On the identity of *Cethosia biblis sandakana* FRUHSTORFER 1899 described from North Borneo (Lepidoptera: Nymphalidae)

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Abstract: In this paper on North Bornean and Philippine representatives of the nymphalid species *Cethosia biblis* (Drury 1773) two of the described subspecies are dealt with: *Cethosia biblis sandakana* FRUHSTORFER 1899 and *Cethosia biblis barangingi* TSUKADA 1985. *C. b. sandakana* was described from Sandakan, North Borneo, and (probably erroneously) from Kinabalu; *C. b. barangingi* from the Sulu Archipelago. Both taxa have identically marked females of varied shades of green and — additionally — the males are also identical in their colour, pattern and genitalia. So in our opinion they represent one and the same subspecies with *barangingi* being a new synonym of *sandakana*. Thus the distribution of ssp. *sandakana* now includes the Sulu Archipelago, but it is not found in the Central Philippines as previously published as ssp. *sandakana*.

Zur Identität von *Cethosia biblis sandakana* FRUHSTORFER 1899 von Nordborneo (Lepidoptera: Nymphalidae)


Introduction

The species *Cethosia biblis* (Drury 1773) has a very wide distribution in a number of subspecies stretching from India, South China, former Indochina to Malaysia, Indonesia, the Philippines and on to the Moluccas and Ambon. These were divided by KÜPPERS (2006a: 6) into 5 complexes of which for this paper the Sunda and Philippine population complexes concern this project (Fig. 1). From North Borneo, FRUHSTORFER (1899) described *Cethosia biblis sandakana* listing his type series as originating from the Sandakan and Kinabalu areas with the♂ being similar to the Philippine *Cethosia eurymena* FELDER & FELDER 1867 (later a synonym of *Cethosia biblis insularis* FELDER & FELDER 1861) while the♀ had a light green base colour. In 1929 HALL published a further *Cethosia biblis* subspecies as *woolletti* (with a red ♀) as occurring over North Borneo including Sabah (Figs. 2, 3), thus giving 2 subspecies for Sabah. Later, TSUKADA (1985: 282) established *Cethosia biblis sandakana* as occurring in the Central Philippines and questioned whether it ever really occurred in North Borneo. However, he did illustrate a ♂ similar to *sandakana* from North Borneo dated 1933 but with a question mark. Interestingly, FRUHSTORFER in SEITZ (1912: 501) stated “sandakana has hitherto been found only in the most northerly portion of Borneo where it represents a purely Philippine element in the fauna of that island, being a relic from the time when Borneo was connected by land with Mindanao”.

Off the extreme western end of the Philippine Sulu Archipelago exists a group of islands which are located within Sabah and have been given the name Tun Sakaran Park. They are located offshore from the Sabah mainland town of Semporna. For this report these islands will be referred to as the “Semporna Offshore Islands”.

In 1998 and 2006 on the Semporna Offshore Islands, the 2 larger islands named Bod Gaya and Bohey Dulang, *Cethosia biblis* were collected which possessed a♂ similar to *Cethosia biblis insularis* and a green ♀. These Semporna Offshore Islands are situated approximately 160 km SSE from Sandakan, Sabah, and 70 km W from Sibutu Island belonging to the Philippine Sulu Archipelago. This *Cethosia biblis* from Bohey Dulang and Bod Gaya matches FRUHSTORFER’s description of his *Cethosia biblis sandakana*. Further, we can now clearly demonstrate that FRUHSTORFER’s subspecies *sandakana* from extreme NE Borneo not only occurs in Sabah, but is identical to the *Cethosia biblis* on the Philippine Sulu Archipelago described by TSUKADA (1985: 198) as subspecies *barangingi* which must now be considered a synonym of ssp. *sandakana*. We believe that TSUKADA’s placing of ssp. *sandakana* in the central Philippines is quite incorrect, nonetheless this subspecies does exist in the Philippines in the Sulu Archipelago.

Abbreviations used

CCGT Collection Colin G. TREADAWAY, Limbach-Wagenschwend; will be incorporated into Senckenberg-Museum, Lepidoptera collection.

CSFM Coll. Sabah Forestry Museum, Mt. Kinabalu Park HQ.

lfw. Length of forewing.

Notes on the taxon *Cethosia biblis sandakana*

1. Examples of *Cethosia biblis sandakana* are difficult to locate in European museums. Only a few ♂♀ are known with rather vague locations of capture. As stated by FRUHSTORFER (1899) in his original description of
ssp. sandakana, the ♂♂ are very similar to the ♂♂ of the Philippine *Cethosia euryzona* (= *C. biblis* ssp. insularis) (Figs. 4, 5). Based on the large collection of *Cethosia biblis* we have from many islands of the Philippines, we have noted a certain amount of variation in ♂♂ in specimens from the same islands. The Senckenberg-Museum in Frankfurt am Main possesses one ♂ with a label that reads only “sandakana Fruh.” The Natural History Museum, London, has 2 ♂♂, one listed as Sandakan, North Borneo, Honrath Collection, and the other listed as Marinduque, an island just south of Luzon, Philippines (information from P.R. Ackery). The Humboldt-Museum Berlin has two ♂♂, one with a label identifying it as a ♂ of Fruhstorfer’s *sandakana* type series, Sandakan, North Borneo (checked by W. A. Nässis). In the Leiden Museum no subspecies *sandakana* were located (information from R. de Jong).

2. Museums in Malaysia were checked for specimens of subspecies *sandakana*, specifically the university collections in Sarawak, Sabah and Kuala Lumpur (checked with F. Abang), without finding any ssp. *sandakana*. However, the Sabah Forestry Museum on Mt. Kinabalu possesses a fine series of ♂♂ and ♀♀, identified as *sandakana* from the Semporna Offshore Islands.

3. Fruhstorfer listed in his description of *Cethosia biblis* sandakana the collecting locations as being Sandakan and Kinabalu. It is possible that the Kinabalu specimen
was misidentified by Fruhstorfer. *Cethosia biblis woolletti* was not known at that time being first published in 1929. Certainly from the underside, with closed wings, if not set, it would look very similar to *Cethosia biblis sandakana*.

4. Over recent years, a very large number of *biblis* specimens have been collected in the central Philippines from which it could be clearly established that in this area, where Tsukada (1985) designated the *biblis* subspecies as *sandakana*, no green ♀♀ as described by Fruhstorfer have ever been collected.

5. In Otsuka’s 1988 book a *Cethosia biblis* ♂ and ♀ are illustrated which are clearly *Cethosia biblis woolletti*, not as listed in the text as *C. biblis sandakana*.

6. A collection of 136 butterflies covering 33 species was made on Bohey Dulang and Bod Gaya between 7.– 12. ix. 1998 and again from 14.–18. xii. 1998 by Maklarin Lakim and Sinail Dunsul from the Research and Education Division of Sabah Parks. A further expedition was made in vii. 2006. An article was published by Lakim et al. (2003) covering their expeditions. In their checklist of identified butterflies from the Semporna Offshore Islands of Bohey
Dulang and Bod Gaya they included rightfully *Cethosia biblis sandakana*. This identification was based on the green ♀♀ collected.

7. A careful comparison to our series of Philippine Sulu Archipelago *Cethosia biblis barangiingi* Tsukada 1985 clearly demonstrates that this subspecies is identical to Fruhstorfer’s subspecies *sandakana* (genitalia and markings); *barangiingi* must therefore be transferred into synonymy of *sandakana*. Thus, although subspecies *sandakana* does not occur in central Philippines as Tsukada (1985) stated, it can be commonly found on the Sulu Archipelago from Jolo to Sibutu as well as the Semporna Offshore Islands.

**Redescription of *Cethosia biblis sandakana***

**Fruhstorfer 1899**

loc. typ. restricted: [Borneo, Sabah], Sandakan (Figs. 8-11).

≡ *Cethosia biblis barangiingi* Tsukada 1985; loc. typ.: [Sulu Archipelago], Jolo Is., n. syn. (Figs. 12-15).

**Distribution:** Bohey Dulang and Bod Gaya Islands located ca. 160 km SSE of Sandakan, Sabah, Malaysia, and additionally the Philippine Sulu Archipelago from Jolo to Sibutu.

**Fwl. ♂:** 34–37 mm; ♀ 38–42 mm. For the ♂ upperside the forewing costa patch and the hindwing submarginal area is also similar to the ♀. The forewing has a similar white costa patch as the ♀. The ♀ hindwing upperside black submarginal area is also similar to the ♂, but the bands of dots and lines appear on varied shades of green background. Very occasionally ♀♀ occur with the green base colour replaced by brown.

**Acknowledgements**

We are most grateful to HJ Abdul Wahab B. Siman, The Manager, Kinabalu Park, Sabah, and Prof. Dr. Fatimah Abang, Faculty of Resource Science and Technology, Unimas, Kota Samarahan, Sarawak, for arranging the loan of 2 pairs of *Cethosia biblis* from Bohey Dulang Island which were among those located in the Mt. Kinabalu Forestry Museum. We also thank HJ Abdul Wahab B. Siman for allowing us to examine *Cethosia biblis* in the Mt. Kinabalu Forestry Museum. We further thank Prof. Abang for supplying us with information on *Cethosia biblis* held in Malaysian university museums. Additionally, we thank Dr. Wolfgang A. Nässig of the Senckenberg-Museum, Frankfurt am Main for giving us the opportunity to study the Senckenberg *Cethosia* material and also his assistance together with Dr. W. Mey, Humboldt-Museum Berlin, for providing us with photos of a type series ♀♀ of *C. biblis sandakana*. Thanks are also due to Prof. Dr. M. Page for taking photos of *Cethosia biblis woolleti*, both ♀♀ and ♂, in the Mt. Kinabalu Forestry Museum all collected in Sabah. We are grateful to Phil Ackery for giving us the opportunity to study *Cethosia biblis* in The Natural History Museum, London, and to Dr. R. de Jong for information concerning *biblis* in the Leiden Museum Naturalis.

**References**


Received: 12. xi. 2008