

A Remarkable Elevational Record of *Methona confusa* Butler, 1873 (Nymphalidae) in a High Montane Area of Southeastern Peru

Author: Cerdeña, José

Source: The Journal of the Lepidopterists' Society, 70(3) : 249-250

Published By: The Lepidopterists' Society

URL: <https://doi.org/10.18473/107.070.0311>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

A REMARKABLE ELEVATIONAL RECORD OF *METHONA CONFUSA* BUTLER, 1873
(NYMPHALIDAE) IN A HIGH MONTANE AREA OF SOUTHEASTERN PERUJOSÉ CERDEÑA^{1*}, RÓMULO DELGADO², ERICK HUAMANÍ³ AND GERARDO LAMAS⁴¹Museo de Historia Natural, Universidad Nacional de San Agustín, Av. Alcides Carrión s/n, Arequipa, Perú.

*Corresponding author e-mail: cerdenajoseal@yahoo.es.

²Santuario Nacional Megantoni, SERNANP, Jirón Puno R-4, Quillabamba, Cuzco, Perú.³Museo de Historia Natural, Universidad Nacional de San Agustín, Av. Alcides Carrión s/n, Arequipa, Perú⁴Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Apartado 14-0434, Lima-14, Perú

ABSTRACT. *Methona confusa* has been recorded across its geographic range from low elevations up to around 2,000 m, being rare above 1,500 m. We report herein a new elevational record of *M. confusa* above 3,500 m, the highest ever reported for ithomiines, from upper montane area of Megantoni National Sanctuary and Manu National Park, located on the eastern slopes of the Andes of southern Peru.

Additional key words: Andes, Ithomiini, hilltopping

Methona Doubleday, 1847 (Lepidoptera: Nymphalidae: Danainae) is a small genus of the tribe Ithomiini including seven species (Lamas 2004), distributed from Panama to northern Argentina, Uruguay, and southern Brazil (Neild 2008).

Methona confusa Butler, 1873, is distributed from Eastern Panama to the Amazon basin, with four weakly differentiated subspecies recognized (Lamas 2004). It is encountered commonly in a variety of forest habitats, from primary premontane cloud forest to lowland secondary growth (Neild 2008, Hill & Tipan 2008). In Peru, this species is widespread and common on the eastern slopes of the Andes below 1,500 m.

MATERIALS AND METHODS

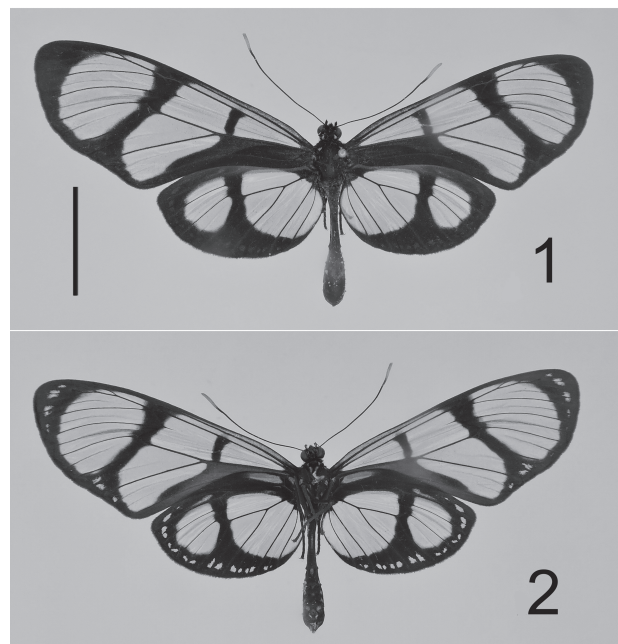
In September 2012, as a result of a butterfly survey in the upper montane area of the Megantoni National Sanctuary (MNS), on the eastern slopes of the Andes of southern Peru, one female specimen of *M. confusa* (Fig. 1) was collected near the boundary of MNS and the Manu National Park (MNP), Cuzco Department (12°30'25"S, 72°05'20"W), at 3,700 m elevation. The area is an ecotone between open, páramo-like vegetation ('wet puna') and elfin forest. The butterfly was flying at the summit of a small hill, sometimes falling into the ground vegetation and remaining there motionless, but before capture had been cruising "up-and-over" the summit, being blown off the top by strong winds and flying against the wind in approaching summit. In addition, some 200 m downhill, two more individuals of this species were found, heavily damaged and dead on the ground; those individuals may have been killed by the heavy rains falling in the area during the previous days.

Material examined. One female: Peru, Cuzco, Incatambo, 12°30'30"S, 72°05'05"W, 3,700 m, 12–15

September 2012, J. Cerdeña, R. Delgado & E. Huamaní leg. The specimen is deposited in the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos (MUSM), Lima, Peru.

RESULTS

This is the first Ithomiini species ever reported in a high Andean ecotone between wet puna and elfin forest, as ithomiines normally occur in humid forests from sea level to about 3,000 m (Willmott & Freitas 2006). Indeed, this event would have been less remarkable if a related species, *Methona maxima*



FIGS. 1, 2. Female adult of *Methona confusa* Butler, 1873 collected in September 2012, Cuzco Department, Peru. 1) Dorsal view; 2) ventral view. Scale bar 02 cm.

nigerrima (Forbes), which has been recorded up to 2,950 m elevation at sites a few km to the south, in the upper Cosñipata valley (Lamas, unpubl. data), had been found in this particular location. This is also a new elevational record for this group, the highest ever reported for ithomiines.

DISCUSSION

The only reliable hostplant records for species of *Methona* belong to the genus *Brunfelsia* Linnaeus, 1753 (Solanaceae) (Lamas 1973, Plowman 1998, Beccaloni et al. 2008). Five species of *Brunfelsia* (*amazonica* C.V. Morton, 1949, *chiricaspi* Plowman, 1973, *dwyeri* D'Arcy, 1971, *grandiflora* D. Don, 1829, and *pauciflora* (Cham. & Schltdl.) Benth. in DC., 1846) have been reported as larval foodplants for *M. confusa* (Plowman 1998); of them, *B. pauciflora* is almost certainly misidentified as the species is endemic to southeastern Brazil, where *M. confusa* does not occur. Only *B. grandiflora* has been found in the general area where the *M. confusa* specimens discussed herein were recorded, thus it is highly possible that the latter fed as larvae on individuals of that species. Although *B. grandiflora* is often cultivated as an ornamental shrub or small tree (Plowman 1998), there is no evidence of its presence above 2,000 m in southeastern Peru (indeed, no species of *Brunfelsia* have been recorded as occurring above 3,300 m [Plowman 1998]). Furthermore, the area of the MNS where this survey was conducted has no human inhabitants or man-made roads. Therefore, it is reasonable to hypothesize that *M. confusa* has no resident breeding populations in the area surveyed and was not introduced there through human agency.

If the *M. confusa* adults reported here were not part of a resident, breeding population, they may have either been performing long-distance dispersal through unfavorable habitat (the wet puna / elfin forest ecotone) between two separate areas of "normal" habitat (montane forest), or else were exhibiting hilltopping behavior (Shields 1968). At least one species of *Methona* (*singularis* Staudinger, 1884) has been cited as exhibiting summit congregation behavior (Kesselring in Shields 1968), and it may occur in *M. confusa* too. Considering that in the same study site we recorded a skipper (Hesperiidae) specimen which was obviously engaged in hilltopping behavior, and turned out to represent a new country record for Peru (Cerdeña et al. 2014), this highlights the importance of surveying hill summit habitats in order to significantly increase the chances of registering the occurrence of scarce or

otherwise elusive butterfly species while performing biodiversity surveys (see also Dolibaina et al. [2012, 2015] and Cerdeña & Farfán [2015] for other remarkable findings made at hill summits).

ACKNOWLEDGEMENTS

To MBZ Fund Conservation by financing granted to the first author to carry the project titled "High Andean Butterflies of Biosphere Reserve Manu: Diversity, endemism and conservation." Field work was performed under authorization R.J. N° 0010-2012 SERNANP-SNM issued by the Servicio Nacional de Áreas Naturales Protegidas por el Estado (SERNANP), Ministerio del Ambiente, Peru.

LITERATURE CITED

- BECCALONI, G. W., Á. L. VILORIA, S. K. HALL & G. S. ROBINSON. 2008. Catalogue of the hostplants of the Neotropical butterflies. Catálogo de las plantas huésped de las mariposas neotropicales. Zaragoza, Sociedad Entomológica Aragonesa. 536 pp.
- CERDEÑA, J.A. & J. J. FARFÁN. 2015. Primer registro para Perú de *Symmachia sepyra* (Hewitson, 1877) (Lepidoptera: Riodinidae). Acta Zool. Mex. (Nueva Serie) 31: 129-130.
- CERDEÑA, J.A., E. HUAMANÍ, R. DELGADO & G. LAMAS. 2014. Nueva especie de Hesperidae (Lepidoptera) para Perú: *Dalla granites* (Mabille, 1898). Rev. Per. Biol. 21: 105 – 107.
- DOLIBAINA, D.R., F.M.S. DIAS, O.H.H. MIELKE & M.M. CASAGRANDE. 2015. *Argyrogrammana* Strand (Lepidoptera: Riodinidae) from Parque Nacional da Serra do Divisor, Acre, Brazil, with the description of four new species. Zootaxa 4028: 227-245.
- DOLIBAINA, D.R., L.A.R. LEITE, F.M.S. DIAS, O.H.H. MIELKE & M.M. CASAGRANDE. 2012. An annotated list of *Symmachia* Hübner, [1819] (Lepidoptera: Riodinidae: Symmachini) from Parque Nacional da Serra do Divisor, Acre, Brazil, with the description of a new species. Insecta Mundi 0249: 1-11.
- HILL, R.I. & L.A. TIPAN. 2008. Description of the immature stages of *Methona confusa confusa* Butler, 1873 and *Methona curvifascia* Weymer, 1883 (Nymphalidae, Ithomiinae) from Eastern Ecuador. J. Lepid. Soc. 62: 89-98.
- LAMAS, G. 1973. Taxonomia e evolução dos gêneros *Ituna* Doubleday (Danainae) e *Paititia* gen. n., *Thyridia* Hübner e *Methona* Doubleday (Ithomiinae) (Nymphalidae, Lepidoptera). D.Sc. thesis, Universidade de São Paulo, São Paulo, Brazil.
- LAMAS, G. 2004. Nymphalidae. Ithomiinae, pp. 172-191. In Lamas, G. (ed.). Checklist: Part 4A. Hesperioidea – Papilionoidea. In: J. B. Heppner (Ed.), Atlas of Neotropical Lepidoptera. Volume 5A. Gainesville, Association for Tropical Lepidoptera; Scientific Publishers.
- NEILD, A. 2008. The Butterflies of Venezuela. Part 2: Nymphalidae II (Acraeinae, Libytheinae, Nymphalinae, Ithomiinae, Morphinae). A comprehensive guide to the identification of adult Nymphalidae, Papilionidae, and Pieridae. Greenwich, London, Meridian Publications. 275 pp.
- PLOWMAN, T. C. 1998. A revision of the South American species of *Brunfelsia* (Solanaceae). Fieldiana (Botany) (New Series) 39: xiii + 135 pp.
- SHIELDS, O. 1968. Hilltopping. An ecological study of summit congregation behavior of butterflies on a Southern California hill. J. Res. Lepid. 6: 69-178.
- WILLMOTT, K.R. & A.V.L. FREITAS. 2006. Higher level phylogeny of the Ithomiinae (Lepidoptera: Nymphalidae): classification, patterns of larval hostplant colonization and diversification. Cladistics 22: 297-368.

Submitted for publication 19 March 2016; revised and accepted 18 June 2016.