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Description of a new species of *Hypanartia* from southern Ecuador and northern Peru (*Lepidoptera*: *Nymphalidae*)

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ABSTRACT. A new species of ***Hypanartia*** (*Nymphalidae*)**, *H. christophori*,** is described from Southern Ecuador and from Northern Peru and is compared to other similar looking sympatric congeneric species.

Key words: entomology, taxonomy, National Park Podocarpus, Ecuador, Peru, *Lepidoptera*, *Nymphalidae, Hypanartia,* neotropical, taxonomy, new species, endemic, biodiversity, conservation of natural environment.

ABBREVIATIONS AND ACRONYMS

FW - Forewing
FWR - Forewing recto
FWV - Forewing verso
HW – Hindwing
HWR - Hindwing recto
HWV - Hindwing verso

BMNH – British Museum Natural History, London, England (Phil ACKERY);
MUSM – Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru (Gerardo LAMAS);
MZUJ – Muzeum Zoologiczne Uniwersytetu Jagielońskiego, Kraków, Poland (Prof. Janusz WOJTUSIAK);
QCAZ – Departamento de Ciencas Biologicas Pontifica Universidad Catolica del Ecuador, Ouito, Ecuador (Giovanni ONORE, Francisco PINAS);
AJ – Collection Artur JASIŃSKI, Piastów, Poland.

INTRODUCTION

Southern Ecuador and Northern Peru are an area of high biodiversity of diurnal Lepidoptera, most likely the highest in South America (BECCALONI 1995) and in the World, particularly affecting the high altitude Andean taxa (T. PYRCZ pers. comm.). Unfortunately, the deforestation rate in this part of the Andes is very alarming as a result of inadequate measures to stop logging in the National Park Podocarpus.

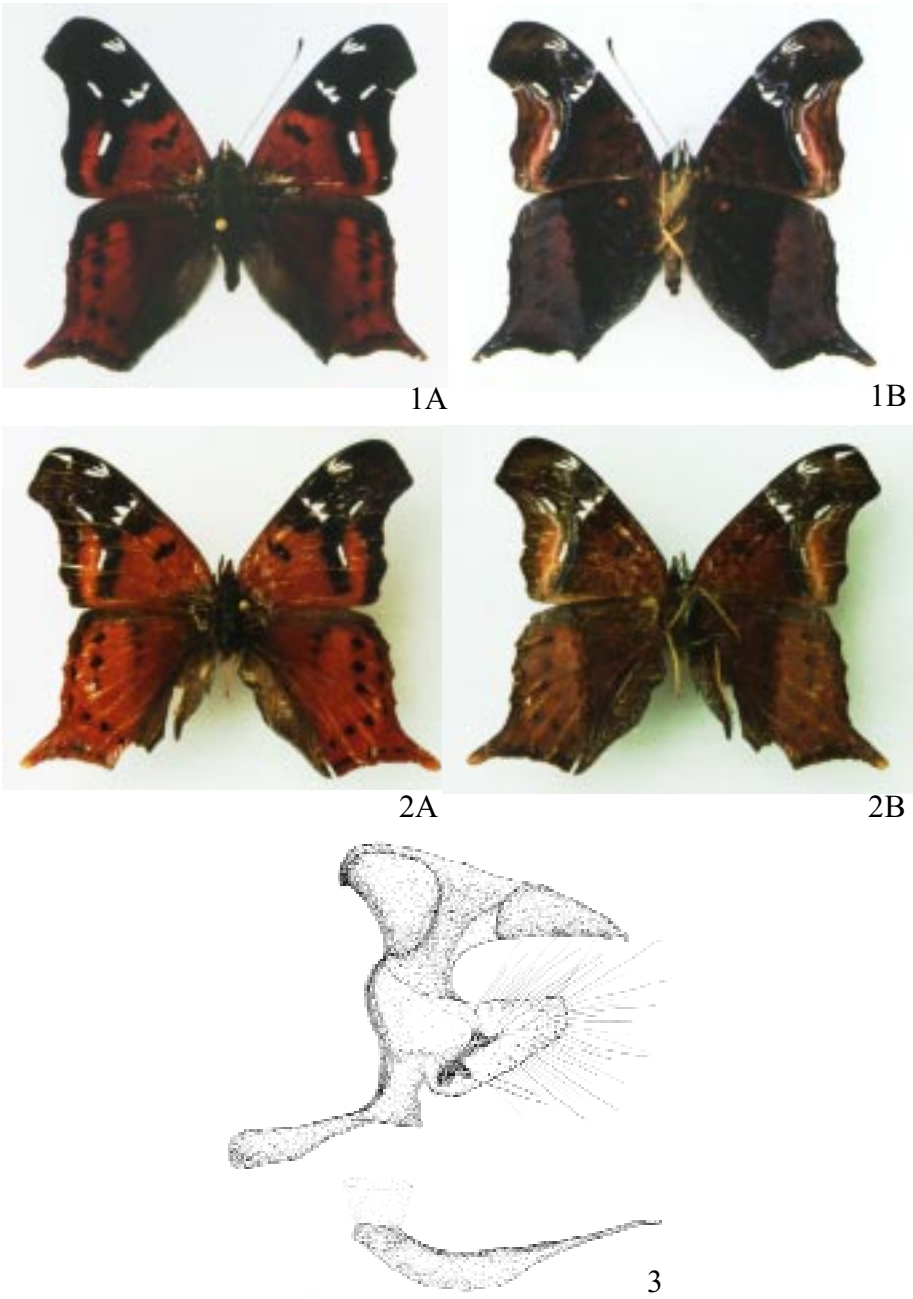
Hypanartia christophori JASIŃSKI spec. nov.

DIAGNOSIS

In its wing pattern the new species is most similar to *H. lindigi*. Antennal clubs without the contrasting white dot at apex of terminal segment, which is diagnostic for *H. lindigi*. The three white dots situated in one line in cells 4, 5, 6 of the FW, are not transparent (as in *H. kefersteini*). In *H. lindigi* being fully transparent and larger. Dots in cell 6 in *H. christophori* and *H. lindigi* are smaller as compared with dots in cell 4, whereas, when present, they are much bigger in *H. kefersteini* when present. Marks in cell 2 are three times longer than wide and almost straight. In *H. lindigi* they are only twice as long and moon shaped. On the HW there is a black dot in cell 3 situated almost in a row with dots in cells 4, 5 and 6, in *H. lindigi* it is distinctly situated on the extension of the submarginal line. Outer margin almost straight without any incision before the "tail" as in *H. lindigi.* Margins of median line, dividing lighter and darker regions of HWV, are semicircularily wavy with one wave in each cell, in *H. lindigi* it is almost straight. The margin forms an angle of c. 90° with the costal margin, similarily as in *H. lindigi*, while only about 60° in *H. kefersteini*. Background colour of the outer lighter area HWV almost homogenously unicoloured light brown or somewhat darker with silvery-graphite-violet sheen (e.g. in holotype), in *H. lindigi* and *H. kefersteini* patterned with an "autumn leaves" mosaic. Red-brown submarginal patch of the FWR extending from cell 1, reaching to cell 3, similarily as in *H. lindigi*, while in *H. kefersteini* ending, as a rule, in cell 1 and only incidentally reaching on to the vein 2. Discal cell of the FWR with one black marking (similar to *H. lindigi*) distinctively shaped as a "flying bird". In *H. kefersteini* there are two separate marks shaped as an "upside-down comma".

DESCRIPTION

MALE: (Fig. 1A & B) **Head:** Eyes chestnut, densely red-brown, hairy. Palpi ventrally white with black short hair, dorsally russet hairy. Antennae to two-thirds costa, dorsally black, ventrally on the base of each segment with a suffusion of white scales. Clubs broad and concave (spoon-shaped) with rusty lighter area near apex (but not milk-white as in *H. lindigi*). **Thorax:** dorsally copperish with emerald greenish shimmer and iridescence with dense long emer-



1-3. *Hypanartia christophori* n. sp.: 1 - Male: A - from above, B - from below; 2 - female: A - from above, B - from below; 3 - male genitalia

ald green hair, turning russet (depending on the angle of incidence of light). Ventrally with long bronze greyish hair. Mid- and hind-tibia and tarsi very light ivory with very short white hair. Femur ventrally black with small white scales, dorsally brownish cream. Foretarsi with dense brush long greyish cream hair. Abdomen dorsally black with pure brownish hair and longitudinal scales, ventrally only with dirty white brownish grey scales. **Forewing (FW):** length (n=2) 25 mm. Wing shape triangular. Apex with a distinct lateral protrusion. Fringes black only on the upper 2/3 part cells 2 and 3 whitish and with only a few white scales on the apex and mid cell 1. Light dots: 3 dots situated on one line in cells 4, 5 , 6, thick marks in cells 2 and 4, the latter transparent in the central area, small V-shaped dots in cell 8 and analogous wedge-shape in cell 7. **Upperside:** ground colour red-brownish. Dark pattern as vertical marginal patch, postmedial patch not reaching cell 1', apical 2/5 part darkened, and black bi-waved dots in discal cell. Also a small part of basal area dark. **Underside:** ground colour in basal half part chocolate with brown patterns only slightly distinct from the ground colour, bordered distally with light blue edge. Apex multicoloured, from dark grey to chocolate brown with indistinct dots. Outer lighter vertical postmedial area in cells 4,3,2,1,1' multicoloured with wide rose, brownish, light bronze, dark brown, light bronze and dark brown stripes. **Hindwing (HW):** Fringes black, only on the top of tails, apex and inner margin whitish. **Upperside:** Ground colour same as on the forewings. Dark pattern as dashed submarginal line, brown marginal, black dots in marginal area and dark area of varying intensity of colour in on base and in cell 7. In the center of cells 6, 5 and 4 a darker wedge-shaped mark. Basal half of wing darker with long dense hair especially along vein 1, similar in colour to ground-colour. **Underside:** Basal half of wing chocolate brown with pattern in form of vertical waved lines in hint similar to ground colour, with a contrasting light orange-brownish dot on base of cell 7. Ground-colour in median area almost uniform brown with silvery overcast, without mosaic, with 6 small dots inside a weakly marked ocellus (barely visible in cells 6 and 5). Marginal lines from basal to marginal: dashed grey-brown, light lilac, chocolate brown, dashed light brown and chocolate brown.

Male genitalia (Fig. 3): Saccus shorter than in *H. lindigi* and *H. kefersteini*, on apex slightly broader, smaller than in *H. kefersteini* and stouter than in *H. lindigi.* Aedeagus similar to *H. lindigi* straighter and more slender than in *H. kefersteini*.

Female (Fig. 2A & B): Sexual dimorphism poorly marked. Female generally lighter. HWV base of cell 7 without contrasting light dot. Foretarsi only with sparse and short whitish bronze hair. Forewing length 24 mm (n=1).

TYPES

Holotype: male, Ecuador, Zamora-Chinchipe, Cordillera de Sabanilla (= Cordillera de Zamora), north of Valladolid, 2500m., 23.IV.1997, leg. A. JASIŃSKI, temporarily in the author's collection (Piastów, Poland). **Allotype:**

female, same data depository in AJ. **Paratypes:** 1 male, Ecuador, Zamora-Chinchipe, Quebrada Honda, 2600m. 15. V.1998, leg. A. JASIŃSKI, in QCAZ.; 1 male, Peru, Amazonas, Pomacochas, Puente El Chido via San Lorenzo, 18.VIII.1998, 2200-2300m, leg. T. PYRCZ in MUSM; 2 males, same locality and data in AJ; 2 males, same locality, 08.VII.1998, leg. T. PYRCZ & J. WOJTUSIAK, in MUSM; 2 males, same locality, 09.VII.1998, leg. T. PYRCZ & J. WOJTUSIAK in MZUJ; 1 males, same locality, 10.VII.1998, leg. T. PYRCZ & J. WOJTUSIAK in BMNH and MZUJ; 1 male Peru: Molinopampa-Granada, 5.VIII.1998, 3000 m., leg. T. PYRCZ & J. WOJTUSIAK in MZUJ; 1 male Peru: Huancabamba, 1903, 6-10,000 pieds in BMNH (main collection); 1 male: Peru: Oxapampa, 7200', in BMNH (main collection); 1 male Peru: Huanuco: Cushi, 1900m., leg. W. HOFFMANN in BMNH (ROTHSCHILD Collection); 1 male: Peru: Huancabamba, Cerro de Pasco, I.1905, 3100', leg. E. BOETTGER in BMNH (ROTHSCHILD collection); 1 male Peru: Junin: Huancabamba, II.1905, 3000', leg. E. BOETTGER in BMNH (ROTHSCHILD collections)

In the British Museum (ROTHSCHILD collection) there are specimens of a species from Southern Peru (localities: Inambari, Oroya, Limbani, Agualani, Marcapata) which appears to be *H. christophori* but differs in having wing shape and large transparent spots on the forewing like typical *H. lindigii* (WILLMOTT pers. comm.)

ETYMOLOGY

This species is dedicated to my friend Krzysztof (= Christophorus) ŁOŚ, who joined me on several field trips to Ecuador.

IMMATURE STAGES AND HOST

Unknown. Host plant of the allied species *H. kefersteini* belongs to the genus *Pilea*: *Urticaceae* (YOUNG 1976; DE VRIES 1987).

BEHAVIOUR AND ECOLOGY

The flight pattern is typical of the genus, rather quick. On hot and sunny days males look for wet soil, excrements and other nutritive substances. The holotype specimen was caught on dung, other specimens were collected either on the wing or whilst mud puddling. This species seems to be rare in Ecuador, as in spite of several visits in the southern part of this country this author collected only 3 specimens. Tomasz PYRCZ (pers. comm.) reports that it seems much more frequent in Northern Peru (Amazonas - Molinopampa, Pomacochas).

This new species is closely related with *H. kefersteini*, *H. lindigi* and another undescribed species of *Hypanartia* (WILLMOTT, HALL and LAMAS in prep.). These four species are locally sympatric in high altitude localities, but *H. kefersteini* flies at lower altitudes, generally below 2000 m a.s.l., while *H. lindigi* possibly slightly above *H. christophori*.

REMARKS

H. christophori is a cloud forest species of *Hypanartia*. This natural habitat in the National Park Podocarpus is under severe threat due to impune burning and illegal logging for extensive, yet little productive grazing in the areas adjacent to National Park Podocarpus. Is it necessary to implement the law, which sanctions such an activity, and also develop an activity promoting sustained agriculture and the conservation of natural habitats. If this is not achieved within a short time the natural forests of Southern Ecuador will vanish along with their World wide unique species of fauna and flora.

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