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Mass Movement of *Nicolaea besidia* (Hewitson) (Lepidoptera: Lycaenidae), a Species Not Previously Recorded from Trinidad, West Indies

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The butterfly family Lycaenidae comprises a small number of "blues" (Polyommatinae), and a large number of hairstreaks (Theclinae) in Trinidad. The hairstreaks are usually small, blue and/or brown on the upper surface with a paler under surface marked with lines and spots. There are well over 1,000 species of Theclinae in the Neotropical Region including many undescribed species (Robbins 2004). Barcant (1970) lists 92 species of Lycaenidae from Trinidad of which all but three are Theclinae, but the authors are now aware of at least 130 species from the island, all but four being Theclinae.

Mass movements and migration of Lepidoptera are a well-known phenomenon in tropical and temperate regions (Williams 1958). Several species are known to migrate to Trinidad from Venezuela, including *Urania leilus* (Linnaeus), the white-tail page or green page (Uraniidae), and *Aphrissa statira* (Cramer), the yellow migrant (Pieridae) (Williams 1919, 1920; Barcant 1970; Quesnel 1971). Several species of Sphingidae are likely to migrate into Trinidad (Stradling *et al*. 1983) and recently, mass movements of *Hylesia metabus* (Cramer) have been reported in the south-west of the island (Polar *et al*. 2010).

Mass movements of Lycaenidae are rarely reported, especially in South America. In the only record from Trinidad, Williams (1920) describes a mass movement of "*Tmolus beon*" (Cramer) observed over the Pitch Lake, south-west Trinidad, on 23 March, 1919 at 1615-1630 h, the butterflies flying almost due south, with a strong breeze from the east, counted at rates of 8-25 per minute across a 30 yard front. Two male butterflies were caught and subsequently identified by W.J. Kaye as "*Tmolus beon*". Robbins and Small (1991) have suggested that this name may refer to *Calycopis isobeon* (Druce). Unfortunately, *beon* is a catch-all name applied by Kaye (1921) and Barcant (1970) to a variety of species in the genus *Calycopis* and similar genera of Lycaenidae (M.J.W. Cock unpublished), so Williams' observation might apply to any of a dozen or more species.

Beebe (1951) reports 20 species of Lycaenidae migrating at Portachula Pass, Rancho Grande, northern Venezuela. However, most of these represent captures of small numbers or singletons in the pass, and only two, *Ministrymon azia* (Hewitson) (Theclinae) and *Leptotes*

cassius cassius (Cramer) (Polyommatinae), occurred in numbers sufficiently large to suggest a mass movement (Robbins and Small 1991). Both species flew through the pass in many thousands, the former in July, 1948 and the latter in June, 1948, in what are probably the largest mass movements of lycaenids recorded in the Neotropical Region. In Panama, Robbins and Small (1991) recorded more than 100 species of hairstreak dispersing annually on the trade winds in relatively small numbers (0-15 per hour along a 10 m stretch). We are aware of no other reports of mass movements of Lycaenidae from the Neotropical Region.

Here we report another mass movement of a lycaenid in Trinidad: *Nicolaea besidia* (Hewitson), a species not previously recorded from the island. On 18 November, 1979, the first author and the late F. Clive Urich were collecting on the seashore at St. Quintin Estate, Columbus Bay, Cedros, at the end of the southwestern peninsula of Trinidad, about 12 km from the South American mainland. It was late morning, between 1000 and 1200 h, when we noticed lycaenids flying in off the sea from the direction of Venezuela and settling on the mangrove trees behind us. They were flying at a height from slightly more than head height to about twice that, approximately 2.5-5.0 m. The wind was swirling, but on the beach as we watched them come in over the water, the wind was from the sea, i.e., the south-west. No attempt was made to quantify the numbers arriving, but certainly hundreds were observed over a five-minute period. They were flying in across the beach on a broad front of several hundred meters, perhaps as much as a kilometer. We were able to capture about 15 specimens, including both males and females. These were all the same species, and neither collector recognized them despite many years collecting in Trinidad. Voucher specimens for these observations are in the collections of both authors and that of F.C. Urich.

A specimen (Figure 1) was sent to the Commonwealth Institute of Entomology where Dr J.D. Holloway identified it as "*Thecla*" *besidia*, which was subsequently confirmed by the second author by comparison with Hewitson's type in the Natural History Museum, London and by Dr. R.K. Robbins of the Smithsonian Institution, Washington. *Thecla besidia* was described from Brazil (Hewitson 1868). Johnson (1991) inadvertently redescribed it from French Guiana as *Sipaea sepeina*, but this is now considered a synonym of *besidia* (Robbins 2004). D'Abrera (1995, p. 1170) illustrates the male and female upper surface and the male under surface, noting that it is found from Venezuela, Colombia, Amazonas to central Brazil; one specimen illustrated is from north-east Venezuela (Cocogal). *Thecla besidia* is now placed in the genus *Nicolaea* (Robbins 2004).

The identification of Neotropical Theclinae is not straightforward, often requiring dissection of the genitalia for confirmation. However, *N. besidia* (Figure 1) is a relatively distinctive species compared to other hairstreaks found in Trinidad. Key distinguishing characters include the two hind wing tails; on the underside, the heavy red line, its shape and alignment, dark shading distal to this line, the shape and position of the marginal and submarginal red spots; on the upper side, the shade and extent of the blue colouring and the brown scent spot at the end

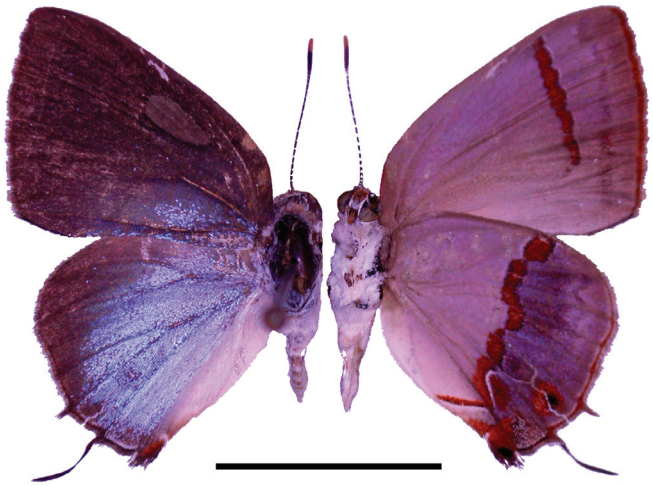

Fig. 1. Male *Nicolaea besidia* (Hewitson) captured at St. Quintin Estate, Columbus Bay, Cedros, Trinidad, 18 November, 1979, by S. Alston-Smith (specimen in collection of M.J.W. Cock). Scale bar = 1cm.

of the forewing cell in the male. This combination of features should suffice to identify this species in Trinidad.

Since this 1979 observation, the first author has found that *N. besidia* is present in several mangrove swamps of the west side of Trinidad, including Chacachacare, Chaguaramas, Caroni, Pt. Fortin and Guapo, but has not confirmed it from Nariva Swamp on the east coast. These observations indicate that *N. besidia* is most probably resident in at least some of the mangrove swamps of Trinidad. The food plant is likely to be one or more swamp plants, probably one or more of the mangrove trees. The available evidence suggests that this is probably a long-term resident Trinidad species, hitherto overlooked, whose populations are reinforced by immigrations from the mangrove swamps of Venezuela. The parallel with *Hylesia metabus* (Polar *et al*. 2010) is evident, although the immigration of that moth to Trinidad is probably dependent on wind patterns that bring a weak flier from outbreaks in the mainland mangrove swamps to the island. *Nicolaea besidia* is a much stronger flier than *H. metabus* and would be able to move in a particular direction in

spite of light wind – cf. Williams' (1920) observation of "*Tmolus beon*" flying south despite an east wind. Indeed, the possibility that the species that Williams observed was actually *N. besidia* cannot be ignored, but without examining the two specimens that Kaye identified, this cannot now be known. They do not seem to be in the McGuire Centre for Lepidoptera, which has Kaye's butterfly collection (A.D. Warren, pers. comm. 2010).

REFERENCES

Barcant, M. 1970. Butterflies of Trinidad and Tobago. London: Collins. 314 p.

Beebe, W. 1951. Migration of Nymphalidae (Nymphalinae), Brassolidae, Morphidae, Libytheidae, Satyridae, Riodinidae, Lycaenidae and Hesperiidae (butterflies) through Portachula Pass, Rancho Grande, north-central Venezuela. *Zoologica*, 36: 1-16, plates I-II.

D'Abrera, B. 1995. Butterflies of the Neotropical Region. Part VII. Lycaenidae. Black Rock, Australia: Hill House, xi + 1098-1270.

Hewitson, W. C. 1868. Descriptions of some new species of Lycaenidae. London: John Van Voorst. i + 36 p.

Johnson, K. 1991. Neotropical hairstreak butterflies: Genera of the "*Calycopis*/*Calystryma* Grade" of Eumaeini (Lepidoptera: Lycaenidae: Theclinae) and their diagnostics. *Reports of the Museum of Natural History, University of Wisconsin*, 21: [iv] + 128 pp.

Kaye, W. J. 1921. Catalogue of the Trinidad Lepidoptera: Rhopalocera. *Memoirs of the Department of Agriculture, Trinidad and Tobago*, 2: 163 p.

Polar, P., Cock, M. J. W., Frederickson, C., Hosein, M. and **Krauss, U.** 2010. Invasions of *Hylesia metabus* (Lepidoptera: Saturniidae: Hemileucinae) into Trinidad, West Indies. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club*, 2010: 1-10.

Quesnel, V. C. 1971. Lepidopteran migrations in 1969. *Journal of The Trinidad Field Naturalists' Club*, 1971: 48-51.

Robbins, R. K. 2004. 98 Lycaenidae: Theclinae Tribe Eumaeini. p. 118-137. *In* **G. Lamas,** ed. Checklist: Part 4A Hesperioidea – Papilionoidea. Atlas of Neotropical Lepidoptera. Gainesville, Florida: Scientific Publishers.

Robbins, R. K. and **Small Jr., G. B.** 1981. Wind dispersal of Panamanian hairstreak butterflies (Lepidoptera: Lycaenidae) and its evolutionary significance. *Biotropica*, 13: 308-315.

Stradling, D. J., Legg, C. J. and **Bennett, F. D.** 1983. Observations on the Sphingidae (Lepidoptera) of Trinidad. *Bulletin of Entomological Research*, 73: 201-232.

Williams, C. B. 1919. A migration of yellow butterflies (*Catopsilia statira*) in Trinidad. *Transactions of the Entomological Society of London*, 1919: 76-88, plates vi-x.

Williams, C. B. 1920. Records of insect migrations in tropical America. *Transactions of the Royal Entomological Society of London*, 1920-21: 146-165.

Williams, C. B. 1958. Insect Migration. London: Collins. xiii + 237 p.

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