

REDISCOVERY OF THE TYPE OF *PAPILIO PHINEUS*
CRAMER AND ITS BEARING ON THE GENERA
PHEMIADES HÜBNER AND *PROPERTIUS*
EVANS (HESPERIIDAE)

RIENK DE JONG

Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands

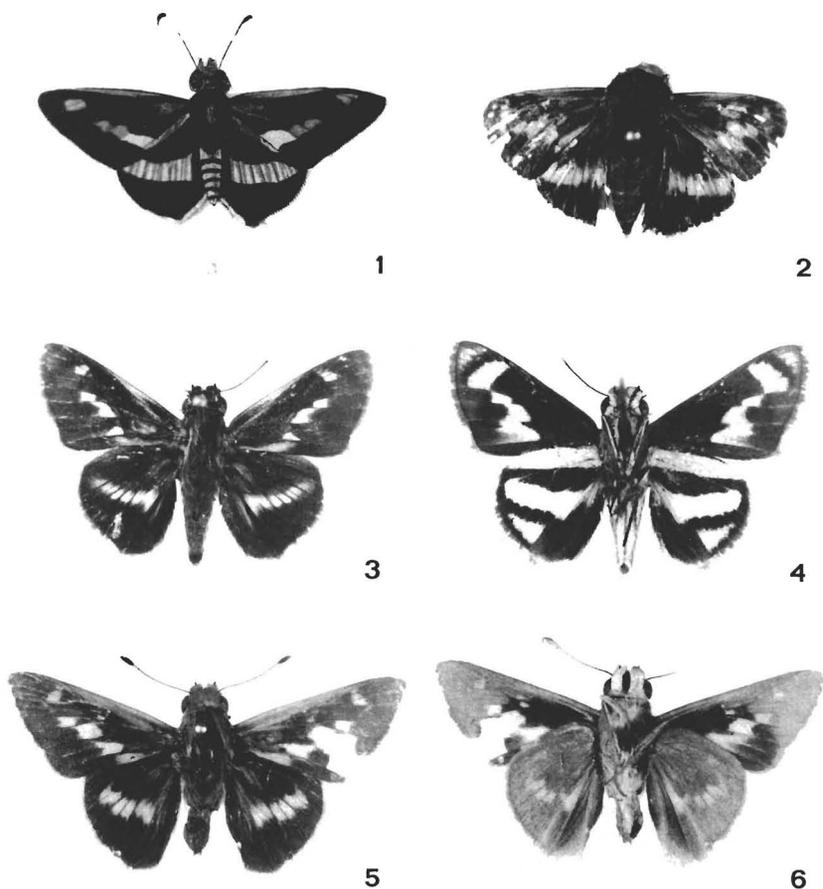
ABSTRACT. The type of *Papilio phineus* Cramer has been rediscovered. It is shown that Hübner's inclusion of the species in his genus *Pheмиades* and Scudder's designation of it as type-species of *Pheмиades* are based on misidentifications. Evans misidentified a yet undescribed species as *Papilio phineus* Cramer and erected the genus *Propertius* with type-species *Hesperia propertius* Fabricius, which is congeneric with the true *Papilio phineus* Cramer. The resulting nomenclatorial mess can be solved by designation of the yet undescribed *Pheмиades* species as type-species of *Pheмиades*. This species is named *Pheмиades pseudophineus* here. The inclusion of *Papilio phineus* Cramer in *Propertius* results in the sinking of *Pheмиades albistriga* Tessimann into synonymy with *Pheмиades phineus* (Cramer) on subjective grounds.

In a recent paper in this journal, Clench and Miller (1980:107) expressed the hope that more of Cramer's species could be determined soon. At least for one species their hope seems to have become a reality. Previously, the uncertainty as to the identity of the species was due to Cramer's poor descriptions and the unreliability of his data and figures. The confusion around the species being dealt with here has been caused by mistakes of subsequent authors, to put it kindly. The name *Papilio phineus* seems to have cast a spell on people somehow, as almost every subsequent author added some new confusion. Now we face a number of nomenclatorial problems that would have been quite unnecessary if only these authors had better perused the literature and better corrected their proof prints. It may be pardonable to some extent if the mainly English speaking authors who dealt with the species had problems in understanding relevant Dutch, French and German texts, but it is inexcusable that they apparently never had them properly translated. In the following I will indicate the pertinent errors in the literature and suggest some corrections, hoping that the name *Papilio phineus* will not bewitch me as well.

I am grateful to Mr. R. I. Vane-Wright of the British Museum (Natural History), London, for the opportunity of studying and describing relevant material.

Original Description and Type of *Papilio phineus* Cramer

The original (Dutch) description of *Papilio phineus* by Cramer (1777: 123; in the index on page 150, spelled "*phyneus*") reads as follows:



FIGS. 1-6. 1, *Papilio phineus* Cramer, after the original figure; 2, *Papilio phineus* Cramer, type, upper surface; 3-4, *Propertius propertius* (Fabricius), upper (3) and under surface (4); 5-6, *Phemiades pseudophineus* sp. n., holotype, upper (5) and under surface (6).

“Fig. E. *Phineus*. De gele tekening op de onderzyde der vleugelen is niet zo schoon van kleur dan van boven, doch voor 't overige niet onderscheiden. Zy word nevens de twee volgende in Surinamen gevonden.” **Translation:** Fig. E. *Phineus*. The yellow markings on the underside of the wings do not have the beautiful color of the upper-side, but for the rest are similar. It is found in Surinam, as are the next two species.

Together with the figure of the upperside (pl. 176, fig. E) (repro-

duced in Fig. 1), the description is clear enough. In the present context it is especially important to note the similarity of the markings on the upper and underside of the wings as stated by Cramer.

According to Cramer the specimen from which the illustration of *Papilio phineus* was made, was in the collection of E. F. Alberti, a Reverend of the Lutheran Community in Amsterdam. Reverend Alberti died in 1788, and his collection was apparently sold, possibly auctioned in parts as was usual in those days. One collector who was active in buying parts of other collections was J. Calkoen, who lived in Amsterdam and died in 1813 or 1814. His extensive collection of insects was in turn auctioned in parts in 1814. Most of it was bought by Reinwardt, Director of "s Lands Kabinet van Natuurlijke Historie" in Amsterdam. At the founding of the Rijksmuseum van Natuurlijke Historie, Leiden, in 1820 by fusion of the "Kabinet" and the very large private collection of Temminck, the Calkoen collection constituted the basis for the insect collection. This is how some of Cramer's type material came to be housed in the Rijksmuseum.

A badly worn male from the Calkoen collection (Fig. 2) corresponds well with Cramer's figure of *Papilio phineus* except that the head is missing. I have little doubt as to its being the actual type. The yellow markings of the upper side are repeated on the underside, those of the forewings being a little more extensive and a little paler than on the upper side, while the yellow band of the upper side of the hindwing has a pale, almost white color on the underside. There is another whitish band on the underside of the hindwing from the base to the end of vein 8. The presence of this band, although not mentioned by Cramer who often omitted details of markings, does not contradict the original description of *Papilio phineus*.

It must be stressed here that the rediscovery of the supposed type of Cramer is not essential for the following lines. Cramer's description alone is sufficient to point out the incorrect statements prevalent in the literature.

Original Description of *Phemiades* Hübner, 1819, and Selection of a Type-Species

In his well-known "Verzeichnis" Hübner (1819:112) erected the genus *Phemiades*, which he characterized as having "*Alle Flügel oben bandartig angelegt, unten nur zerstreut schwarz bezeichnet*" (all wings marked with bands on the upperside, underside only sparsely marked with black). The following species were listed by Hübner (with the references given by him):

1208. *Phemiades* Ephesus.

1209. *P. Edippus* Cram. 366. E.
1210. *P. Epictetus* Fabr. Ent. Hesp. 252. Hübn. Urb. vigil. Mys.
1211. *P. Phineus* Cram. 63. G.
1212. *P. Augias* Linn. Syst. Pap. 257.

Although the description of the genus is short, its meaning is clear. I like to draw special attention to the underside of the hindwing described as sparsely marked with black. If one still doubts the meaning, a glance on the underside of the species listed¹ makes it clear that Hübner meant a plain yellow or tawny underside with some black shading on the fore- and hindwing or the latter with scattered black dots. The only species that does not at all comply with the description is "*P. Phineus* Cramer," because the underside of the hindwing is quite different. There is one more peculiar aspect to the listing of this species by Hübner: the reference to the figure by Cramer does not match up. On plate 63G, Cramer (1775) does not depict *Papilio phineus*, but shows another South American skipper, *Papilio midas* Cramer. This species, currently placed in the genus *Bungalotis* Watson, does not fit the description of the genus *Pheмиades* either. In the male (figured by Cramer) the upper side of the wings does not have band-like markings (the underside comes closer to *Pheмиades*).

Whatever Hübner had before him when placing *Papilio phineus* Cramer in *Pheмиades*, it was certainly not Cramer's *Papilio phineus*. This would have been unimportant if Scudder (1875) had not selected this same species as the type-species of *Pheмиades*, apparently without checking Hübner's reference and without understanding Cramer's description. As a consequence, the type designation is based on a misidentification, and in accordance with Article 70 of the International Code of Zoological Nomenclature, the case must be referred to the Commission. The Commission can make a choice from one of three possibilities: designate as the type-species the nominal species actually involved, which was wrongly named in the type-designation (does not apply here as the identity of that species is doubtful); designate as the type-species the species named by the designator, regardless of the misidentification (does not seem to be a good choice either because of the discrepancy between Hübner's description of *Pheмиades* and the true *Papilio phineus* Cramer and this choice would necessitate more changes of names than the third pos-

¹ The species are currently known as follows: *P. Ephesus* (Hübner described this species only in 1823) = *Ampittia dioscorides* (Fabricius) (Oriental Region); *P. Edippus* Cramer = *Pardaleodes edippus* (Stoll) (Afrotropical Region), *P. Epictetus* Fabricius = *Anthophus epictetus* (Fabricius) (Neotropical Region), and *P. Augias* Linnaeus = *Telicota augias* (Linnaeus) (Oriental Region), see Evans (1937, 1949, 1955). For *P. Phineus* Cramer, see the main text.

sibility); or designate as the type-species a species chosen in conformity with the usage of the generic name prevailing at the moment.

The Genus *Pheimiades* Hübner in the Literature

All authors who have mentioned a type-species uncritically accepted Scudder's designation (Watson, 1893; Godman & Salvin, 1900; Hayward, 1950; Evans, 1955; Hemming, 1967). The following is a sequential history of the genus *Pheimiades*.

1. Plötz (1883:233) synonymized *Pheimiades* Hübner and *Hesperia* Auct. (which he made a kind of collective genus).

2. Apart from *Papilio phineus* Cramer, Watson (1893:104) placed *Hesperia Utha* Hewitson, 1868, in the genus. The latter is currently considered a junior synonym of *Pyrrhocalles antiqua* Herrich-Schäffer. From Watson's description of the genus it appears that he had only *P. antiqua* at his disposal, as the description does not fit *P. phineus*.

3. Godman and Salvin (1900) placed *Hesperia propertius* Fabricius, 1793, with *P. phineus* in the same genus, *Pheimiades*, and they even remarked that both may be the same species.

4. Schaus (1902) described *Pheimiades jamaicensis*, without indication why he placed it in the genus *Pheimiades*. Currently, this name is considered to belong to a subspecies of *Pyrrhocalles antiqua* (Evans, 1955) or to a closely related but separate species (Riley, 1975). Apparently, Schaus' allocation was based on Watson's concept of the genus (see above).

5. Mabille (1904:149) followed Watson (1893) in placing *Papilio phineus* Cramer and *Hesperia utha* Hewitson in this genus. He added *Hesperia propertius* Fabricius and listed *Hesperia memuca* Hewitson as a junior synonym of the latter (this will be dealt with later). Maybe, due to a practice of overlooking things, Mabille ignored the type-species designation by Scudder (again mentioned by Watson) and remarked in a footnote that *phineus* probably belonged to another genus.

6. Draudt (1923) did not mention the type-species. He listed the following species: *propertius* Fabricius (= *memuca* Hewitson), *jamaicensis* Schaus, *phineus* Cramer, *simulius* Druce, and *procax* sp. nov. The last two species were placed in a new genus, *Lindra*, by Evans (1955); for *jamaicensis*, see 4 above.

7. Tessmann (1928) described *Pheimiades albistriga*, which he compared with *propertius* and considered closely related to this species and *phineus*.

8. Hayward (1950) mentioned *propertius* and *phineus* as belonging to *Pheimiades*.

9. Evans (1955) listed in addition to *phineus* as type-species, *Augiades pohli* Bell, 1932, *Trioedusa milvius* Mabille, 1904, and *Phe-miades vergens* sp. nov. as the species of the genus *Phe-miades*. For *Hesperia propertius* Fabricius, mentioned repeatedly above, and *Phe-miades albistriga* Tessmann, Evans erected the genus *Propertius*.

Summarizing, it can be stated that, since Godman and Salvin (1900), there has been agreement that *Papilio phineus* Cramer and *Hesperia propertius* Fabricius are congeneric, except for Evans (1955). It is uncertain and seems unlikely that any of these authors ever checked and understood the original description by Cramer, but as will be shown in the next paragraph, the two species are really closely related.

Propertius Evans, 1955 Versus *Phe-miades* Hübner, 1819

The genus *Propertius* was erected by Evans (1955:303) for the species *Hesperia propertius* Fabricius, 1793 (type-species) and *Phe-miades albistriga* Tessmann, 1928. According to Evans' description the genera *Propertius* and *Phe-miades* differ in the following respects:

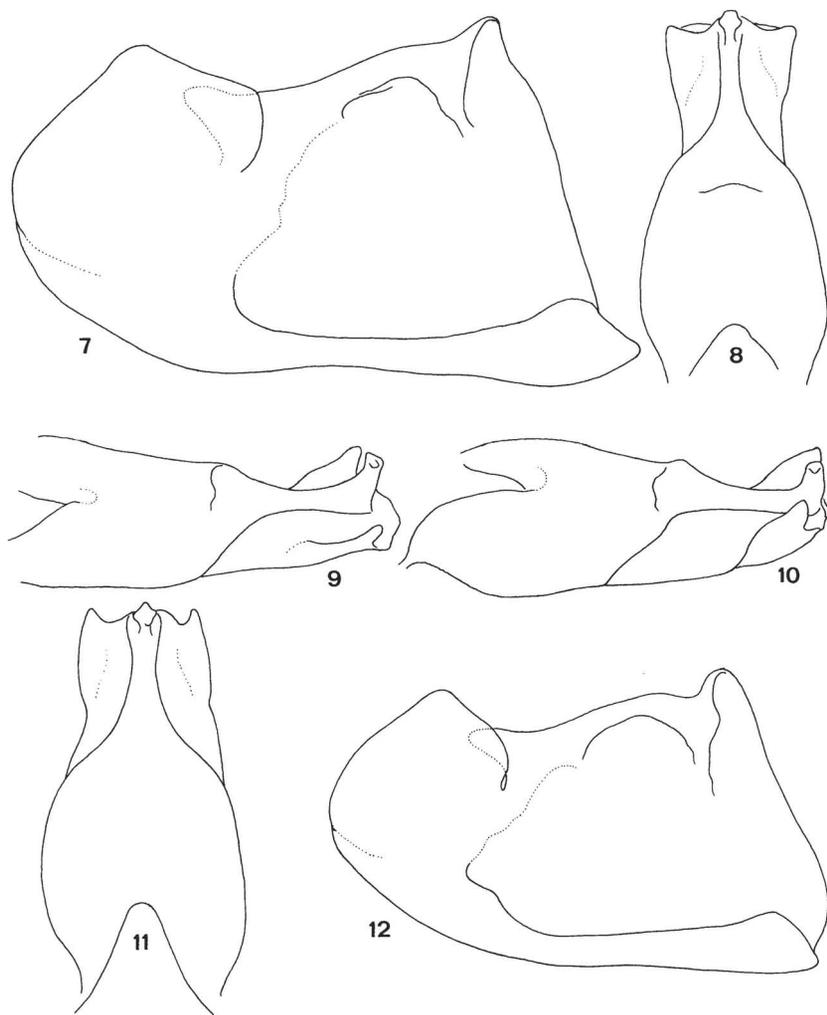
Propertius—"Antennal club long, slender = $\frac{1}{3}$ shaft. Unh with alternating dark red and pale yellow or white bands. Nudum $\frac{7}{8}$. F 17 mm."

Phe-miades—"Antennal club short, stout = $\frac{1}{4}$ shaft. Unh ochreous with faint yellow spots. Nudum $\frac{8}{9}$. F 17 mm."

In an additional description on p. 378, however, the antennal club of *Propertius* is said to be $\frac{1}{4}$ of the shaft (it is very difficult to tell where the shaft ends and the club begins). Further, in *Propertius* the male is stated to have an inconspicuous narrow, broken stigma, while in *Phe-miades* there are separated brands or a broad grey stigma flanked by a black patch on either side. I can add an obvious difference in the male genitalia: in *Propertius* the uncus (Figs. 8, 11) ends broadly with an upturned apex flanked by two similarly upturned, pointed, lateral processes (apparently a formation of the gnathos), while in *Phe-miades* (*sensu* Evans) the uncus tapers and ends simply with a small incision (Fig. 14). I entirely agree with Evans that the species placed by him in *Propertius* are generically distinct from those allocated by him to *Phe-miades*.

The true *Papilio phineus* Cramer agrees with the description of *Propertius*. It is not only very similar to the type-species, but it seems to be identical with the other species placed in the same genus by Evans, viz. *albistriga*. As I cannot find a difference between *albistriga* and *phineus*, the former is sunk as a junior subjective synonym of the latter (syn. nov.).

Externally (Figs. 1-4), the difference between *propertius* and *phi-*



FIGS. 7-12. Male genitalia of *Propertius* species. 7-9, *P. phineus* (Cramer), type. 7, inside of left valve; 8, dorsal view of uncus and tegumen; 9, left lateral view of uncus and tegumen. 10-12, *P. propertius* (Fabricius). 10, left lateral view of uncus and tegumen; 11, dorsal view of uncus and tegumen; 12, inside of left valve.

neus, apart from the color of palpi and head (cf. Evans, 1955:379), is mainly the color of the pale bands on the underside of the hindwing, being yellow in *propertius* and white in *phineus*. The male genitalia (Figs. 7-12) differ in the following respects: although the two species are of equal size, and tegumen and uncus are also equally large, the valve of *phineus* is $1\frac{1}{4}$ times as long as that of *propertius*, and the

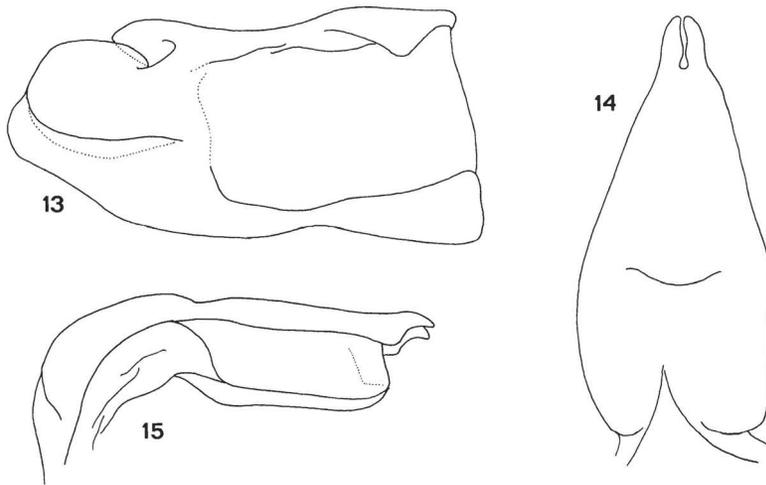
dorsal part of the cucullus of the former is more expanded, covering a larger part of the costa. For the rest the genitalia are very similar.

So, the differences between the two species are slight. Both taxa are largely allopatric and for that reason could possibly be subspecies of a single species, but as both have been recorded from Venezuela and E. Peru (Evans, 1955) and the exact distribution areas are poorly known, it seems advisable to consider them separate species for the moment.

As said above, designation of the true *Papilio phineus* Cramer as type-species of the genus *Pheimiades* would result in a genus concept that is widely different from what was meant by Hübner. Moreover, *Propertius* would become a junior synonym of *Pheimiades* as *phineus* and *propertius* are certainly congeneric, and *Pheimiades* (*sensu* Evans) would be in need of a new name. Such an action would create more instability than the designation of one of the species of *Pheimiades* (*sensu* Evans) as type-species of *Pheimiades* Hübner. For this choice it must also be kept in mind that Evans' work is far more authoritative than any of the other works mentioned. Finally, Evans' concept of *Pheimiades* is not at variance with Hübner's. The only nomenclatorial change needed is a name for the species that Evans mistook for *Papilio phineus* Cramer, this new name being necessary anyway. I would propose to the Commission to select this new species as type-species of *Pheimiades*. According to Evans it virtually was the type-species, and it does not contradict Hübner's concept of the genus. It can be described as follows.

***Pheimiades pseudophineus*, new species**

External characters (Figs. 5–6). Length of forewing, ♂ 17.4–17.7 mm; ♀ 20.9 mm. **Male.** Upperside dark brown, orange-brown along costa of forewing up to apical spots. Forewing with yellow dash in basal half of space 1a, yellow spots in spaces 1b, 2 and 3, and orange spots in spaces 4, 5 (both very small and inconspicuous), 6–8 and two in cell (small and inconspicuous). Hindwing with a central row of yellow spots in spaces 1c–6, separated by dark brown veins. Fringes forewing dark brown, a shade lighter near tornus, hindwing yellow. On the forewing inconspicuous dark brown brands: a V-shaped brand at the base of space 2, a short brand just below it in space 1b, and a dot over vein 1 at the inner corner of the spot in space 1b. Underside forewing along costa and apical third, and all of hindwing with a peculiar brownish-ochreous color, rest of forewing dark brown; spots on underside as on upper side, less conspicuous because of the paler ground color. **Female.** As male, but on upper side, costa of forewing



FIGS. 13–15. Male genitalia of *Phemiades pseudophineus* sp. n., holotype. **13**, inside of left valve; **14**, dorsal view of uncus and tegumen; **15**, left lateral view of uncus and tegumen.

orange-brown only in basal half, spots in spaces 2, 3, 6, and 7 hyaline, spot in space 1b semihyaline, other spots very faint or absent. Underside yellow where the male is brownish-ochreous, spots on hindwing faint.

Male genitalia (Figs. 13–15). Uncus tapering, bifid at apex. Costa of valve slightly swollen and hollowed at apex where it meets the upper edge of the cucullus. Latter broad, gently curved, hollowed at inside forming a narrow longitudinal ledge.

Identification. The new species can be distinguished at a glance from *Propertius* species by the underside of the hindwing, compare Figs. 4 and 6. From the other *Phemiades* species it can be separated by the brand on the forewing consisting of three parts (in the other species it is single), and by the broad and gently curved cucullus.

Material examined. Holotype, ♂, Chapada (Brazil). Paratypes: 1 ♂, Chapada (Brazil); 1 ♀, Espirito Santo (Brazil). All types in British Museum (Nat. Hist.), London.

According to Evans (1955:380) there should be 2 ♂♂ and 2 ♀♀ in the British Museum (under the name of *phineus* Cramer), but Mr. R. I. Vane-Wright of the said museum doubted if there were ever any more specimens than the ones listed above. Evans himself apparently was not quite sure of the identity of the specimens, as he added a note to one specimen reading, “comes nearer *phineus* Cram. than any other known species.”

Classification, Distribution and Synonymy

The following classification is essentially that given by Evans (1955) with necessary nomenclatorial changes:

- Propertius* Evans, 1955:303. Type-species by original designation: *Hesperia propertius* Fabricius, 1793.
1. *Propertius propertius* (Fabricius). From Panama and Venezuela through Peru and Bolivia to Paraguay, S. Brazil and Argentine.
Hesperia propertius Fabricius, 1793:325 ("Indiis"); Hewitson (1869:70); Plötz (1882:452).
Phemiades propertius; Godman and Salvin (1900:529); Mabille (1904:149); Draudt (1923:956); Tessmann (1928:127); Hayward (1950:138).
Propertius propertius; Evans (1955:379).
Hesperia memuca Hewitson, 1868:37 (no locality stated), 1869:70 (synonymized his own species with *propertius*); Plötz (1882:452).
Pamphila theodora Ehrmann, 1907:319 (Venezuela), synonymized by Evans (1955).
 2. *Propertius phineus* (Cramer), comb. nov. Guyanas, Venezuela, Peru.
Papilio phineus Cramer, 1777:123 (in index on p. 150 spelled "*phyneus*") (Surinam); Fabricius (1781:132).
Hesperia phineus; Hewitson (1869:70); Hewitson's remark on the underside of the hindwing of Cramer's species is based on Cramer's fig. 176C that however represents *Papilio phyllus* Cramer as clearly stated by Cramer; Plötz (1883:225).
Phemiades phineus; Watson (1893:104); Godman and Salvin (1900:529); Mabille (1904:149); Draudt (1923:956); Tessmann (1928:127); Hayward (1950:138).
Mention of this combination by Hübner (1819:112), Scudder (1875:247), and Evans (1955:380) does not relate to this species.
Phemiades albistriga Tessmann, 1928:127 (Montealegre, Pachitea, E. Peru), syn. nov.
- Phemiades* Hübner, 1819:112. Designation of *Papilio phineus* Cramer as type-species by Scudder (1875:247) based on misidentification. New designation suggested to Commission: *Phemiades pseudophineus* sp. n. *Triodusa* Mabille, 1904:144. Type-species *Triodusa milvius* Mabille, sole species included. Synonymized by Evans (1955:379).
1. *Phemiades pseudophineus* sp. n. Chapada, Espirito Santo (Brazil).
Phemiades phineus; Evans (1955:380).
 2. *Phemiades pohli* (Bell). Ecuador, Brazil, Paraguay, Argentine.
Augiades pohli Bell, 1932:136 (Santa Catharina).
Ochlodes pohli; Hayward (1950:52).
Phemiades pohli; Evans (1955:380).
Ochlodes köhleri Hayward, 1937:94 (Argentine), synonymized by Hayward (1948:106).
Phemiades pohli cidra Evans, 1955:380 (Archidona, N.E. Ecuador).
 3. *Phemiades vergens* Evans, 1955:381 (Cosnipata, E. Peru).
 4. *Phemiades milvius* (Mabille). Peru, Br. Guyana, Brazil.
Triodusa milvius Mabille, 1904:145 (Brazil).
Phemiades milvius; Evans (1955:381).
Phemiades milvius milor Evans, 1955:381 (Yahuarmayo, Peru).

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