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STUDIES IN THE CASTNIIDAE. V. DESCRIPTION OF A NEW SPECIES OF *ZEGARA*

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ABSTRACT: Based on a long series of specimens in conjunction with comparative examination of type material**,** a new species of *Zegara* from Colombia is described. This species is closely aligned with *Castnia fernandezi* González, but is markedly different in several diagnostic characteristics. *Zegara fernandezi*, **new comb.** is also proposed. Members of the potential mimicry complex for the new species are explored.

KEY WORDS: Colombia, Venezuela, *Dysschema, Pericopis,* polymorphism

INTRODUCTION

Certain genera within the Castniinae (Castniidae) are involved in mimicry complexes with other genera represented in the Papilionidae, Nymphalidae Lycaenidae, Hesperiidae, Noctuidae, and Arctiidae. Many of the castniid species involved in these complexes are often difficult to discern and have resulted in identification problems. Several of the latter mimetic species are phenotypically plastic and polymorphic and were grouped under subgenera in Miller (1986), pending further review. Upon examination, some of these were found to be valid genera based on discrete morphological features, including wing venation and genitalic traits of both males and females. Additional work and review of some type species are required to clarify these taxonomic relationships. The lack of recently collected material, let alone a series of specimens from any single locality, has hampered further investigation. Although some researchers and field collectors have observed some major emergences of these species in the past, one usually encounters just a few, if any, of these mimetic Castniinae in the field.

In 1992, Dr. Jorge González described a very unusual species, *Castnia fernandezi*, in honor of Dr. Francisco Fernandez Yépez, his former mentor and advisor, at the Museo de Instituto de Zoología Agrícola, Universidad Central de Venezuela, Maracay, Venezuela.

Dr. Fernandez Yépez was long revered by a number of systematists, especially lepidopterists, for his invaluable assistance on various research projects and for bringing scientists together at conferences to discuss and propose future studies of mutual interest. Three specimens of *C. fernandezi* were collected near Puerto Ayacucho, the main camp of Cerro Arakamuni, Amazonas, Venezuela. González originally placed this species in *Castnia*, *sensu stricto*, due to its similarity to *C. endelechia* Druce. González (2003) in a paper on the Castniidae from Venezuela reviewed the original description and noted that the females were similar to the males but that a melanic form of a male had also been collected near the type locality.

In 2007, Dr. Mark Simon (MJS) obtained three specimens of what was thought to be a remarkably dimorphic castniid from Mr. Michael Büche (MB) that had been collected in Colombia. The male was blackish brown on the forewing with a discrete visible pattern, but fulvous in the disc of the hindwing. The dorsal surface of the female was nearly black with an iridescent purplish cast. Subsequent specimens of this species indicated that it was exceedingly polymorphic, and Mr. Büche provided additional photos of specimens in his own collection obtained in the same locality. Comparative examination of the wing venation and male and female genitalia indicated that this species was closely aligned with genus *Zegara* Oiticica (1955). Further dissections and extensive comparative examination of diagnostic features of this series with type specimens of described genera and previous literature (Houlbert 1917, 1918, Lamas 1995, Miller 1972, Rothschild 1919, Talbot and Prout 1919, Westwood 1881) indicated that this was indeed a new species and documents the known polymorphism within a species and population. Examination of a typical female specimen of *Castnia fernandezi* on loan and discussions with González suggested the potential close relationship of *C. fernandezi* with this new species. The description of the typical male and female is presented first with variations for each sex following the original description.

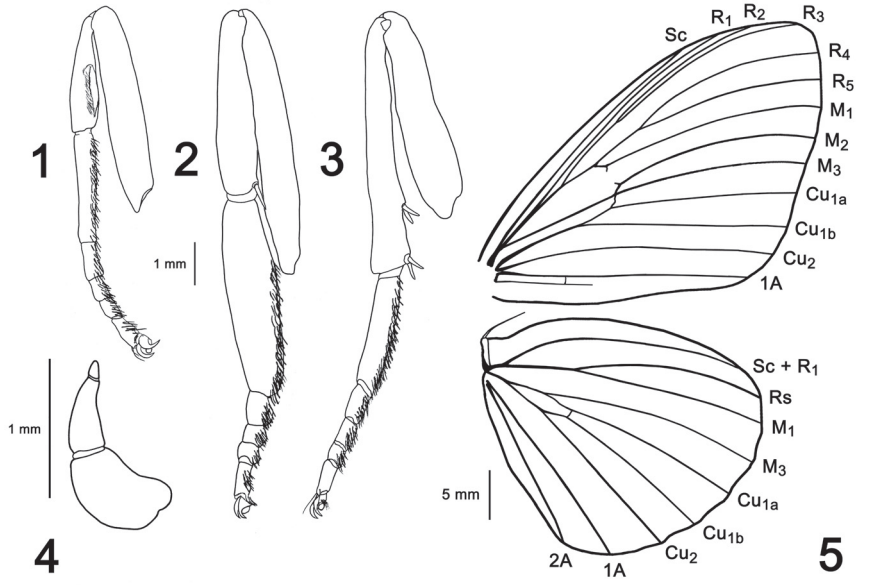
Zegara polymorpha J. Y. Miller, **new species**

Figs. 1-3 (legs), 4 (palpus), 5 (venation), 6-7 (♂ holotype), 8-21 (paratypes), 22 (♂ genitalia), 23a, b (♀ genitalia)

Description. Male (Figs. 6, 7): **Head**: Antenna, slightly more than one-half the length of costal margin; warm brown above and below, flagellum 28 segments, nudum 24, apiculus 5. Vertex and frons clothed in iridescent azure/cobalt blue recurved scales, often transparent at base, with a few fulvous scales laterally on frons; palpi (Fig. 4) reduced, pale yellow on proximal segment, shading to pale yellow admixed with dark brown on the second, and with dark brown on distal segment. Pale yellow setal patch or eyelash (Ehrlich 1960, Miller 1971) present on postocciput.

Thorax: dorsum with iridescent azure/cobalt blue scales on prothorax with tegula blackish brown edged in pale yellow scales; meso- and metathorax blackish brown admixed with elongate iridescent azure/cobalt blue, spatulate scales and setae, especially on metathorax and with reddish fulvous scales and setae on distal scutellum of metathorax and A1. Venter, thorax blackish brown admixed with pale yellow especially along the midline; foreleg (Fig. 1) with epiphysis well-developed and an enlarged brownish black setal tuft below; all legs, coxa clothed in pale yellow and blackish brown with remainder of legs blackish brown with pale yellow line on venter of femur and tibia; blunt spines present on tarsal segments; mesothoracic leg (Fig. 2) with a few reddish fulvous scales on femur proximad and on trochanter, a single pair of tibial spurs, and

proximal tarsal segment inflated; reddish fulvous scales on the dorsal margin of the metathoracic leg (Fig. 3) and two pairs of tibial spurs present.



Figures 1-5. *Zegara polymorpha***: 1)** prothoracic leg, **2)** mesothoracic leg, **3)** metathoracic leg, **4)** labial palpus, **5)** wing venation.

Abdomen: dorsum dark blackish brown admixed with pale yellow and sparse fulvous scales on A1 and A2; A3-A8 similar gradually shading to nearly dark blackish brown on A7 and A8 with enlarged dark brown scales on end segments and a reddish fulvous setal tuft at the end of abdomen. Venter with A1 and A2 fulvous with pale yellow admixed with nearly gray-brown scale patches along midline; A3-A5 similar in coloration with dark brown midline patches decreasing in size and the lateral portions of segments edged in reddish fulvous and enlarged fulvous scales on end segments; A7 and A8 with fulvous scales only and fulvous scales along lateral line; reddish fulvous setae and scale tuft at end of abdomen.

Wing venation (Fig. 5), with forewing cell open and anterior accessory cell absent; radial veins more closely aligned toward costal margin; 3A incomplete and extending to less than one-half distance to the margin. Hindwing, more typical of Castniinae with cell open.

Forewing (FWL = 39 mm): Dorsal surface, ground color blackish brown, darker in cell; a broken, pale yellow band faintly overscaled with pale gray brown extends from costal margin across end cell; a diagonal subapical pale yellow band faintly overscaled with pale gray brown scales and veins darkened extends from R_1-R_2 to M_2-M_3 with the markings in R_1-R_2 and R_2-R_3 pale yellow; a small, similarly colored submarginal spot in M_1-M_2; a series of jagged, elongate, pale yellow fulvous markings overscaled with pale gray brown scales extends from near the end of cell in M_2-M_3 along the cubital stem to Cu_2-1A with two markings in Cu_2-1A; a smaller proximal pale yellow scale patch overscaled with gray brown scales in 2A-3A.

Ventral surface with markings similar to above but markings more distinct and without overscaling with gray brown; carmine red patch along proximal costal margin; small pale yellow scale patch proximad in cell; erect azure/cobalt blue iridescent scales in cell at base extending to apex and along lateral margin to near anal angle; pale yellow admixed with gray brown spatulate scale patch posterior to iridescent azure/cobalt blue patch proximad in cell; a small, dull fulvous spot in R_5-M_1 near origin of R_4-R_5; elongate, jagged markings from near end cell in M_3-Cu_{1a} similar to above but shading from fulvous near end cell to pale yellow in Cu_{1b}-Cu_2 with this pale yellow area extending to anal margin. Fringes, dorsal and ventral, dark brown along lateral margin, shading to cream near Cu_{1a}-Cu_{1b}, and dark brown along anal margin.

Hindwing, dorsal surface with pale yellow along the proximal two-thirds of costal margin, shading to fulvous admixed with pale yellow in disc extending two-thirds to distal margin; veins Sc+R_1 and especially Rs-M_1 heavily overscaled with black with a globular marking proximad on Rs-M_1; distal third of wing blackish brown, paler along lateral margin, with a faint indication of a minute, pale yellow extradiscal spotband encased in a darker black band; pale yellow submarginal spotband extends from M_1-M_3 to 1A-2A; a reddish fulvous setal patch with blackish brown proximad in 1A-2A to anal margin. Ventral surface, fulvous scales reduced proximad, with black globular marking at base absent, and black overscaling on veins Sc+R_1 and Rs-M_1 diffused; ground color on distal third of wing blackish brown, paler near Sc+R_1 and Rs-M_1, and sparsely overscaled with azure/cobalt blue iridescent scales; pale yellow extradiscal spotband evident within a darker black band; pale yellow submarginal spotband present. Fringes, dorsal and ventral pale yellow along costal margin to near Sc+R_1, shading to pale yellow mixed with brown to gray brown around anal angle with pale yellow along anal margin.

Female (FWL = 45 mm) (Fig. 13): **Head**: Antennae, uniformly dark brown; vertex blackish brown; frons blackish-brown admixed with iridescent azure/cobalt blue scales and with a few reddish fulvous scales laterally; palpi, with proximal segment iridescent azure/cobalt blue admixed with blackish brown scales, with increasing blackish brown on middle segment, a lateral line of iridescent azure/cobalt blue, and blackish brown scales on distal segment; pale yellow eyelash present on postocciput.

Thorax, dorsal surface, prothorax iridescent azure-cobalt blue scales with reddish fulvous scales laterally; tegula, dark blackish brown outlined in paler grayish brown scales; meso-and metathorax clothed in blackish brown with elongate scales and setae on scutellum. Ventral thorax blackish brown; prothorax, with iridescent azure/cobalt blue scales and fulvous scales on lateral margins; legs clothed in blackish brown scales.

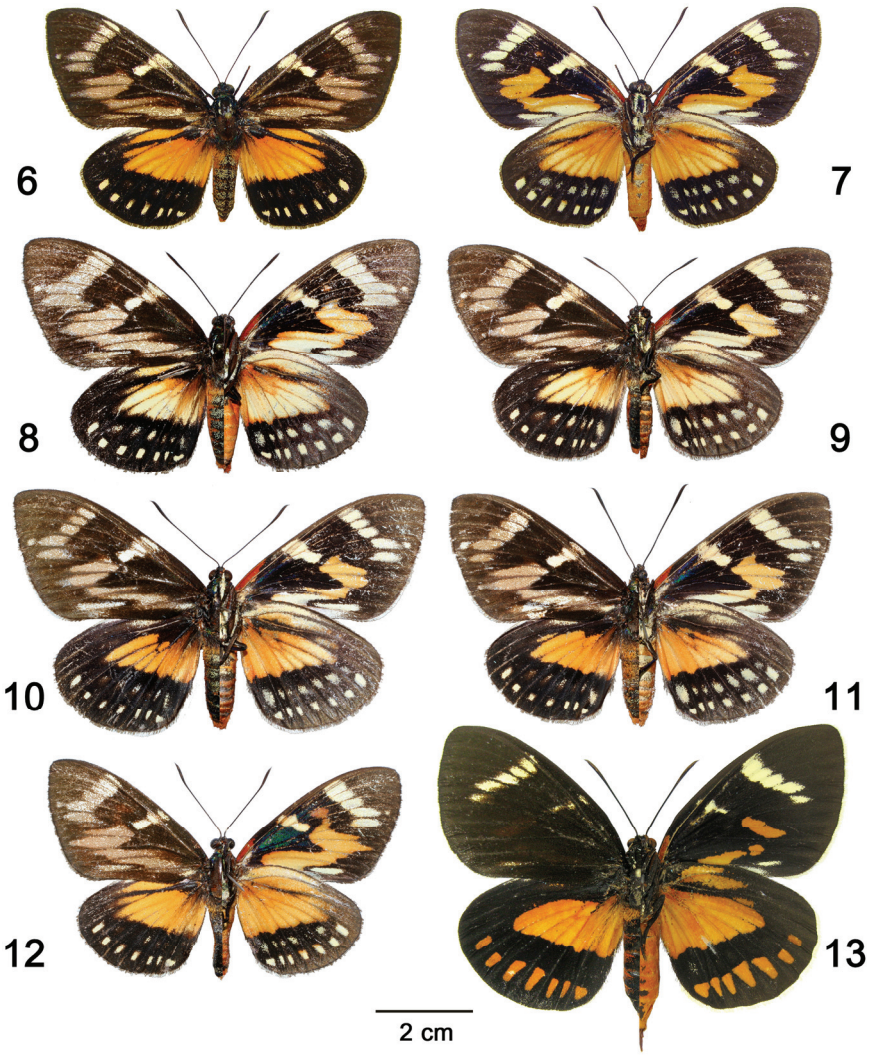
Abdomen, dorsum, blackish brown with paler elongate scales on end segments and a reddish fulvous scale tuft at end of abdomen. Abdomen venter blackish brown outlined laterally with reddish fulvous with elongate blackish brown scales on end segments and edged in fulvous scales on A7 and A8; lateral line reddish fulvous outlined in blackish brown with elongated reddish fulvous scales at end of segments; reddish fulvous setal hair tuft at end of abdomen.

Forewing, dorsal ground color, blackish-brown with purplish cast due to azure/cobalt blue scales, especially in cell and extending to lateral margin; a faint indication of a diagonal pale yellow to cream subapical band. Ventral surface, ground color similar. Forewing with dull reddish fulvous at base and broken cream diagonal subapical band more pronounced; erect, slightly enlarged azure/cobalt blue scales in cell proximad, extending across wing to Cu_2-1A and then posteriad to anal margin.

Hindwing devoid of markings or with a faint indication of cream spots in an extradiscal spotband from Cu_2-1A toward anal margin; erect, slightly enlarged iridescent azure/cobalt blue scales in cell proximad and extending along $Sc+R_1$ and $Rs-M_1$ usually into accessory cell and along M_3. A reduced blackish brown setal patch in 1A-2A toward anal margin. Fringes, forewing with cream along the lateral margin to around anal angle, shading to pale brown tipped in cream and paler gray brown along anal angle. Hindwing, pale brown along the costal margin shading to cream at $Sc+R_1$ to around anal angle with paler gray brown tipped in cream along anal margin.

Variation of males: There are 15 males similar in basic coloration and ground color to the holotype. However, there are a few differences in a number of features. Some specimens have markings on the dorsal forewing enlarged (Figs. 8, 9) with less overscaling. The coloration of the hindwing disc with fulvous reduced and the extradiscal spotband distinct. On the ventral forewing, the fulvous suffusion on the posterior markings (M_3-Cu_{1a} to anal margin) may be reduced or expanded into M_1-M_2 (Fig. 12). On the dorsal hindwing, there is more variation in the development of the black overscaling on $Rs-M_1$. This is somewhat thickened with the black overscaling extending posteriad into the secondary accessory cell (Fig. 10). The black to blackish brown distal third of the hindwing near $Sc+R_1$ and $Rs-M_1$ is variable and may be black to blackish brown admixed sparsely with pale yellow (see figs 8-12). The pale yellow spot on the extradiscal spotband in 1A-2A may be large (Figs. 9, 11) or reduced (Figs. 7, 8, 12). The most variable character is the coloration of the abdomen. On A1 and A2, the dorsal abdomen may be paler yellow admixed with fulvous. On the ventral surface, the brownish black patches overscaled with pale yellow may vary in width and the amount of pale yellow overscaling. There may be a single brown patch on A1 shading to fulvous with enlarged pale yellow scales on end segments and occasionally with a dark brown band on A7. In other specimens, A1 may be overscaled with pale yellow shading to fulvous with enlarged yellow scales on end of segments or just fulvous.

Two males (Fig. 18) are melanic with dorsal and ventral ground color blackish brown. On the dorsal forewing, pale yellow markings are overscaled with blackish brown scales. The pale yellow marking on forewing near end cell is reduced, especially near costal margin. The proximal pale yellow patch in M_3-Cu_{1a} and 2A-3A may be faint or absent. The ventral surface is similar to above but the markings are more distinct. The carmine red along proximal costal margin is reduced and duller. The pale yellow bands near end cell and at subapex are not overscaled with black except near costal margin. The markings posterior to cell (M_3-Cu_{1a} to anal margin) are reduced, somewhat diffused, and with a faint hint of fulvous. The secondary postmedian pale yellow markings in Cu_2-1A shading to yellow to the anal margin are distinct. On the dorsal hindwing, there is a faint indication of lighter coloration along costal margin, and the disc is paler and with the darker overscaling evident along veins $Rs-M_1$. The normal position of the extradiscal spotband is darker, and the pale yellow submarginal band is reduced. The ventral hindwing is similar to above, but with pale yellow extradiscal and submarginal spotbands slightly reduced from holotype. The dorsal abdominal color is blackish brown with a reddish fulvous setal tuft at end of abdomen. On the ventral abdomen, A1 and A2 are brownish black. On A3-A6, the anterior segments are dark brown, overscaled with pale yellow along the midline, with pale yellow scales at end of segments shading to fulvous on A7 and A8. There is a reddish fulvous setal tuft at end of abdomen with the lateral pleural area fulvous.



Figures 6-13. *Zegara polymorpha*: **6)** holotype ♂, dorsal view; **7)** holotype ♂, ventral view; **8-12)** paratype males [MGCL] (dorsal surface, left, ventral surface, right; **13)** female [MB] (dorsal surface, left, ventral surface, right).

Figures 14-21. *Zegara polymorpha*, dark forms**: 14)** female, dorsal view; **15)**, same as 14, ventral view [MB]; **16)** male, dorsal view, left, ventral view right [MB]; **17)** paratype male. (dorsal surface, left, ventral surface, right); [MGCL]; **18)** paratype male [MJS] dorsal surface, left, ventral surface, right); **19)** paratype female (dorsal surface, left, ventral surface, right) [MJS]; **20-21)** paratype females (dorsal surface, left, ventral surface, right) [MGCL].

Two other males (FWL= 29.8 mm; 31mm) (Fig. 17) are similar to the previous male but reduced in size. The dorsal abdominal color is black with a fulvous setal tuft posteriad. The venter is reddish fulvous with black on end segments on A2 and A7.

Variation of females: There are two specimens (Figs. 14-16) that are similar to the typical female but with carmine red submarginal spots on the hindwing. In one (Figs. 14, 15), these markings are asymmetrical with three carmine red submarginal markings on the dorsal right hindwing with the expression of this character similar below but with only a faint indication of the submarginal marking on the left hindwing. In another specimen (Fig. 16), the red submarginal markings are similar on both surfaces of the hindwing.

Two female specimens are similar to the typical male (Fig. 13). The dorsal forewing ground color is blackish brown with a faint indication of cream near end of the cell, subapical diagonal cream band with veins darkened, and faint, postmedian, and elongated dash in Cu_2-1A. On the forewing ventral surface, the ground color is blackish brown overscaled with dull carmine red along base of costa. The cream markings are as above but enlarged, especially on subapical band and without the veins darkened. The diagonal orange fulvous marking near the end of cell in M_3-Cu_{1a} is reduced. The two broken orange fulvous spots across Cu_2-1A extend proximad to anal margin. There is a pale yellow elongate spot in the postmedial area of Cu_2-1A with cream along anal margin. On the dorsal hindwing, the ground color is blackish brown to black with the pale yellow areas normally observed along the costal margin lighter. The disc with pale yellow is heavily overscaled with fulvous, extends to anal margin, and is lighter distad. The extradiscal band area is darkened heavily. The elongate fulvous spots in the submarginal band extend from M_3 to Cu_2-1A. On the hindwing, the ventral surface is as above but with pale yellow areas along the costa overscaled heavily with fulvous. Vein Rs-M_1 is heavily overscaled with blackish brown. There may be a faint indication of an extradiscal spot in 1A-2A. Fringes above are brown on both wings, admixed with cream near the anal angle, and then dark brown along anal margin. Below, the fringes are gray brown admixed with cream along lateral margin, lighter near anal angle, shading to dark brown along anal margin.

The dorsal abdomen is reddish fulvous on A1, shading to blackish brown with reddish fulvous at end of segments, and shading to dull reddish fulvous on end of abdomen. On the ventral surface, reddish fulvous is present on A1, with blackish brown end segments along midline, and reddish fulvous setal tuft at end of abdomen.

Male Genitalia (Fig 22): Uncus subdivided with numerous setae and two-thirds as wide as tegumen; uncus, tegumen and especially the gnathos heavily sclerotized. Valvae with numerous setae and a few external, elongate, spatulate scales distad along the costal margin. There are two lighter sclerotized areas on the valva, one near the ampulla and the second dorsal to the mid sacculus. Juxta moderately sclerotized. Saccus divided and not as robust, more chacteristic of the Gazerini. Membranous area on the recurved portion of penis markedly reduced and with spinose process present on the dorsal phallobase. Aedeagus with cornuti absent.

Female Genitalia: Dorsal view (Fig. 23a). The ovipositor is heavily sclerotized, v-shaped anteriorly and with an expandable membranous area between sclerotized anterior apophysis. There are numerous setae present on posteriolateral margins of ovipositor. Papillae anales are lightly sclerotized and heavily setose. Ventral view (Fig. 23b) with a rounded, moderately sclerotized v-shaped marking on posterior margin of the sterigma and with ostium bursae membranous and lightly sclerotized. Antrum is moderately

sclerotized with bulla seminalis semi-membranous and opaque. Ductus bursae is slightly coiled and opaque. Corpus bursae is membranous; with signa present. Anterior apophysis is more than two-thirds as long as posterior apophysis.

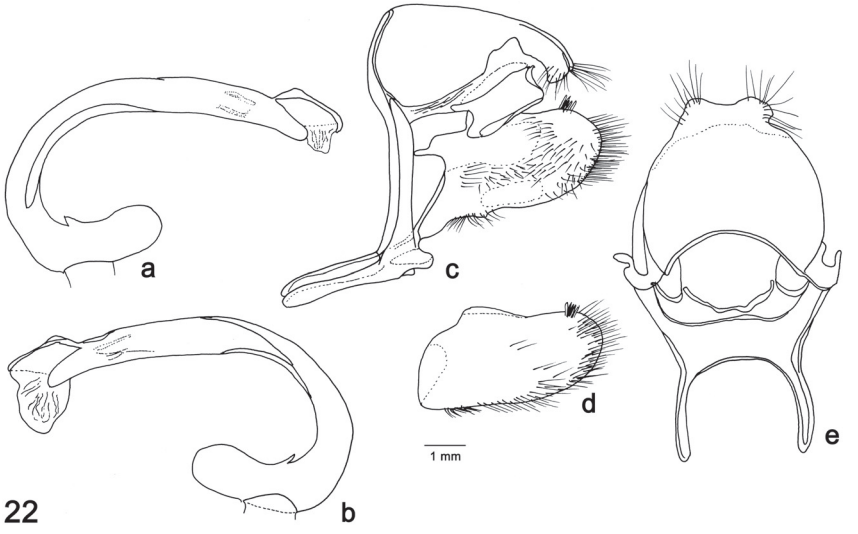


Figure 22. *Zegara polymorpha*, male genitalia: **a)** penis, dextral view **b)** penis, sinstral view; **c)** lateral view of uncus, tegumen, vinculum, saccus, and internal view of right valva; **d)** external view of left valva; **e)** dorsal view of uncus, tegumen, and saccus.

Types. Holotype ♂, FWL= 39.0; COLOMBIA: BOYACA/Otanche; 700-1000m/vi.08. Paratypes same locality as the Holotype: 9♂, 4♀, same data as Holotype; 4♂, 1♀, x.07; 1♂, xii.07; 1♀, ii.08. FWL ♂ Paratypes range from 35.8 - 44.8 mm for an average 40.8 mm; FWL ♀ paratypes 36.8 - 43.4 mm for an average of 41.7 mm.

The Holotype ♂, 17♂ and 3♀ paratypes are deposited in collections of the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL. Three ♂ and 2♀ paratypes are deposited in the collection of Dr. Mark J. Simon. Another 5♂ and 4♀ Paratypes are deposited in the collection of Mr. Michael Büche, Tingo Maria, Peru.

Etymology. The specific epithet, *polymorpha*, is derived from the distinctive forms evident in both sexes found thus far in this species.

Discussion. The general wing coloration and patterns do indicate that *Zegara polymorpha* and *Castnia fernandezi* are closely aligned. The forewing dorsal and ventral patterns and coloration are especially noteworthy in this regard. The ground color of *Z. polymorpha* is black to blackish brown in the cell and somewhat paler at apex and along the lateral margin. The pale yellow bands near the end of forewing cell and at the subapex are overscaled with pale brown scales, and these markings are brighter in *C. fernandezi*. The posterior sinuate band in *C. fernandezi* arises from the anal margin approximately one-fourth the distance from the base and recurves anteriad and then back toward the anal angle. This latter band is not contiguous nor sinuate but more jagged and

broken in *Z. polymorpha* and extends toward the base in 2A-3A. It does not recurve toward the anal angle. A proximal dorsal pale yellow scale patch is present on the dorsal forewing in 2A-3A. There is an indication of a submarginal spotband extending from M_2-M_3 toward the anal angle on the dorsal forewing, especially in the female of *C. fernandezi* (Fig. 24) but absent in *Z. polymorpha*. The forewing below is distinct in *Z. polymorpha* with the markings as above. The base of the costal margin is outlined in carmine red on all specimens examined of *Z. polymorpha* and absent in *C. fernandezi* (Fig. 26). The posterior band on the forewing of *Z. polymorpha* is fulvous in M_3-Cu_{1a} to Cu_2-1A and shades to pale yellow toward the anal margin. In the holotype of *C. fernandezi*, this marking is darker fulvous while in the female of *C. fernandezi,* it is pale yellow edged with fulvous along the medial veins. The fringes in *C. fernandezi* are dark brown as opposed to a combination of pale brown to gray brown with cream at the anal angle in *Z. polymorpha*.

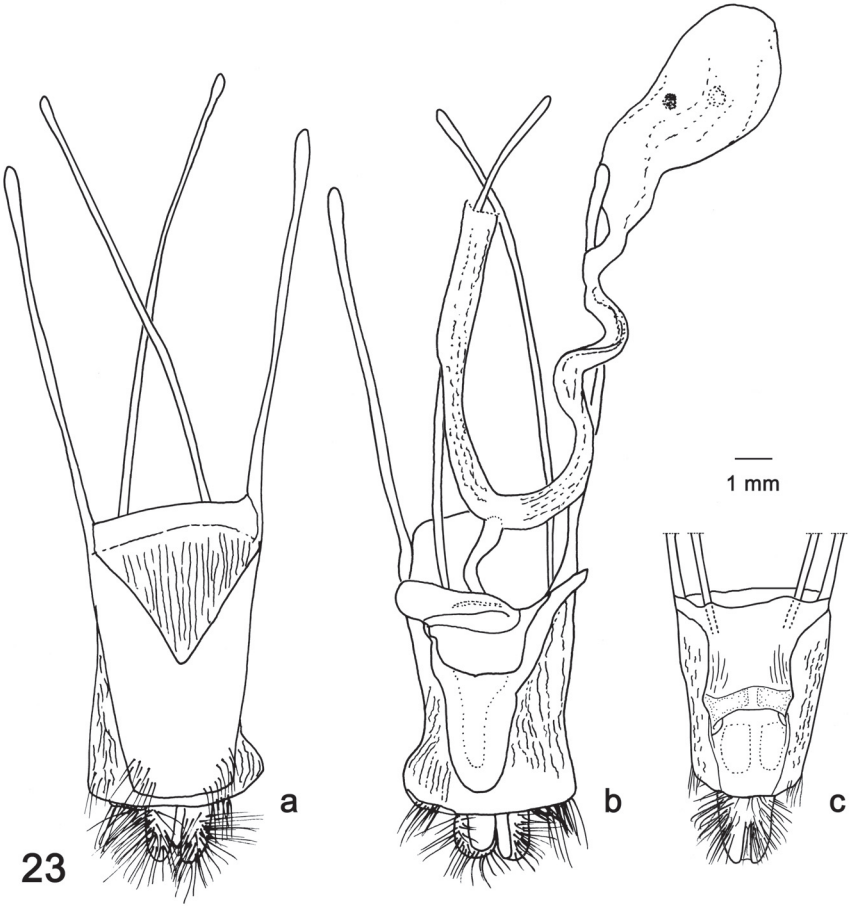


Figure 23. Female genitalia of *Zegara*: **a)** *Z. polymorpha*, dorsal view; **b)** *Z. polymorpha*, ventral view.; **c)** *Castnia fernandezi,* ventral view (in part).

The hindwing coloration and patterns are considerably different in the comparison of the typical male *Z. polymorpha* with *C. fernandezi*. The ground color is blackish brown to black along the costal margin and along the distal third of hindwing with reddish fulvous on the proximal two-thirds. Wing veins $Sc+R_1$ and $Rs-M_1$ are heavily outlined in black scales. This latter character is not evident in *C. fernandezi.* There is a faint pale yellow extradiscal band outlined heavily in black in Z. *polymorpha*. That band is considerably enlarged in *C. fernandezi* with the black to brown area of the hindwing occupying more than two-thirds of the wing. The submarginal spotband is fulvous to reddish fulvous often shading distad to pale yellow.

Figures 24-26. *Castnia fernandezi.* **24)** ♀, dorsal surface left, ventral surface right. **25)** ♂, dorsal surface left, ventral surface right. **26)** Holotype, ventral surface.

There are other features that separate these two species. The abdominal coloration is particularly noteworthy. In the holotype of *C. fernandezi*, the dorsal abdomen is dark brown and is dark brown overscaled and with fulvous admixed with pale yellow on A2-A6 extending along the midline on the ventral surface with A7 edged in pale yellow scales. In the typical male of *Z. polymorpha,* the dorsal abdomen is heavily overscaled with pale yellow admixed with fulvous on A1 and A2 shading to blackish brown sparsely overscaled with pale yellow. Ventrad the abdominal color is variable: fulvous with enlarged yellow scales at the end of the segments with a reddish fulvous setal tuft at end of the abdomen or blackish brown overscaled with pale yellow along the midline from A2-A7, often outlined with fulvous, or combinations of the above. The eye has a cream setal patch or lash (Ehrlich 1960, J. Y. Miller 1971) along the postoccipital area of the head. In addition, the tegula on the male of *Z. polymorpha* is outlined in pale yellow.

The male genitalia of *Zegara polymorpha* and *Castnia fernandezi* are similar. Two features, the sclerotized juxta and the presence of a spinose process on the phallobase were not mentioned in the original description nor illustrated (Gonzalez 1992). The female genitalia of *Z. polymorpha* (Figs. 23a, b) is distinctive: the dorsal view of the

sterigma is similar but the lighter proximal sclerotized area is enlarged. In the ventral view, the posterior broadly u-shaped sclerotized markings (Fig. 23b) are distinct when compared those of *C. fernandezi* (Fig. 23c). The corpus bursae is without signa in *C. fernandezi*.

With this comparative discussion, *Castnia fernandezi* is formally moved into the genus *Zegara* Oiticica and is listed as *Zegara fernandezi*, **new comb.**

There have been additional specimens of *Z. fernandezi* (Gonzalez, 1992) collected subsequent to the original description. Thus far, these include one melanic male (Fig. 25). It is important to note that this specimen varies similarly to those of *Z. polymorpha* in that the dorsal forewing markings are overscaled lightly with pale gray brown scales but with the sinuate marking evident. The extradiscal spotband of the hindwing below is present but reduced. *Zegara fernandezi* is most likely a polymorphic species as well. There are other members of *Zegara,* such as *Z. zagraea,* that are polymorphic with markedly different coloration. It is very important to examine and review other members within the mimic Castniinae in museum and other collections to actually determine the species currently aligned within various genera. It is also essential to continue faunal surveys for new material that may provide further clues to the higher classification of the Castniidae.

Zegara polymorpha is multivoltine with specimens collected within the last year in February, June, October, and December. The Otanche locality is quite interesting in the respect that it has produced polymorphic species in other groups, especially of *Heliconius erato* and *melpomene* (Nymphalidae). There are several potential *Heliconius* species as part of a potential mimicry complex, particularly *H. wallacei*. A few *Lycorea* (Danaidae) also have wing color and patterns similar to the males of this new species. In addition, there are a number of Arctiidae, including species within *Dysschema* and *Pericopis* that are potential members as well. Several *Dysschema* are dimorphic, and there are least 10 species of *Dysschema* originally described from Colombia alone (Watson and Goodger 1986). Of these, *D. unifascia, bivittata, formossimia,* and *joiceyi* are quite similar in terms of the male wing pattern and coloration. In the final analysis, it will be interesting to actually determine the other members of the mimicry complex for *Zegara polymorpha* in the Otanche, Colombia area and to see if other polymorphic populations of this new species are found elsewhere in the lowland forests in northern South America.

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