

***Bracca olafhenkeli* sp. nov., a new species of the Ennominae (Lepidoptera: Geometridae) from Sulawesi (Indonesia)**

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Abstract

Bracca olafhenkeli sp. nov. is described from the island of Sulawesi, Indonesia, to which it is considered endemic. Morphological characters such as the basic pattern and coloration as well as the genitalia clearly indicate that the species is a typical member of the genus *Bracca* Hübner, but large, white apical spots on the forewings and extremely broad, white marginal bands on the hindwings render it unmistakable among its congeners. The new species is abundant in montane areas of North, Central and South Sulawesi and seems to be restricted to primary forests. The biology is unknown.

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Keywords: Geometridae; Ennominae; New species; *Bracca olafhenkeli* sp. nov.; Sulawesi

Introduction

Species in *Bracca* Hübner, [1820] are distributed in the Oriental tropics; the geographic range of the genus extends from the extreme south of Thailand to tropical Australia. One to three species are known from peninsular Malaysia, Borneo, Sumatra, Java, Ceram, Ambon, Buru, Luzon, Mindanao and some other Philippine islands, five species inhabit Sulawesi, and 14 species New Guinea and the surrounding islands. Four species are recorded from NE Australia (McQuillan and Edwards 1996). Holloway (1984, 1991) published some preliminary observations on species of *Bracca* of the Tropical Pacific and later provided a full taxonomic account and cladistic treatment of this genus. He synonymized five genera (*Cosmethis* Hübner, *Duga* Walker, *Arycanda* Walker, *Panaethia* Guenée, *Tigridoptera*

Herrich-Schäffer) with *Bracca*. He also made the first mention of the new species described below (Holloway 1991; as *Bracca* sp. n. 14097). Holloway [1994] gave a detailed description of the generic characters and recorded three species from Borneo. Sommerer and Stüning (1997) described a conspicuously different Sumatran subspecies of *Bracca exul* Herrich-Schäffer, [1856] (the nominotypical subspecies is restricted to Java), and discussed the phenomenon of strikingly different island-races that has been found so explicit only in the genus *Bracca*. Parsons et al. (1999) listed a total of 26 species in the genus.

Taxonomic section

***Bracca* Hübner**

Facies features of the species presently included in *Bracca* are very diverse, but the genus is well defined by the following morphological characters:

- (1) male antennae ciliate;
- (2) fovea present on forewing;

Abbreviations: ZFMK, Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany; ZSM, Zoologische Staatssammlung München, Munich, Germany.

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- (3) tibia of hindleg not dilated, without hair pencil;
- (4) sternites 1+2 without lateral, sterno-tympanal process, tympanal cavities very small;
- (5) abdominal sternite 3 without setal comb;
- (6) coremata present mid-ventrally between sternites 6, 7 and 8 (but lacking in a group of species endemic to New Guinea); they may be bifurcate or quadrifurcate, the anterior pair may be reduced;
- (7) male genitalia with uncus frequently bifid (but entire in a group including the type species); gnathos present but often with the central part reduced; valve costa centrally with a strong, flattened, dorsal lobe bearing long curved hair setae, and with a second lobe opposite to the former, situated more distally and ventrally, with variable ornamentation of few to many strong spines; transverse band of sclerotisation between costa and sacculus with a digitate, densely spined lobe at dorsal edge, often pointing basad; distal end of sacculus with further ornamentation of one to many strong spines; aedeagus simple, vesica without ornamentation or moderately dentate;
- (8) female genitalia with a sclerotized band on bursa copulatrix, consisting of transverse, minutely dentate ridges, in addition to a dentate signum that

frequently is semi-circular; sterigma with variable ornamentation.

Bracca olafhenkeli sp. nov.

Etymology

The species is named after Hans-Olaf Henkel, in recognition of his merits as president of the Leibniz Gemeinschaft, acknowledging his commitment to basic and applied sciences, and for his support of natural history collections.

Type-material

Holotype ♂, “South Sulawesi, Strasse von Palopo nach Rantepao, Puncak Palopo, 1.100 m, 25.9.1995, leg. H. Schnitzler”. Coll. Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany (ZFMK).

Paratypes. 1 ♂, same data as holotype; 1 ♂, same data except 2°55'S 120°05'E, 900–1300 m, i.1997, leg. local collector (ex coll. Dr. R. Brechlin, ex coll. Museum Witt); 1 ♂, same as preceding except x.1997; 3 ♂, same data, iv.1998; 3 ♂, “Sud Sulawesi, Rte. de Rantepao à

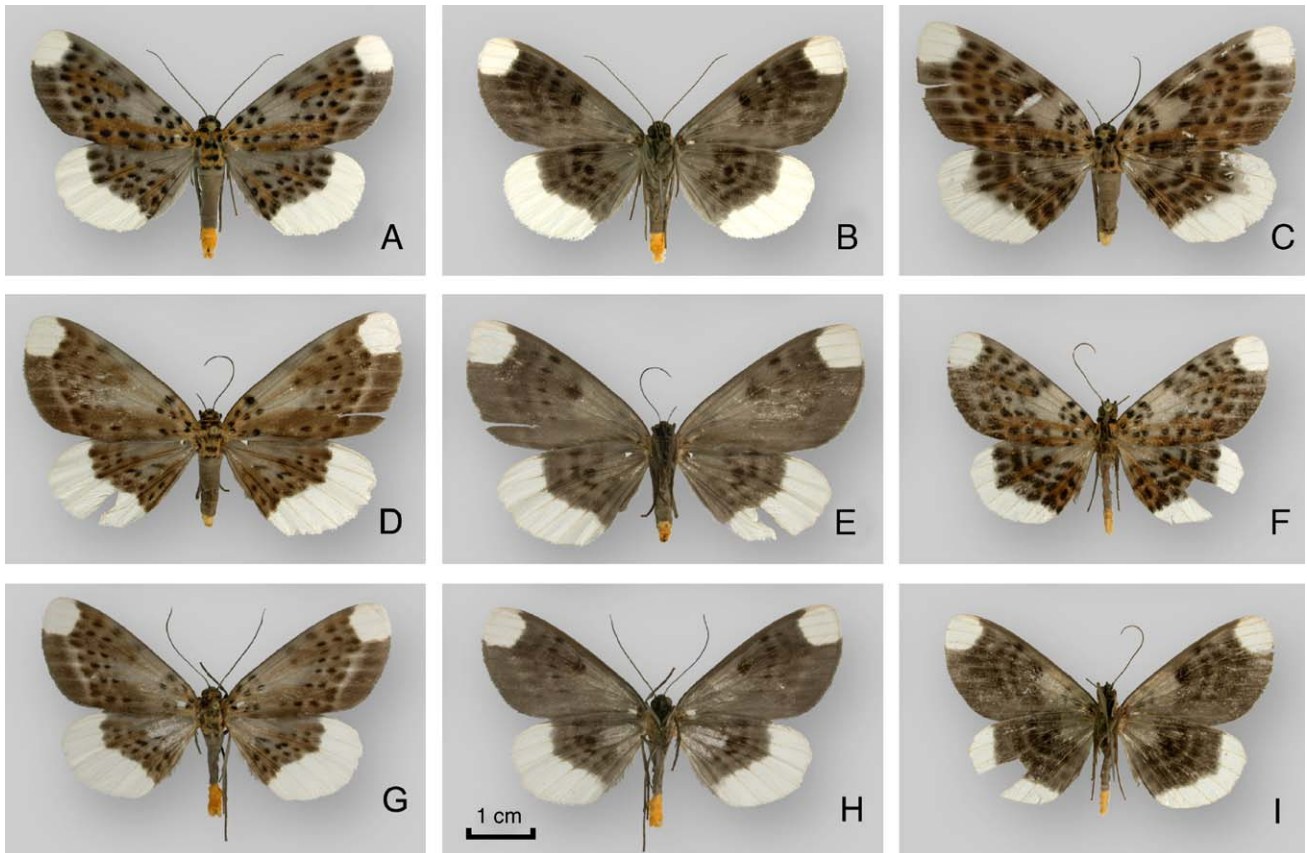


Fig. 1. Adults of *Bracca olafhenkeli* sp. nov., paratypes. (A, B) ♂, “Sempuraga”, Central Sulawesi; A: upperside, B: underside. (C) ♀, S. Sulawesi, “Bantimurung”. (D, E) ♀, (G, H) ♂, S. Sulawesi, Polo Polo, 2200 m. (F, I) ♂, Gunung Ambang Reserve, North Sulawesi.

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