus and well developed ventral lobe of the valve.

Female: Head, thorax, and abdomen as in male. Ground color above usually blackish-brown with markings as in male; intervening areas separating two bars across forewing cell, toward subapical hyaline spots, and along transverse line grayish-tan; shaded area outside transverse line more extensive than in male, from M_1 to tornus with shades of golden brown and rust with interspersed tawny white scales; extradiscal spots outside transverse line larger than in male. Hindwing above as in male.

Forewing below warm brown to brown along costa, at apex, and along margin; brown patch at apex in space R_3-R_4 with scattered tawny scales;

hyaline subapical spots heavily outlined in blackish-brown; pale areas as above with golden tawny shading outside transverse line; posterior third of cell and wing laterally to transverse line golden orange; markings as above, but darkened with extradiscal spots outside transverse line black or blackish-brown outlined in golden orange; transverse line shades from blackish-brown at apex with scattered tawny scales into golden orange and merges into a brown scaly patch in space Cu_2-1A. Hindwing below with markings as in male, but with ground color more golden orange; extradiscal spot band brown to warm brown; warm brown along costa and margin with interspersed tan scales; area posteriad to extradiscal spotband and inside ovoid marking paler; tawny-white scales present in extradiscal spotband prominent in space 2A-3A and at tornus.

Forewing fringes above and below brown with golden brown at tornus. Hindwing fringes above and below tawny gold.

Forewing length of females examined ranged from 48.5 mm. to 62 mm., averaging 47.9 mm.

Material examined: MEXICO: CHIAPAS: San Carlos, 2♂ v (R. G. Wind, A); San Quintin, 24♂ 3♀ v, vi, vii, x (R. G. Wind, A); Santa Rose, 1♂ iv (LACM); "Chiapas", 11♂ 3♀ (coll. Frank Johnson, AMNH). OAXACA: Tapantepec, 1♂ vi (A. Diaz Frances, A). GUERRERO: Chilpancingo, 1500 m., 1♂ (W. J. Kaye coll., A). "Mexico", 1♀ (Hoffman, AMNH).

GUATEMALA: Escuintla, 1♂ (Schaus and Barnes coll., USNM).

BRITISH HONDURAS: no further data, 1♂ (coll. Frank Johnson, AMNH).

Costa Rica: no further data, 1♂ (CM).

This appears to be the most common members of the *inca* complex with its range extending from southern Mexico to at least Chiriqui (to Costa Rica in the material examined). There is a great deal of variation in this species with some markings present, reduced or absent with not apparent distinguishing difference. The Chiapas population is particularly variable and for *Castnia,* a large one (Figs. **28-31**).

Castnia inca orizabensis, Strand, 1913

Figures 24, 25 (♂), 26, 27 (♀)

Castnia clitarcha orizabensis Strand, 1913, p. 11, Orizaba, Mexico.
= *Aciloa orizabensis* (Strand), Houlbert, 1918, p. 447
= *Aciloa inca* var. *mexicana,* Houlbert, 1918, p. 441 (based on figure and description of C. Hopffer, 1856, p. 6, pl. IV, fig. 2).

Male: Similar to nominate *inca* Walker but differing in the following respects: forewing above with subapical hyaline spot in space R_5-M_1 (usually) reduced; brown extradiscal markings outside transverse line always present in spaces M_3-Cu_{1a} and Cu_{1b}-Cu_2; Hindwing above with black extradiscal spotband wider, a solid contiguous mass from space Rs-M_1 to Cu_2-2A; margin usually black but may have rust overscaling; black along veins from black extradiscal spotband to margin, forming a uniform lighter yellow spotband.; isolated black extradiscal spot in space Sc+R_1-Rs always large and prominent.

Differences on forewing and hindwing below from *inca inca* are the same as mentioned above.

Lengths of forewings of males examined ranged from 37 mm. to 49 mm., averaging 40.23 mm.

Male genitalia similar to those of typical *inca* but reduced in size.

Female: Forewing above and below similar to that of *C. i. inca* with differences noted under male. Hindwing above and below similar to those of male *inca orizabensis.* Overall appearance of female is duller than male.

Lengths of forewings of females examined 51 mm. and 44 mm.

Material examined: MEXICO: VERACRUZ: Cordoba, 4♂ (Schaus coll., USNM); Motzorango, 1♂ viii (coll. C. C. Hoffman, AMNH); Presidio, 1♂ 1♀ (USNM); Jalapa, 1♂ (USNM); Fortin de las Flores, 3♂ (R. G. Wind, A); 2♂ 1♀ "Orizaba" (USNM).

1♂ NO DATA (Schaus coll., USNM).

The range of *C. inca orizabensis* is restricted to the state of Veracruz, Mexico and more than likely it lives along the lower flanks of the mountains in the area. This subspecies is smaller than typical *inca,* but the most prominent difference between the two is the uniformly lighter yellow spotband

posteriad to the wide black extradiscal spotband. The yellow spotband is lighter than the yellow-orange ground color of the hindwing disc in *orizabensis*.

Castnia inca dincadu, new subspecies

Figures 8 (♂ genitalia), 22, 23 (♂)

Male: Head, thorax, and abdomen above warm brown and below tawny gold. Antennae above brown, below reddish-brown. Palpi tawny. Legs rust with tawny along inner margins.

Forewing above ground color golden brown with brown markings not the rust or olive brown of *inca inca;* hyaline subapical spots present as in *i. inca* in R_3-R_4, R_4R_5, but usually absent in R_5-M_1; markings similar to that of *i. inca* with a distinct brown spot always present in space M_3-Cu_{1a}.

Hindwing above with markings similar to *i. inca:* ground color yellow-orange with lighter area in disc; black extradiscal spotband yellowed and usually distinguishable into separate spots; margin always bright rusty orange with interspersed black scales and with rusty orange scales along veins posteriad of extradiscal spotband to margin; basal overscaling reddish-orange unlike the brownish-black overscaling of *inca inca.*

Forewing below paler than in nominate *inca* with similar markings as above: bars across cell and at end cell orange to orange with dark brown scales; golden brown along costa, warm brown at apex shading to golden brown along margin; margin very pale golden brown, rather than warm brown of typical *inca;* faint row of submarginal dark brown spots with tawny scales always present in spaces R_4-R_5, R_5-M_1 and M_1-M_2; these spots are not as prominent in the other two subspecies, male or female.

Hindwing below with typical markings of the *inca* complex, but pale yellow-orange; extradiscal spotband very faint with whitish scales absent inside spotband in space 2A-3A and at tornus (typical *inca* and *inca orizabensis* both have whitish scales in both areas).

Length of forewing of Holotype ♂, 47 mm.; lengths of the forewings of the five Paratypes range from 41 mm. to 51 mm., for an average of 47 mm.

Male genitalia: similar to typical *inca;* lower process of uncus will developed with saccus curved ventrad at very tip and valvae relatively larger and much rounder than in *i. inca.*

Female: unknown

Described from six males from the Canal Zone.

HOLOTYPE ♂: CANAL ZONE: Piña, 23.v.1970 (H. L. King); ♂ genitalia slide 2227 (Jacqueline Y. Miller).

PARATYPES: 5♂, same data as Holotype.

The entire type series will be deposited in the Allyn Museum of Entomology.

This new subspecies of *C. inca* is quite distinct on the upper surface from the other two with its noticeably paler appearance and conspicuous lighter yellow disc and yellowed black extradiscal spotband on the hindwing. It obviously belongs to *inca* with the characteristic basal shading of the hindwing. The absence of whitish scales in the extradiscal spotband (space 2A-3A) below as well as at the tornus also distinguishes it from the other two subspecies.

At present this subspecies is restricted to the Canal Zone, where, according to H. L. King, it's flight period is only about a week. All of the specimens included in the type series were taken on one day, a rather remarkable catch in *Castnia.*

Castnia flavimaculata, new species

Figures 9 (♂ genitalia), 15, 16 (♂), 17(♀)

Male: Above, head and thorax brown, abdomen fulvous; head, palpi, thorax and abdomen below pale yellow on inner margins.

Forewing above, reddish-tan with warm brown markings: two thin brown bars across cell, one two-thirds up cell and one end cell; three subapical spots present as in *inca* in spaces R_3-R_4, R_4-R_5, and R_5-M_1; transverse line from near apex to inner lobe poorly developed compared to other members of *inca* complex; transverse line indicated by a thin line except at inner lobe where it is

overscaled with dark brown; four extradiscal brown spots outside transverse line, one each in spaces M_1-M_2, M_2-M_3, M_3-Cu_{1a}, and Cu_{1b}-Cu_2.

Hindwing above, bright orange with yellow extradiscal spotband outlined in black from Rs-M_1 to Cu_2-2A; area posteriad of extradiscal spotband orange except in spaces Cu_{1b}-Cu_2 and Cu_2-2A and at tornus where it is yellow; a dark brown ovoid line (usually) extends to the costa around base; a small dark brown isolated spot occurs in space Sc+R_1-Rs.

Forewing below: warm brown half way up costa shading to yellow toward apex, margin reddish-tan; apex tawny in space R_3-R_4; markings as above but darkened; lower third of cell and lower two-thirds of wing bright orange; other areas tawny.

Hindwing below: pale orange with golden orange along anal margin; reddish-brown halfway along costa shading to tanish-white along the remainder of costa and margin; extradiscal spotband tawny-white outlined in reddish-brown toward costa, shading to blackish-brown at tornus; area posteriad of extradiscal spotband pale orange except tawny-white in spaces Cu_{1b}-Cu_2 and Cu_2-2A; isolated reddish-orange in space Sc+R_1-Rs; reddish ovoid line from inner margin along hindwing cell to costa; fulvous along veins posteriad to extradiscal spotband and at margin.

Fringes on forewing above and below reddish-brown; hindwing fringes above and below golden brown with golden orange at tornus.

Length of forewing of Holotype ♂, 42 mm.; lengths of forewings of other 16 ♂ Paratypes range from 40 mm. to 53 mm., averaging 46 mm.

Male genitalia: smaller than other members of this group; uncus flat rather than curved ventrad as in some other members of the *inca* complex; lower processes of uncus not as well as developed; saccus short and curved, gnathos simple; valvae smoothly curved ventrad.

Female (Described from photo, upper surface only): Head, thorax, and abdomen slightly darker than male; ground color yellowish-tan with dark brown markings as in male, but darker and more extensive; basal shading at inner margin below the cell, from Cu_{1b}-1A, not shown in ♂.

Hindwing above as in male.

Length of female forewings: 56 mm. and 65 mm.

Described from 19 specimens, 17 males and two females, from Morelos and Guerrero, Mexico.

HOLOTYPE ♂: MEXICO: MORELOS: Tepozitlan , 1600 m., vi. 1972 (A. Diaz Frances)

PARATYPES 15 ♂ 2 ♀, same locality as Holotype, various dates; GUERRERO: Acahuizotla, 1♂ v. 1960 (all A. Diaz Frances).

The Holotype and six male Paratypes will be deposited in the Allyn Museum of Entomology. The remainder of the specimens are in the collection of Alberto Diaz Frances.

Sr. Diaz Frances has taken a number of these specimens since 1960 mostly from northern Morelos, between Mexico City and Cuernavaca. Apparently this species lives along the escarpment in this area.

DISCUSSION

The key as well as descriptions of each member considered in the Central American *inca* complex should help eliminate the confusion in identifying members of this group. Single characters such as Westwood's (1875) "richly coloured and marked margin" of *clitarcha* (which is usually black) and Strand's (1913) isolated black spot on the costal margin of the hindwing in *inca* (which also occurs in *clitarcha*) should not be employed by themselves. Even Rothschild (1919) had some difficulty in determining true *inca* since the Tring collection had no specimens from any of the original type localities, but there were a number of specimens of *"clitarcha"*, including some specimens from Costa Rica, Guatemala, and the Vulcan de Chiriqui. The range of both *inca* and *clitarcha* somewhat overlap (Fig. **10**) perhaps in Guatemala and definitely in Honduras and Costa Rica. Rothschild was rather unsure about both species and thought the *clitarcha* and *inca* might be one species, *inca*. The darker coloration of the forewing in *inca* as well as the markings, the basal overscaling of the hindwing in *inca,* and the genitalia separate both into perfectly good species.

Perhaps the most perplexing taxon in the entire group is nominate *inca*. Walker

(1854) even in his original description mentioned that the Mexican specimen varied from his other two. His description of the Mexican specimen could easily fit *inca orizabensis*. The material examined in this group was primarily from the southern states of Mexico: Guerrero, Oaxaca, and Chiapas. The material particularly from San Quintin, Chiapas, shows a wide array of morphological forms and intergrades, none nameable. The forewing ground color in all of these specimens is the same rust brown to dark brown with darker brown to olive-brown markings, but the number of extradiscal spots outside the transverse line vary, some specimens have three while other have only one. The hindwing configurations are extremely variable with the width of the black extradiscal spotband either large and contiguous or thin and reduced almost into separate spots (Figs. **28-31**). The basal overscaling of the hindwing may be black, brown or various shades of orange-brown. Consequently with all of these patterns in the same population, there are gradation from typical *inca inca* toward *inca orizabensis* and some specimens which approach *inca dincadu* of the Canal Zone. The latter, of course, is considerable paler and the spotband yellowed. Genitalically all of these morphs fall well within the range of nominate *inca*. Perhaps these species have only recently been separated, or possibly the isthmus of Tehuantepec is not a potent barrier between the Veracruz and Chiapas populations. Further filed work as well as morphological studes must be done to clarify the situation.

Houlbert (1917, 1918) figured and described *Castnia (Aciloa) briareus* (1918: 445, ♂ fig. 3816, ♀ 3817). The name *briareus* was an unpublished Guenee name and the specimens figured in Houlbert's monograph were a male and female from "1′ ancienne collections" of Boisduval and Guenee. The specimens were reputed to be from "1′ Amerique meridionale" and are obviously *inca* relatives with the characteristic hindwing basal shading. The specimens are duller and closely resemble *inca orizabensis* but have yellow inside the black extradiscal spotband. They are obviously not *C. flavimaculata* as comparision of the figures will show. Inasmuch as *C. briareus* has not turned up in recent Central American collections, I suspect that it may be South American and as such beyond the scope of this paper.

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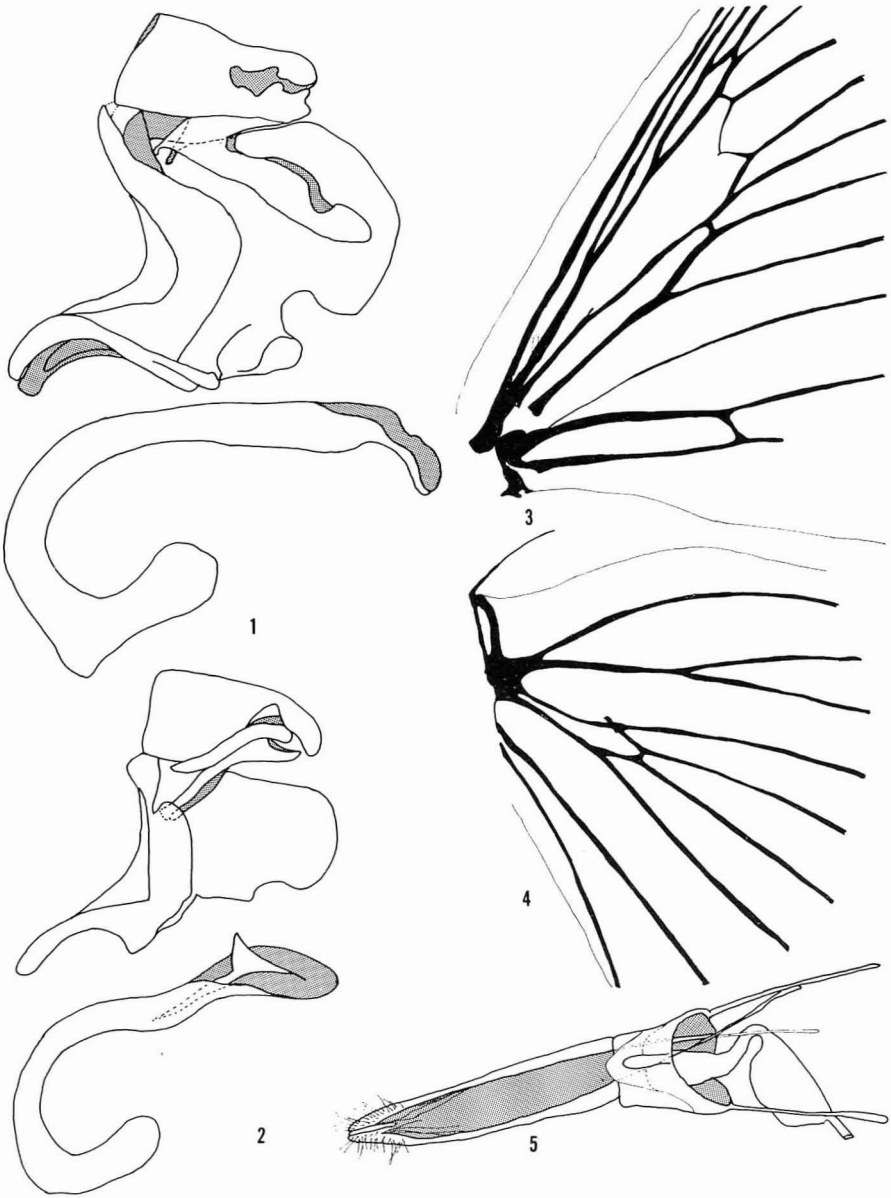
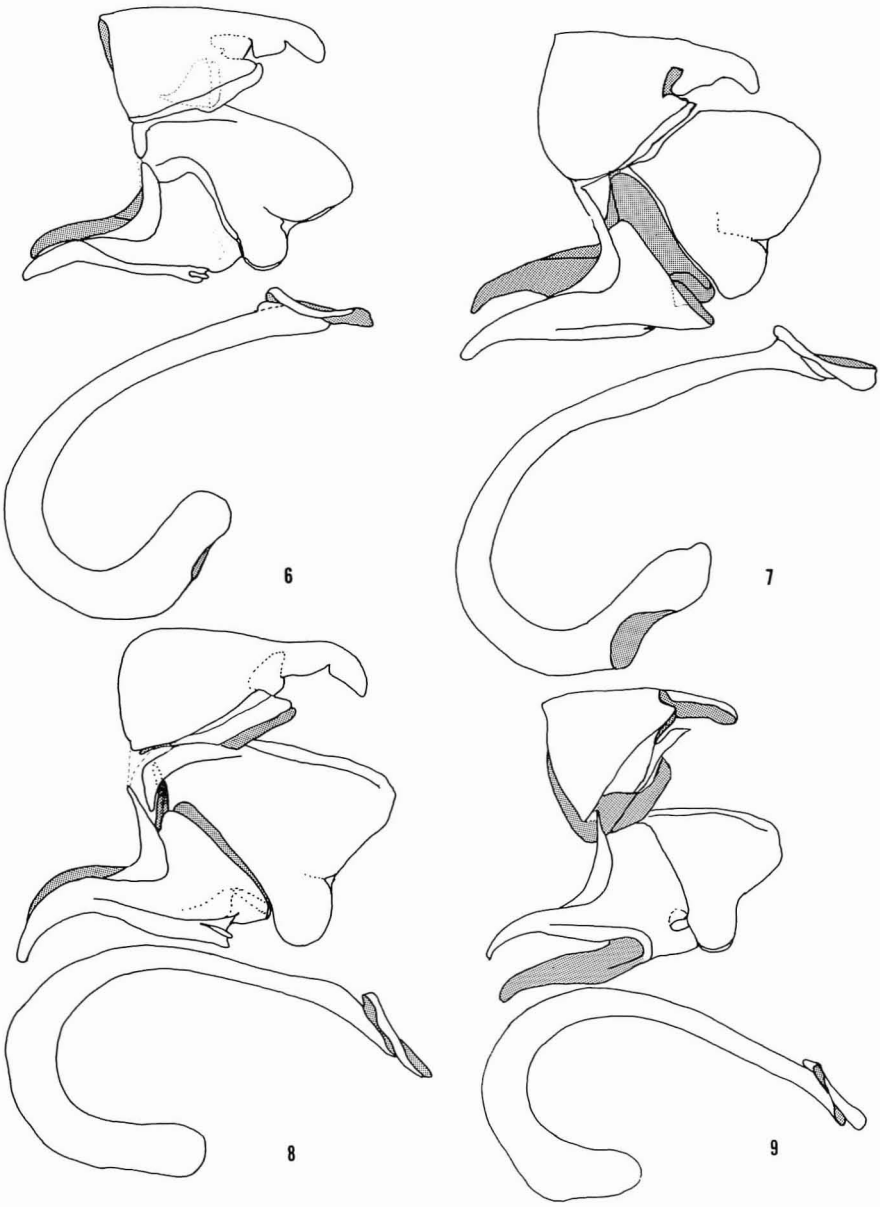


Figs. 1-5, *Castnia*. 1, *C. cacica*, ♂ genitalia (Slide M-2351). 2, *C. penelope*, ♂ genitalia (Slide M-2352). 3, *C. inca inca*, forewing venation. 4, Same, hindwing venation. 5, Same, ♀ genitalia (Slide M-2344).



Figs. 6-9: *Castnia* ♂ genitalia. 6, *C. clitarcha* (Slide M-1772). 7, *C. inca inca* (Slide M-2226). 8, *C. inca dincadu* Holotype (Slide M-2227). 9, *C. flavimaculata*, Paratype (Slide M-2341).

Fig. 10: Distribution of material examined in the *Castnia inca* complex; because of possible confusion, no literature records are shown. Solid circles = *C. i. inca;* open circles = *C. inca orizabensis;* open star = *C. inca dincadu;* solid stars = *C. flavimaculata;* solid triangles = *C. clitarcha.*

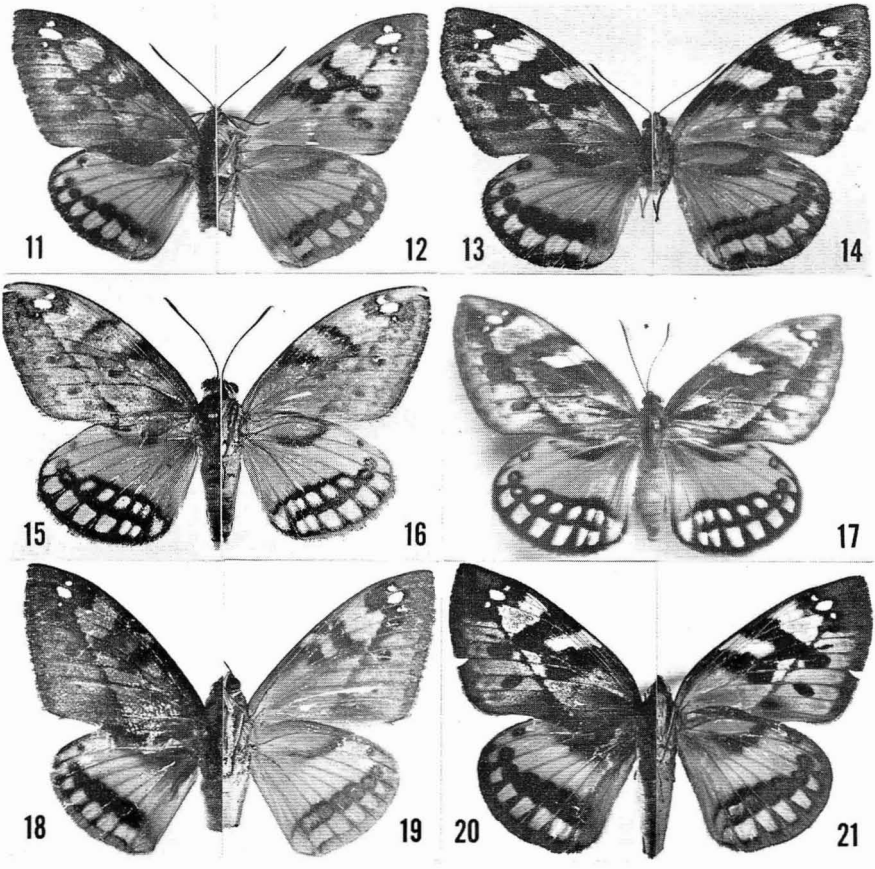


Fig. 11-21: *Castnia.* 11-12, *C. clitarcha,* ♂ upper (11) and under (12) surfaces; HONDURAS (USNM). 13-14, Same, ♀ upper (13) and under (14) surfaces; HONDURAS (USNM) 15-16, *C. flavimaculata.* / upper (15) and under (16) surfaces; MEXICO: MORELOS: Tepozitland (A). 17, Same, ♀ upper surface (photo by A. Diaz Frances). 18-19, *C. inca inca,* ♂ upper (18) and under (19) surfaces; MEXICO: CHIAPAS: San Quintin (A): compares favorably with the type; see Figs. **28-31** for variability in this population. 10-21, Same, ♀ upper (20) and under (21) surfaces; MEXICO: CHIAPAS: San Quintin (A)

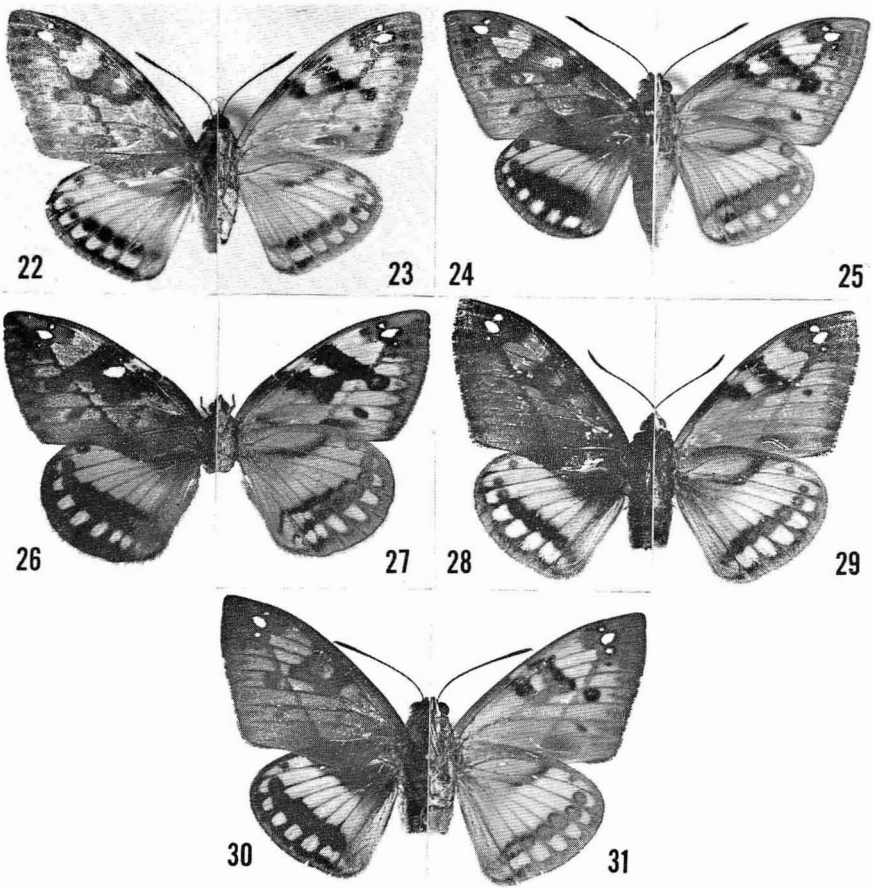


Fig. 22-31: Castnia. 22-23, *C. inca dincadu,* Holotype ♂ upper (22) and (23) surfaces; CANAL ZONE: Piña (A). 24-25, *C. inca orizabensis,* ♂ upper (24) and under (25) surfaces; No data (USNM). 26-27, Same, ♀ upper (26) and under (27) surfaces; MEXICO: Orizaba (USNM). 28-31, *C. inca inca,* ♂ upper (28, 30) and under (29, 31) surfaces; both MEXICO: CHIAPAS: San Quintin (A); see Figs. **18-19** for additional variability in this population.