Notes on some skippers of the *Taractrocera*-group (Lepidoptera: Hesperiidae: Hesperiinae) from New Guinea

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New information is given on the distribution of some species of the genera *Banta*, *Mimene*, *Sabera* and *Pastria* (Hesperiidae: Hesperiinae) in New Guinea. Three species are described for the first time, viz., *Banta linnei*, *Mimene toxopei* and *Sabera metallica*.

Introduction

The *Taractrocera*-group (Hesperiidae: Hesperiinae) is characterized by a long thin tuft of hairs at the base of the costa of the hindwing fitting into a groove on the underside of the forewing under the radius, and by the strongly simplified male genitalia, which lack a gnathos, while the valvae are not subdivided into discrete parts. The group was erected by Evans (1949) to include fourteen genera. Evans (1949: 39) was aware of the anomalous position of *Prusiana* Evans, 1937, in this group, as "on genitalia, it belongs to the *Gegenes*-group, but seems more appropriately placed near *Telicota*." The only reason for this can have been superficial similarity. Maruyama (1991) rightly transferred it to the *Gegenes*-group (called the *Pelopidas*-group by him), limiting the *Taractrocera*-group to thirteen genera.

The *Taractrocera*-group is restricted to the Indo-Australian region, occurring from Pakistan in the west to Fiji, Samoa and Tasmania in the east and southeast. It is of considerable biogeographic interest, as it demonstrates repeated interchange between the Oriental and Australian regions and a strong development in the Papuan subregion (de Jong, 2001). As far as foodplants are known, the larvae are restricted to monocotyledonous plants (in accordance with the general food preference of the Hesperiinae), the smaller species (of genera like *Taractrocera* Butler, 1870, *Oriens* Evans, 1932, and *Potanthus* Scudder, 1872) feeding on a wide range of grasses (Poaceae), while larger species (of genera like *Cephrenes* Waterhouse & Lyell, 1914, *Telicota* Moore, 1881, and *Sabera* Swinhoe, 1908) tend to feed partly or entirely on larger monocots, particularly on palms (Arecaceae). This preference for widely available food sources may have contributed considerably to their success in colonizing remote areas. A similar situation is found in the *Pelopidas*-group, of which the larvae also feed predominantly on grasses, but this group has an even wider distribution, from S and W Africa, and islands in the Indian Ocean, through the Oriental and Australian regions far into the Pacific. On the other hand, other monocot-feeding hesperiine skippers belong to groups with a more restricted range. Apart from food preference, habitat preference will also be important in settling the limits of distribution, but no research has been done with regard to these skippers.

Six of the thirteen genera of the group are relatively profuse in species, with *Potanthus* (at least 35 species, de Jong & Treadaway, in press; Oriental region with one species extending to the Moluccas and possibly to New Guinea) and *Telicota* (at least 36 species, Parsons, 1999; India to New Guinea, the Bismarcks, the Solomons and Australia) the largest genera. The genera *Pastria* and *Banta* are the smallest, with two and three species, respectively; moreover, they are extremely rare, only few specimens being known so far. A preliminary phylogeny of the group was given by de Jong (2001).

Below, three new species are described and some new locality records are given that considerably extend the known range of the taxa. The material was collected by L.J. Toxopeus during the Third Archbold Expedition (1938-1939) to the Wilhelminatop (at present known as Gunung Trikora, in the Snow Mountains) in former Dutch New Guinea, of which he was the scientific leader. It is deposited in the collection of the National Museum of Natural History, Leiden. A description of the collecting localities was published by Toxopeus (1940). Recently the Indonesian part of New Guinea, formerly known as Irian Jaya, has been renamed the Papua province. Because of possible confusion with Papua New Guinea, the eastern part of the island, the Papua province will be called "western New Guinea" here.

Systematic part

Banta Evans, 1949

Type species *Banta banta* Evans, 1949.

The genus *Banta* was erected by Evans (1949) to accommodate three species from New Guinea. With the genera *Kobrona* Evans, 1934, *Sabera* Swinhoe, 1908, and *Mimene* Joicey & Talbot, 1917 (all restricted to the Papuan subregion), *Banta* shares antennae which are longer than half the costa, with as many segments of the nudum on the club as on the apiculus. Together they may form a monophyletic group which is sister to the speciose and widespread genus *Telicota* Moore, 1881 (de Jong, 2001). *Banta* differs from these genera by having a very wide and undivided uncus.

At the time of erecting the genus, Evans (1949) had only nine specimens at his disposal, and only three more specimens have been recorded since (Parsons, 1999). The type species is only known from Papua New Guinea, the other two species are from the western, Indonesian part of the island. Here we report on two more specimens from western New Guinea, one a new species, the other a new locality record.

Banta banta Evans, 1949

The species was described by Evans (1949: 415) from two males and one female from the St Joseph River (Hydrographer Mountains), and one female from Mambare River, both localities in the Northern Province of Papua New Guinea. Parsons (1999) added another locality in Papua New Guinea, Mt. Kaindi (Morobe Province) (three specimens). Thus, the species is known from the eastern part of Papua New Guinea only. Parsons noted that the specimens from Mt. Kaindi are very similar to the specimens from the type-locality, which is approximately 300 km away. Here we report on the eighth known specimen (male) of the species, collected far to the west (approxi-

mately 900 km), with the following label data: "Neth. Ind.-American; New Guinea Exped.; Sigi Camp 1350 m; 20.II.1939 L.J. Toxopeus" (printed). In spite of the long distance, the specimen is very similar to the figure in Parsons (1999: pl. 5 fig. 147-148) from the Angabunga River. Such a lack of variation suggests that the species is much more widespread than the small number of specimens in collections suggests.

Banta linnei spec. nov.
(figs 1-2, 7-8)

Type material.— Holotype: male, "Neth. Ind.-Amer.; New Guinea Exp.; Iebele Camp 1938; 2250 m 12.xi; L.J. Toxopeus leg." (printed); "Telicota ♂; fulvimargo; J.N. & Talb.; n. subsp." (handwritten by Toxopeus); "12-11-38; Iebele 2250 m.; Tox." (handwritten by Toxopeus).

Male (figs 7, 8).— Length of forewing 18.5 mm. As already suggested by Toxopeus (see the text of the handwritten label above), the new species is reminiscent of *B. fulvomargo* Joicey & Noakes, described from three males (according to Evans, 1949, two males and one female), collected near the Angi Lakes in the Vogelkop Peninsula. No further specimens have become known since then. In *B. fulvomargo* the upperside of the forewing is of a uniform dark chocolate brown colour, with a fulvous streak along the hind margin which extends slightly across vein 1 just distally of the stigma in space 1bc. In the new species the fulvous colour is much more extensive, filling most of space 1a and ⅔ of space 1bc, enclosing the lower part of the stigma which is conspicuous as a small black comma. Further spots are very weakly indicated by scattered fulvous scales from space 1bc to space 5. The underside is similar to *B. banta* and *B. fulvomargo*, but the brown colour on the hindwing is more extensive and the brown tornal area fills almost half of spaces 1a and 1b.

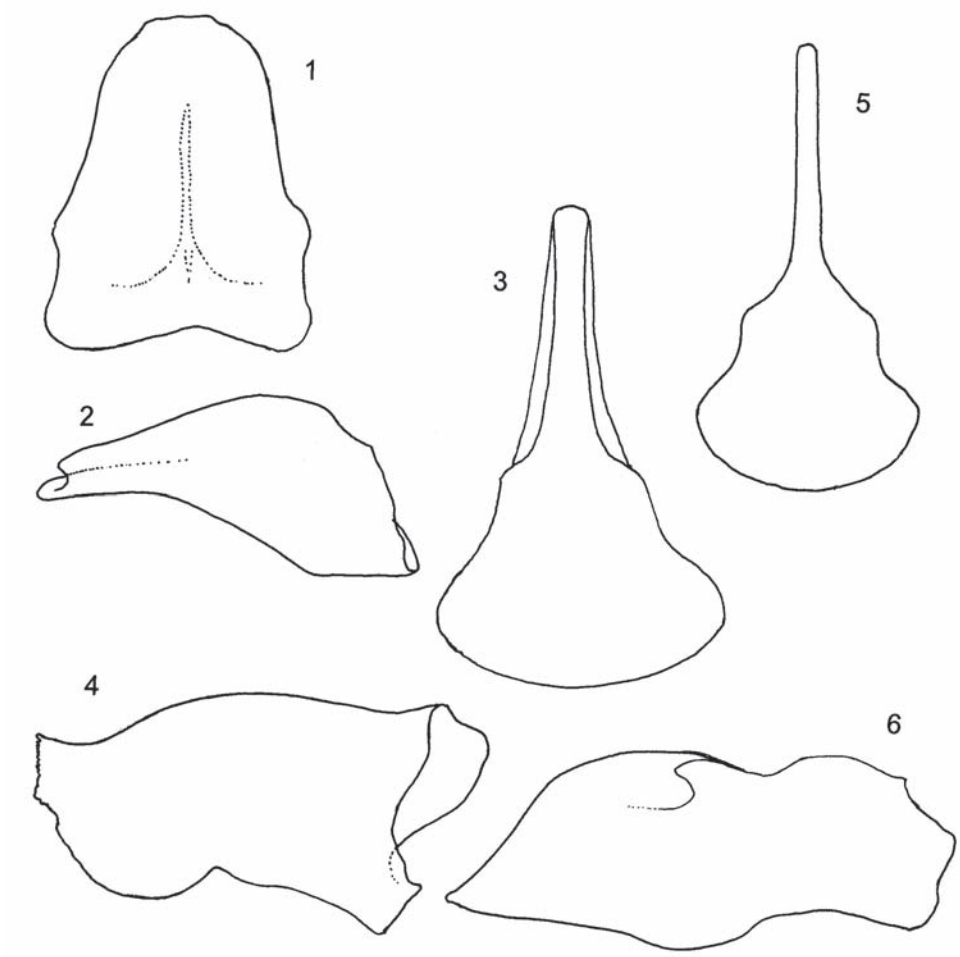
Genitalia.— The simply built valva (figs. 1, 2) is similar to *B. banta* and *B. fulvomargo*, including the gutter-like lengthwise indention of the outer side, but contrary to these species the ventral margin is smoothly curved and not angled at all.

Etymology.— Linnaeus described a limited number of butterflies, and in the 10th edition of Systema Naturae (Linnaeus, 1758) he described only nine species of Hesperiidae (of the circa 3600 species known to date). As a consequence, no Hesperiidae have been named after him so far. The new species is named after him on the occasion of the 250th anniversary of the publication of Systema Naturae (10th edition), the start of binominal nomenclature.

Mimene Joicey & Talbot, 1917

Type species *Mimas miltias* Kirsch, 1876.

With at least 22 species (Parsons, 1999), *Mimene* is the second-largest genus of the *Taractrocera*-group. It is found on mainland New Guinea and offshore islands, reaching as far as New Georgia in the Solomon Islands, and one species reaches Cape York Peninsula (Queensland, Australia; Braby, 2000). Evans (1949) called the genus "a very mixed lot in respect of facies", but the species with (traces of) tawny spots on the upperside are generally very similar. Parsons (1999) observes that the genus is usefully divided into five species groups on the basis of adult characters, but it remains unclear



Figs 1, 2. *Banta linnei* spec. nov., holotype. 1, dorsal view of uncus and tegument. 2, inside view of left valva.
Figs 3, 4. *Mimene toxopei* spec. nov., holotype. 3, dorsal view of uncus and tegument. 4, inside view of left valva.
Figs 5, 6. *Sabera metallica* spec. nov., holotype. 5, dorsal view of uncus and tegument. 6, inside view of left valva.

what these characters are. The taxon described below does not fit any of the described species. With Evans' (1949) key, the new species appears closest to *M. waigeuensis* Joicey & Talbot and M. *biakensis* Joicey & Talbot, with the stigma most similar to *M. biakensis*, but the cilia are whitish to dusky, suggesting a closer similarity to *M. albiclavata* (Butler), which, however, lacks secondary sexual characters. Moreover, these three species are lowland species (Parsons, 1999), while the new species was collected at 2250 m and higher up.

Mimene toxopei spec. nov.
(figs 3-4, 9-10)

Type material.— Holotype: male, "Neth. Ind.-Amer.; New Guinea Exp.; Iebele Camp 1938; 2250 m 1.xii; L.J. Toxopeus leg." (printed); "Iebele 2250 m; 1.xii.1938; Tox". Paratypes: 1 male, "Poniai 24 aug." (handwritten by Toxopeus; it was collected on 24.viii.1938 during a preliminary survey of the area later designated Mosboschkamp, 2800 m); 1 female, "22 aug." (further as the male paratype).

Male (figs. 9, 10).— Length of forewing 16.3 mm (holotype) and 16.5 mm (paratype). Upperside forewing dark brown with vague ochreous spots from hind margin to space 3 and at apex, and an almost invisible ochreous streak in the cell. Upperside hindwing band vestigial. Cilia of hindwing whitish to dusky. Underside forewing as upperside, but apical half reddish brown, obscuring spots. Underside hindwing reddish brown with band obsolete. Stigma on upperside forewing flanking the vague ochreous spots in spaces 1bc and 2 and running from vein 1 to vein 4, in space 1bc consisting of two parts, the lower part not completely in line with the upper part, in space 2 straight, with lower end proximal of upper end of part in space 1c, and upper end enlarged, in space 3 in continuation of the part space 2, triangular, more or less filling base of space 3.

Female.— Length of forewing 17.3 mm. Very similar to male on upper and undersides, but obviously without stigma.

Genitalia (figs. 3, 4).— Ventral edge of valva strongly indented, in distal part curving up in a semicircle to a truncate, finely serrate apical part which is slightly bent inwards. Uncus relatively narrow, gradually narrowing to the blunt tip.

Etymology.— Named after the great specialist on Southeast Asian butterflies, L.J. Toxopeus, who, in addition to his expertise on Lycaenidae, was developing a taste for Hesperiidae when he met his untimely end in a motor car accident in 1951, at the age of 56 (obituary by Diakonoff, 1951).

Sabera **Swinhoe, 1908**

Type species *Hesperia caesina* Hewitson, 1866.

The genus owes its name to the very long and thin, sabre-like uncus. With 13 species (Parsons, 1999), it occurs from the Moluccas to Australia and Fiji. On the basis of external characters, the genus readily falls into three groups: a, with white cilia on the hindwing and conspicuous white spots (one species, *S. caesina*); b, with white cilia on the hindwing and an unmarked upperside of the forewing (six species); c, with tawny cilia on the hindwing and with tawny markings (six species). In all species of the second group the male has a discal stigma. The new species described below, externally belonging to this second group, has only a trace of secondary sexual characters.

Sabera metallica spec. nov.
(figs 5-6, 11-12)

Type material.— Holotype.— male, "Neth. Ind.-American; New Guinea Exped.; Sigi Camp 1500 m; 20.ii.1939 L.J. Toxopeus" (printed); "Sigikamp 1500 m; 20.ii.1939; Tox" (handwritten by Toxopeus).

Male (figs 11, 12)—. Length of forewing 15.6 mm. Upperside unmarked dark brown, on forewing with strong bluish-violet gloss, cilia of hindwing snowy white. Underside

as upperside, bluish-violet gloss on forewing as well as on hindwing (does not show well in fig. 12). Secondary sexual characters: only a tiny dot of androconial scales over the middle of vein 1 on upperside forewing.

Genitalia (figs. 5, 6).— The valva is reminiscent of *S. kumpia* as illustrated by Evans (1949), with a pointed apex and, on the costa, a flap-like extension on the inner side (as in most *Sabera* species). Uncus in lateral view hardly broader than in dorsal view. In the male of *S. kumpia* collected nearby (see below), the valva does not end in a sharp point, but rather bluntly, and in lateral view the uncus is much broader, as described by Evans (1949).

Etymology.— The species is named after the gloss on upper and underside.

Discussion.— With Evans (1949) the specimen keys to *S. kumpia* Evans, 1949, except for the violet gloss, the even stronger reduction of androconial scales, and the size. In a nearby camp, the Beneden-Mistkamp (1400-1700 m) a male of a *Sabera* species was collected on 2 Febr. 1939 that agrees with the description of *S. kumpia*, except for the valva ending bluntly and the stigma being better developed than described by Evans. The specimen makes it clear that the newly described species is not *S. kumpia*, but it remains to be seen whether the specimen from the Beneden-Mistkamp is the nominotypical *S. kumpia*.

***Pastria* Evans, 1949**

Type species *Pastria pastria* Evans, 1949.

Evans (1949) erected the genus for two species characterized by a peculiar, very stout antennal club, obtusely angled at thickest part, and upper end of cell not acutely produced, with vein 5 opposite vein 8, and not opposite vein 9 as in *Telicota* and *Cephrenes*. The latter character is related to the broader wings, with the dorsum of the forewing longer than the termen (external margin). Evans (1949) noted that the male is without stigma or brands, but Parsons (1999) figures brands on the hindwing of the two species included by Evans (1949), as well as of a newly described species (*grinpela*).

Pastria pastria Evans, 1949
(figs 13-14)

When describing the genus, Evans (1949) had four specimens at his disposal, two males belonging to the previously described P. *albimedia* (Joicey & Talbot, 1817) (originally placed in *Acerbas*) from the Wandammen Mts in western New Guinea, and one male and one female of the newly described *P. pastria* from the Mambara River in Papua New Guinea. According to Parsons (1999), the female of the latter actually belongs to a new species, *P. grinpela*, which flies with *P. pastria* on Mt. Kaindi. No specimens of *P. pastria* have been recorded from western New Guinea, but there is one male (figs 13, 14)

Figs 7-16. Upperside (odd numbers) and underside (even numbers) of species of *Banta*, *Mimene*, *Sabera* and *Pastria*. 7, 8, *Banta linnei* spec. nov., holotype. 9, 10, *Mimene toxope*i spec. nov., holotype. 11, 12, *Sabera metallica* spec. nov., holotype. 13, 14, *Pastria pastria* Evans, 1949, W New Guinea, Prov. Papua, Snow Mountains, Lower Mist Camp, 1400-1550 m. 15, 16, *Pastria grinpela* Parsons, 1999, W New Guinea, Prov. Papua, Snow Mountains, Top Camp, 2100 m. For further details on localities, see text. ▶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in the collection of the Natural Museum of Natural History, Leiden, with the following label data: "Neth. Ind.-Amer.; New Guinea Exp.; Lower Mist Camd [misprint for Camp]; 14-1550 m, 30.i.1939; L.J. Toxopeus leg." (printed).

Parsons (1999) already suggested that the species is more widespread in the mountains of New Guinea than the small number of specimens (only nine males are known from Papua New Guinea) suggests, and might turn up in western New Guinea as well.

Pastria grinpela Parsons, 1999

The species is widespread throughout the Central Cordillera in Papua New Guinea, but has not yet been confirmed for western New Guinea. In the collection of the Natural Museum of Natural History, Leiden, there are two males with the following label data: "Neth. Ind.-Amer.; New Guinea Exped.; Top Camp 2100 m; 9.ii.1939; L.J. Toxopeus" (printed). Both specimens lack the antennae. The genitalia agree with the illustrations given by Parsons (1999). One specimen has been figured here (figs. 15, 16).

Parsons (1999) gave as average length of forewing of the male 16 mm for *P. pastria*, and 17 mm for *P. grinpela*. Our specimen of *P. pastria* has a forewing length of only 14.6 mm, the two males of *P. grinpela* both have a forewing length of 17.1 mm.

References

Braby, M.F., 2000. Butterflies of Australia. Their Identification, Biology and Distribution.— CSIRO Publishing, Collingwood, i-x + i-vii, 1-976 (in two volumes).

Diakonoff, A., 1951. Lambertus Johannes Toxopeus.— The Lepidopterists' News 5: 36.

de Jong, R., 2001. Faunal exchange between Asia and Australia in the Tertiary as evidenced by recent butterflies. In: I. Metcalfe, J.M.B. Smith, M. Morwood & I. Davidson (eds), Faunal and Floral Migrations and Evolution in SE Asia-Australasia.— Lisse: A.A. Balkema Publishers: 133-146.

de Jong, R. & C.G. Treadaway, in press. The Hesperiidae of the Philippines.— Butterflies of the World, Supplement 15.— Goecke & Evers, Keltern, 72 pp.

Evans, W.H., 1949. A catalogue of the Hesperiidae of Europe, Asia and Australia in the British Museum (Natural History).— Trustees of the British Museum, London, xix+502 pp.

Linnaeus, C., 1758. Systema Naturae, 10th edition.— Laurentii Salvii, Holmiae, 824 pp.

Maruyama, K., 1991. Hesperiidae. Butterflies of Borneo, vol. 2, no. 2.— Tobishima Corporation, Tokyo, xi+84 pp.

Parsons, M., 1999. The Butterflies of Papua New Guinea.— San Diego , Academic Press: i-xvi, 1-736.

Toxopeus, L.J., 1940. Nederlandsch-Indisch Amerikaansche Expeditie naar Nederlandsch Nieuw-Guinea (3e Archbold-Expeditie naar Nieuw-Guinea 1938-'39), Lijst van verzamelstations.— Treubia 17: 271-275. (On pages 277-279 there is an English translation of the Dutch text.)

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