

A note on three species of *Taractrocera* Butler (Lepidoptera: Hesperiiidae)

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Three similar looking species of *Taractrocera*, generally known as *ziclea* Plötz, *archias* Felder and *alinaea* Plötz, are re-examined and existing confusion is clarified. As a consequence, the correct name for the first species is shown to be *T. luzonensis* (Staudinger), and for the last species *T. nigrolimbata* (Snellen). The name *Thymelicus ziclea* Plötz turned out to be a junior synonym of *Pamphila archias* Felder. Diagnostic characters are given to separate the three species, and the geographic variation is surveyed.

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Introduction

The genus *Taractrocera* Butler, 1870, comprises 14 small, rather similar looking species, distributed from Pakistan to Tasmania. The genus can be distinguished from other, related genera, by the antennal club, which is flattened to a hollow disc without apiculus or with a minute one consisting of a single segment. Although rather similar, most species can be separated by external characters without too much trouble. Three species, however, have been mixed up considerably. These species are at present known as *T. ziclea* (Plötz, 1884), *T. archias* (Felder, 1860) and *T. aliena* (Plötz, 1883) (see Evans, 1949). Together, they cover a wide distribution area, from Burma to the Lesser Sunda Islands, but it seems that nowhere more than two species occur sympatrically, with the possible exception of the Malay Peninsula. Each of the three species shows geographic variation and a number of subspecies are recognized.

The confusion is due to differences of opinion about which subspecies belongs to which species. Most confusion could have been avoided if the various authors had examined the type material. Some of the changes of opinion are shown in fig. 1. Below, a complete synonymy is given for the three species. As an aid in identification, diagnostic characters are added. With the help of these characters almost all material can be identified with certainty with the naked eye. As an extra aid differences are given in the male genitalia that can be seen at a magnification of 30-50 × after the tip of the abdomen has been cleared carefully.

In the short descriptions of the subspecies the distributions are roughly outlined and the collections from which I have examined material are indicated (for abbreviations, see Acknowledgements). This is not an exhaustive list but further data will probably rather fill in details than change the overall picture. Literature references have only been given in relation to distribution, if they provide important additional information not found in the material examined. Published figures have been identified as far as possible.

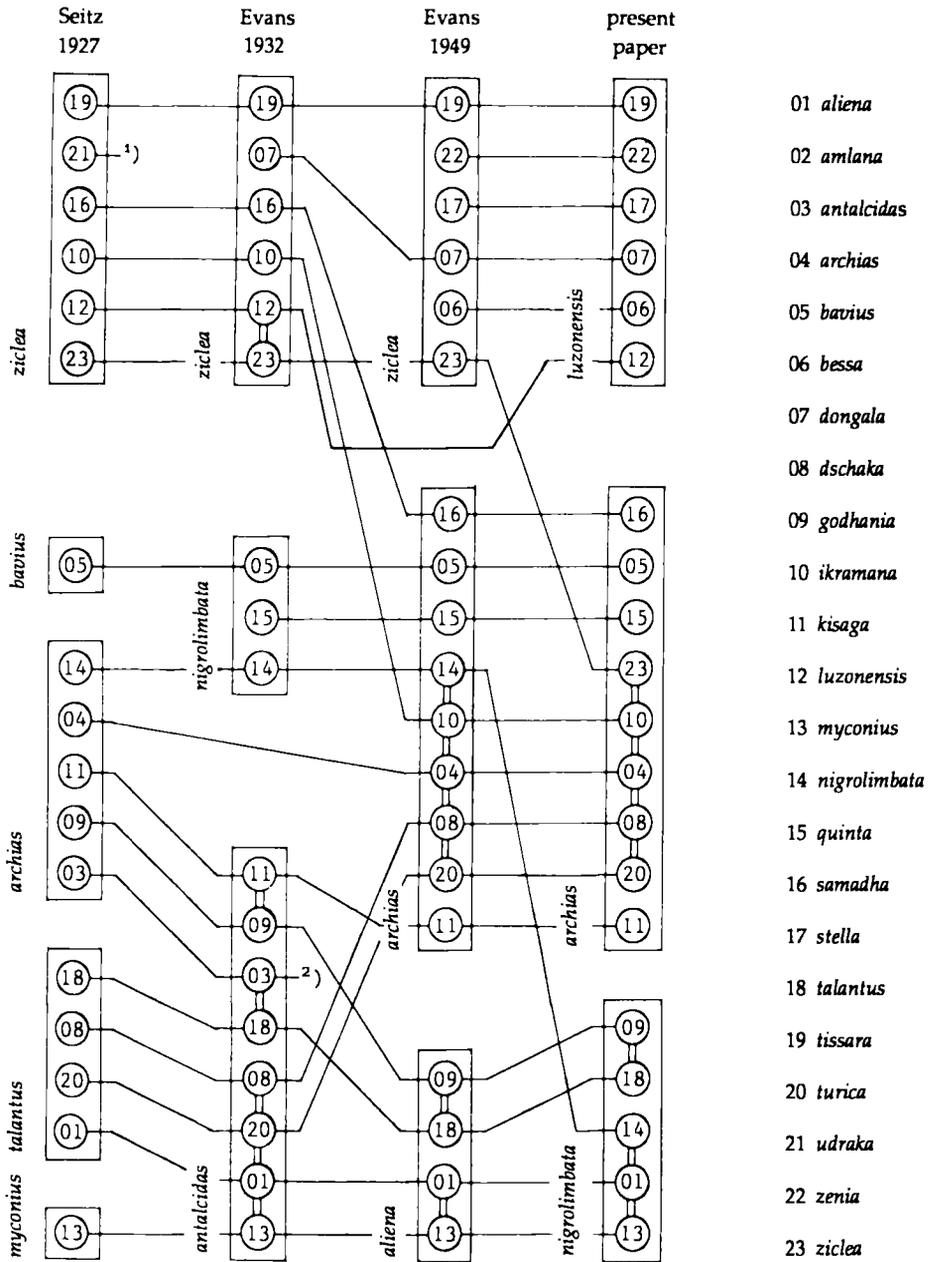


Fig. 1. Changing views of species limits and subspecific variation. All available names relating to the three *Taractrocera* species dealt with in the present paper are given. Each circle represents a name; circles connected by double lines are synonyms. Species limits are marked by rectangulars. 1) Synonym of *Ocybadistes ardea ardea* Bethune Baker, 1906; 2) synonym of *Fulda coroller* Boisduval, 1833.

Taractrocera luzonensis (Staudinger, 1889)

Pamphila luzonensis Staudinger, 1889: 145. Holotype: ♂, Luzon; ZMHB. The name was originally an unpublished name by Mabille. Staudinger published the name as a synonym of *Pamphila maesoides* Butler, 1879 (now considered a junior synonym of *Hesperia omaha* Edwards, 1863, at present placed in the genus *Potanthus*). Seitz (1927) treated it as an available name and adopted it to denote the Philippine subspecies of *Taractrocera ziclea*. In accordance with the provisions in the International Code of Zoological Nomenclature, edition 1985, art. 11e and 50g, the name is available with Staudinger being the author and 1889 the year of publication. Staudinger, and with him several students at the time, mixed up many of the small, orange-yellow spotted Hesperidae as is clear from his remark that he had the same species from Palawan, Luzon, Jolo, Sulawesi, Ambon, Borneo, Malaysia, Sri Lanka and Australia. Evans (1949) simply copied Staudinger's synonymization of *maesoides* and *luzonensis*. The well-preserved type of the latter, however, with the locality and name written in Staudinger's handwriting (according to Hannemann, in litt.), leaves no doubt about its separate identity.

Taractrocera ziclea tissara Fruhstorfer, 1910: 94. Holotype: ♂, W. Sumatra, Padang, Pandjang; BMNH.

Taractrocera ziclea dongala Evans, 1932: 398. Holotype: ♂, Sulawesi, Dongala; BMNH. Misspelled "dongola" in Evans (1949: 361).

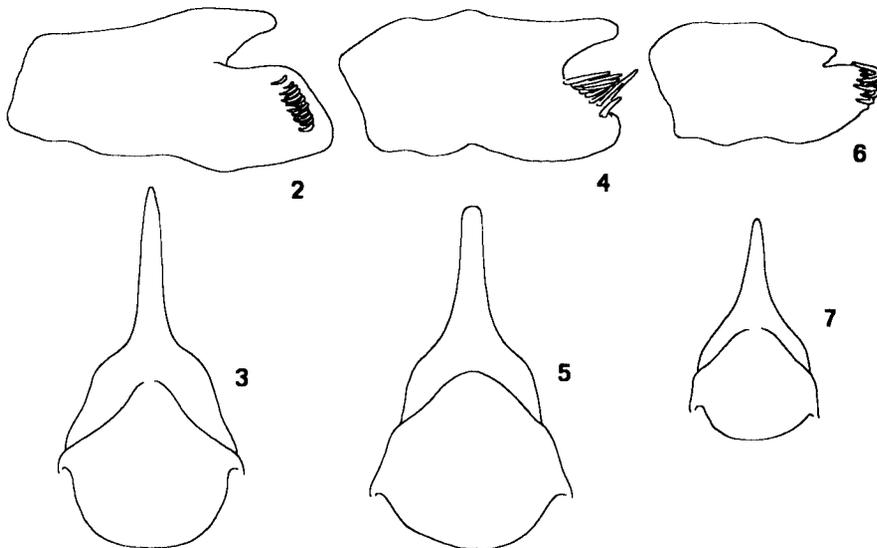
Taractrocera ziclea zenia Evans, 1934: 149. Holotype: ♂, Burma, Mergui; BMNH.

Taractrocera ziclea stella Evans, 1934: 149. Holotype: ♂, Borneo; BMNH.

Taractrocera ziclea besa Evans, 1949: 361. Holotype: ♂, Toekan Bessi; BMNH.

Taractrocera ziclea; auct.

Diagnosis (figs. 2, 3, 8, 9). — Length of forewing 10.1-12.1 mm. The species is easily distinguished from both *T. archias* and *T. nigrolimbata* by the presence of a yellow spot in space 7 on the underside of the hindwing (and usually also on the upperside) and the tendency of darkening of the veins on the underside of the hindwing more or less separating the median spots and continued to the termen.



Figs. 2-7. Male genitalia of *Taractrocera* species: inside of right valva and dorsal view of uncus and tegumen. 2, 3, *T. luzonensis dongala* Evans, N. Sulawesi; 4, 5, *T. archias archias* (Felder), Java; 6, 7, *T. nigrolimbata nigrolimbata* (Snellen), W Java.

In the male genitalia the valve is distinctive in having a large costal process and a truncate cucullus with the band of spines on the inside and not on the edge. The uncus is more slender than in the other two species, with a rather pointed apex.

Geographic variation.— Six subspecies can be distinguished, which differ in the development of the spots on the upperside of the forewing, as follows:

T. luzonensis zenia Evans, 1934. Spots in spaces 4 and 5 detached from those in spaces 1b-3 as well as from the apical spots; all markings narrow, rather pale yellow. Apparently rare. S. Burma (Mergui), Thailand (Chiang Mai, Peninsular Thailand), Malaysia (Penang, Kedah) (BMNH; Eliot, 1978, 1985). Figured by Eliot (1985), Evans (1949) and, Fleming (1975).

T. luzonensis tissara Fruhstorfer, 1910. Spots in spaces 4 and 5 conjoined to those in spaces 1b-3, but slightly out of line, closer to the termen; markings a deeper redder yellow. W. Sumatra and islands to the west (BMNH).

T. luzonensis stella Evans, 1934. As *T. l. tissara*, but markings yellower and slightly broader. Intermediate between *T. l. tissara* and the next subspecies. N. Borneo and off-shore islands (BMNH, RMNH). Evans (1949) mentioned "Sibuti Is.". This should possibly read "Sibutu Isl.", the westernmost island of the Sulu Archipelago, close to N. Borneo.

T. luzonensis luzonensis (Staudinger, 1889). Markings broader than in the foregoing subspecies, as broad as or broader than the dark border; spots in spaces 4 and 5 conjoined to those in spaces 1b-3, but slightly out of line. All over the Philippines (incl. Palawan) (BMNH, CT, NSF, RMNH). Figured in Seitz (1927) as "*Taractrocera ziclea luzonensis*" (pl. 170f) and as "*Taractrocera archias*" (pl. 170f, 170g); Seitz's figure of "*Taractrocera ziclea*" (pl. 170f) is *T. l. archias*.

This subspecies has been known as *T. ziclea ziclea* until now, but since the type of *T. ziclea* turned out to be conspecific with *T. archias* (and is moreover from Java), the name of the subspecies, and consequently the name of the species, must be changed into *T. l. luzonensis*, this being the oldest available name for the taxon.

T. luzonensis dongala Evans, 1932. Similar to *T. l. luzonensis*, but spots in spaces 1b to 5 in line. Sulawesi, Sula Islands (BMNH, RMNH, ZSM).

T. luzonensis bessa Evans, 1949. Spots much narrower than in *T. l. dongala*, more as in *tissara*, but more or less in a straight line as in *dongala*. Islands to the south and southeast of Sulawesi: Salajar, Tukangbesi, Tanahjampea (BMNH, RMNH). Probably also in Sulawesi; the southeastern arm of the island is practically unexplored lepidopterologically. A female from the area south of Palu in the RMNH is similar to *T. l. bessa*.

Taractrocera archias (Felder, 1860)

Pamphila archias Felder, 1860: 462. Holotype: ♂, Amboina (recte: Java, see Evans, 1949); BMNH.

Thymelicus ziclea Plötz, 1884: 289. Holotype: ♀, Java, Batavia; ZSM. In the original description the type locality was cited as "Philippinen". Apparently Plötz mixed up several taxa. There is no reason to mistrust the labels of the type in ZSM. The labels read as follows: "*Thymelicus ziclea* Plötz" (hand-written, blue-edged), "Batavia, C. Ribbe 82" (hand-written), "Original" (printed, violet), "type, *ziclea* Pl. Batavia" (hand-written, red-edged), "Holotypus, Zool. Staatssammlg. München" (printed, red). Seitz, who had the original plates of Plötz at his disposal (see Swinhoe, 1908) and copied a number of Plötz's figures in his 1927 publication, figured an unmistakable *T. archias* under the

name of *T. ziclea* (pl. 170f). Also Swinhoe (1908) had a confused notion of the taxa. He wrote under *T. ziclea* (p. 16): "I have this from the Philippines, and from Thayetmyo, Burma. Watson records it from several parts of Burma. Plötz's figure represents the insect exactly, except that it is rather larger, Watson's does not; therefore I refigure it." From this remark it is clear that he had two species mixed up, the supposed *T. ziclea* (recte: *luzonensis*) and *archias* (his specimen cited as coming from Thayetmyo ended up in the collection of Fruhstorfer who described it as "*Taractrocera ziclea samadha*"). Swinhoe's figure (pl. I [recte II], fig. 22) is apparently also a copy of a figure by Plötz. Since it shows a yellow spot in space 7 on the underside of the hindwing, *T. archias* and *T. nigrolimbata* do not come into consideration, leaving *T. luzonensis* as the possibly depicted species (confining ourselves to the three species), but among the long series of *T. luzonensis* from the Philippines and Sulawesi I have never come across a specimen with an underside similar to that shown in Swinhoe's figure.

Hesperia dschaka Plötz, 1885: 227. Holotype: ♂, Java, Batavia; ZSM. Misspelled "*dschalia*" by Mabilie (1904) (in the combination *Padraona dschalia*).

Taractrocera bavius Mabilie, 1891: clxxxiv. Timor. Depository of type specimens uncertain.

Taractrocera ziclea samadha Fruhstorfer, 1910: 94. Holotype: ♀, Burma, Thayetmyo; BMNH.

Taractrocera ziclea ikramana Fruhstorfer, 1910: 94. Holotype: ♀, Java; BMNH.

Taractrocera archias kisaga Fruhstorfer, 1910: 95. Holotype: ♂, Lombok; BMNH.

Taractrocera quinta Swinhoe, 1913: 122. Holotype: ♂, Burma, Ataran Valley; BMNH.

? *Taractrocera talantus turica* Seitz, 1927: 1076. Java. Type probably lost. According to Seitz this is the female of *T. nigrolimbata*. At the time, however, there was much confusion about the identity of a number of named forms, and since the type seems to be lost, synonymizing is a tricky matter. It is, however, not important, since the name is junior to both *archias* and *nigrolimbata*.

Taractrocera ziclea aurea Evans, 1932: 398. An unavailable name, being a manuscript name by Watson, published by Evans in synonymy of "*Taractrocera ziclea samadha*" and never adopted as the name of a taxon.

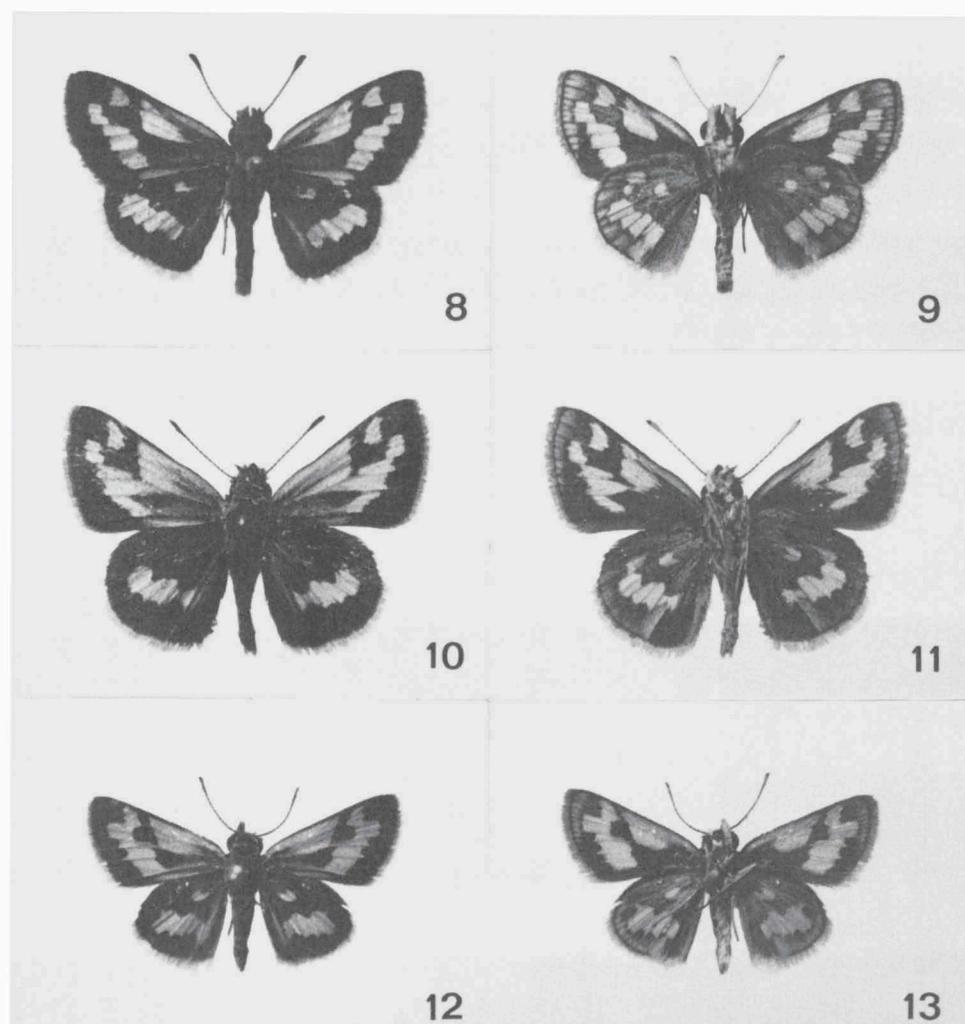
Diagnosis (figs. 4, 5, 10, 11). — Length of forewing 9.5–12.4 mm. Distinguished from *T. luzonensis* by the absence of a spot in space 7 of the hindwing, both on the upperside and on the underside. Very similar to *T. nigrolimbata*; larger on the average; forewing, apical spots (spots in spaces 6–8) detached from the spots in spaces 4 and 5 or conjoined to them, but at most slightly overlapping; spot in space 1bc of forewing oblique, at vein 2 closer to termen than at vein 1, usually distinctly narrower than high; underside of hindwing with veins not darkened where they cross the band, nor darker or paler than the ground colour towards termen; ground colour generally darker than in the other two species; outer edge of yellow band on upperside of hindwing tends to be convex, not concave as in *T. nigrolimbata*.

In the male genitalia, the valve is distinctive in having the costal process as long as the tapering cucullus, with spines on the dorsal edge; the uncus has parallel sides in dorsal view and a rounded apex.

Geographic variation. — There is a distinct geographic variation in the development of the markings on the upperside of the forewing. Five subspecies can be distinguished:

T. archias samadha Fruhstorfer, 1910. A distinctive subspecies with narrow spots, those in spaces 4 and 5 of the forewing well separated from the apical spots; base of space 2 dark, i.e. the median band well separated from the yellow area in the cell. Thailand, N Burma (BMNH; Eliot, 1985). Figured by Swinhoe (1913, pl. 785, figs. 2, 2a, 2b), Watson (1897, as *T. ziclea*).

T. archias quinta Swinhoe, 1913. In male, median band on forewing fused to yellow area in cell and space 1bc, leaving a small, dark, elongate spot in space 1bc close



Figs. 8-13. Upper (left) and undersides (right) of *Taractrocera* species. 8, 9, *T. luzonensis luzonensis* Staudinger, ♂, Philippines, Negros, Amlan; 10, 11, *T. archias archias* Felder, ♂, W Java, Djampang; 12, 13, *T. nigrolimbata nigrolimbata* (Snellen), ♂, lectotype, Java.

to vein 2; upperside of hindwing with conspicuous cell spot; reminds of *T. nigrolimbata talanta*, but spots in spaces 4 and 5 barely overlapping the apical spots. C and S Burma, Thailand, Vietnam, Malaysia (BMNH). Figured by Eliot (1978, 1985), Fleming (1975, fig. H198).

T. archias archias (Felder, 1860). Similar but dark area in space 1bc generally larger and sometimes base of space 2 dark, separating the median band from the cell as in the female; apical spots detached from spots in spaces 4 and 5, or just touching; upperside of hindwing without or with an inconspicuous cell spot. Banka, Java, Bali (BMNH, RMNH, ZSM). Figured by Piepers & Snellen (1910, fig. 67c only; figs. 67a and 67b are *T. nigrolimbata*).

T. archias kisaga Fruhstorfer, 1910. As preceding subspecies but in male apical

spots partly overlapping spots in spaces 4 and 5. Lesser Sunda Islands east to Alor (BMNH, RMNH).

T. archias bavius Mabilie, 1891. Spots narrower; median band well separated from the yellow area in cell and base of space 1bc and apical spots conjoined to the spots in spaces 4 and 5, but barely overlapping. Timor and nearby islands (BMNH, RMNH).

Taractrocera nigrolimbata (Snellen, 1876)

Thymelicus nigrolimbatus Snellen, 1876: 165, pl. 7 fig. 5. Lectotype (designated here): ♂, "Java, ♂, Piepers", "origineel der afb. Tijdschrift XIX"; RMNH. In the original description Snellen mentioned six specimens sent by Piepers and three specimens in his own collection. Of the nine syntypes I could find with certainty only two in the RMNH, viz., the male figured by Snellen (1876) and designated lectotype here, and the albino male mentioned by him (now labelled paralectotype). A number of specimens are old enough to come into consideration as further syntypes, but since they are not marked as such this remains uncertain.

Hesperia aliena Plötz, 1883: 228. Java. It is not certain if the type specimen(s) still exists. The only possible specimen available is a male in ZSM labelled "Batavia, C. Ribbe 82". The types of a number of other species described by Plötz were also collected by Ribbe.

Thymelicus myconius Plötz, 1884: 289. Holotype: ♂, Java. Depository of holotype unknown. Evans (1949) stated it to be a female, but in the original description only a male is mentioned.

Thymelicus talantus Plötz, 1885: 230. Holotype: ♂, S. Sulawesi, Bonthain; ZSM.

Taractrocera archias godhania Fruhstorfer, 1910: 95. Sumba. Depository of type specimen(s) unknown.

? *Taractrocera talantus turica* Seitz, 1927: 1076. See under synonymy of *T. archias*.

Diagnosis (figs. 6, 7, 12, 13). — Length of forewing 8.7-10.4 mm, on the average distinctly smaller than both *T. luzonensis* and *T. archias*. Distinguished from *T. luzonensis* by the absence of a spot in space 7 on the upperside and underside of the hindwing, and the overlap of the spots in spaces 4 and 5 with the apical spots on the upperside of the forewing. The latter character also separates the present species from *T. archias*, although in that species a certain amount of overlap may occur. A good character to separate *T. nigrolimbata* and *T. archias* is the median spot in space 1bc on the upperside of the forewing. This spot is almost parallel to the termen and as broad as or broader than high in *T. nigrolimbata*, whereas it is narrower and more oblique in *T. archias*. As a consequence, in those forms of the two species in which there is a dark spot basad of the median spot in space 1bc, this spot is more sharply pointed distad in *T. archias* than in *T. nigrolimbata*. On the underside of the hindwing the area distad of the yellow spots is darkened and the veins are more or less yellow here (suggesting that the spots are continued along the veins); in *T. luzonensis* the veins are darkened (also where they cross the yellow band), in *T. archias* the veins do not differ in colour either from the dark ground colour or from the yellow band where they cross it; on the upperside of the hindwing the outer edge of the band tends to be concave, not convex as in *T. archias*.

In the male genitalia *T. nigrolimbata* differs from the other two species by the very short costal process of the valve; in dorsal view the sides of the uncus are tapering rather than parallel.

Geographic variation. — The species varies in the extent of the yellow spots on the upperside of the forewing. Two subspecies are recognized:

T. nigrolimbata nigrolimbata (Snellen, 1876). On the upperside of the forewing the yellow band is not fused to the yellow area in the cell or the two are conjoined through the yellow base of space 2; there is a dark spot or area basad of the median spot in space 1bc. South Vietnam, Malaysia, Sumatra, Banka, W. and C. Java (BMNH, RMNH, ZSM). Figured by Piepers & Snellen (1910, as *T. archias*, figs. 67a and 67b only; fig. 67c is, indeed, a female of *T. archias*), Seitz (1927, pl. 170g, as *T. nigrolimbata*, bad copies of figures 67b and 67c of Piepers & Snellen and moreover interchanged, also as *T. myconius* and as *T. aliena*). Distant's (1882-1886, pl. xxxv fig. 16) figure of "*Telicota nigrolimbata*" is a clear *T. archias*. Fleming's (1975, fig. H199) figure of "*Taractrocera aliena*" is a *T. archias quinta*.

T. nigrolimbata talanta (Plötz, 1885). The yellow band on the upperside of the forewing fused with the yellow area in the cell and in the basal part of space 1bc, so that most of the forewing is yellow. E Java, Lesser Sunda Islands east to Sumba, S Sulawesi (BMNH, RMNH, ZSM). According to Evans (1949) figured by Seitz (1927) as "*Taractrocera archias antalcidas*" Felder & Felder, but the figure concerned (pl. 170g) is apparently a bad copy of the figure by Felder & Felder (1867, pl. 72 fig. 10) of their species "*Hesperia antalcidas*", a junior synonym of *Fulda coroller* Boisduval, 1833, an unrelated hesperiid species from Madagascar.

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