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A NEW SPECIES OF HAIRSTREAK (LYCAENIDAE) FROM HISPANIOLA

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Although in the West Indies, Jamaica has the largest number of hairstreak species (12 species in six genera; three species are endemic), the island of Hispaniola ranks second with 11 species, of which three are endemic. The Hispaniolan species are: *Allosmaitia fidena* Hewitson, *Chlorostrymon simaethis* Drury, *Nesiostrymon celidus* Lucas, *Tmolus azia* Hewitson, *Strymon bazochii* Godart, *Strymon toussainti* Comstock and Huntington, *Strymon acis* Drury, *Strymon columella* Fabricius, *Strymon christophei* Comstock and Huntington, *Strymon limenius* Hewitson, and *Electrostrymon angelia* Hewitson. Of these Hispaniolan species, two have endemic subspecies (*S. a. petioni, E. a. boyeri*); *A. fidena, S. toussainti,* and *S. christophei* are the endemic species. It is reasonable to expect that there may be Hispaniolan representatives of the two Jamaican "unique" (for the West Indies) genera *Cyanophrys* Clench (1963) and *Thereus* Hübner.

The Hispaniolan species may be divided conveniently into three subgroups on the basis of underside (un) pattern: species that have no distinct linear pattern (for example, *S. bazochii*); species that have unhw patterns that, although more or less linear, are not distinctly so and have black dots and/or broken lines among the unhw pattern elements (*A. fidena, Ch. simaethis, N. celidus, S. toussainti, S. colmella,* and *S. limenius*); and those species in which the unhw have distinct lines (*E. angelia, S. acis*). It is the latter group that concerns us here. *Electrostrymon angelia* has a dark brown (at times almost black) unhw ground color, whereas *S. acis* has the unhw ground color pale tan, and the dark lines are vivid and made even more distinct by marginally accompanying white lines. The latter species likewise has a white cell spot on the unhw, a feature that is absent in all other species. These groups are informal and their members differ in other, often more obvious characters; for example, the very pale gray (almost white) un color distinguishes *N. celidus* from other Hispaniolan hairstreaks.

The upperside of these hairstreaks varies from gray to tan to iridescent blue. The latter condition occurs in *N. celidus. Strymon bazochii* has a purplish iridescence (more prominent in males), and *Ch. simaethis* has the un bright green, a character that distinguishes it from other Hispaniolan theclines.

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In 1983 a hairstreak was taken in the uplands of the Cordillera Central in the Republica Dominicana. Because of its blue upper surface (up), the butterfly was thought in the field to be *A. fidena.* But when the specimen was spread, the presence of two hw tails (one in *A. fidena*), red hw anal lobe spot, and a pale un (darker in *A. fidena*), showed that the first tentative field indentification was erroneous. The unhw pattern is like that of *S. acis,* but lacks the unhw pale dot in the cell, and, although similar, the unhw pattern differs in many details; the blue up likewise differs from the grayish or brownish up coloration of *S. acis.* The specimen remained unique.

N. E. Kraucunas took a similar male on Isla Saona at sea level off the southeastern coast of the Republica Dominicana in 1984. This specimen, too, was misidentified at the outset but proved to be a male with the same characteristics as the Cordillera Central female. Schwartz took a second male comparable with the previous pair in 1984.

Recently David Spencer-Smith collected a male near Boca de Yuma. The specimen was taken approximately 200 feet from a cliff edge during later afternoon. Again a solitary specimen was seen.

Unquestionably we are dealing with an apparently rather rare hairstreak that has a broad elevational range on Hispaniola (the species is not known from Haiti but surely occurs there). In some ways, these hairstreaks, as noted above, resemble *S. acis* and in other characters *S. martialis* Herrich-Schäffer, which in the Antilles occurs on the Bahama Islands, Cuba, and the Isla de la Juventud, Jamaica, and the Cayman Islands (Riley 1975:102). Yet there is not complete agreement between either of these two taxa (or others) with the four newly collected specimens. Comparisons of the four specimens with a pair of *Th. bourkei,* in addition to further morphological analysis, indicate that the new hairstreak is not a member of the genus *Thereus.* The specimens represent a new species of *Strymon,* which we propose to call

Strymon monopeteinus, new species

Fig. 1-2, male holotype; Fig. 9, male genitalia

Male: Head, grayish brown posteriad, shading to pale orange on vertex and frons; orange on frons admixed with brown setae, especially ventrad, encircled by a U-shaped tawny patch which extends laterally to the ocelli; palpi white with elongated terminal segment admixed with blackish brown. Antennae blackish brown with white end segments; basal portion of the club clothed heavily in white, shading to blackish brown on club with terminal segments burnt orange. Thorax above, blackish brown clothed sparsely with long white setae; below, thorax and legs heavily clothed in grayish white. Abdomen above gray-brown with few elongated white setae on first three abdominal segments; below pale gray shading to buff at the end of the abdomen.

FW (forewing length 12-14 mm (N = 2); much of upfw and uphw bright blue (Pl. 25J10: all color designations from Maerz and Paul 1950); apical one-half of fw, as well as costal border and outer margin black, the black edging narrowed along lateral margin and tapering toward the fw anal angle; distal half upfw cell covered by a diffuse black ovate scent pad, its anterior margin obscured by the black costal border, its posterior edge sharply in contrast to the blue of the upfw; uphw grayish black overlaid with dull blue, lighter grayish black along costal and anal margins, this grayish blue rather broad as it extends into Sc + R_1-Rs; two hw tails, on Cu_1 and Cu_2: that on Cu_1 reduced, that on Cu_2 relatively long and filamentous, about 4 mm in length; anal lobe of uphw red (Pl. 5L10) and clearly set off from blue ground color by white; a few white scales basad to the rather distinct black border from Cu_1-Cu_2 to anal lobe; a somewhat semicircular black spot in Cu_1-Cu_2, capped by a few red scales in one male; a diffuse androconial patch extends from the hw cell basad along cubitus to anal margin, with the setae on the anal margin white and/or transparent.

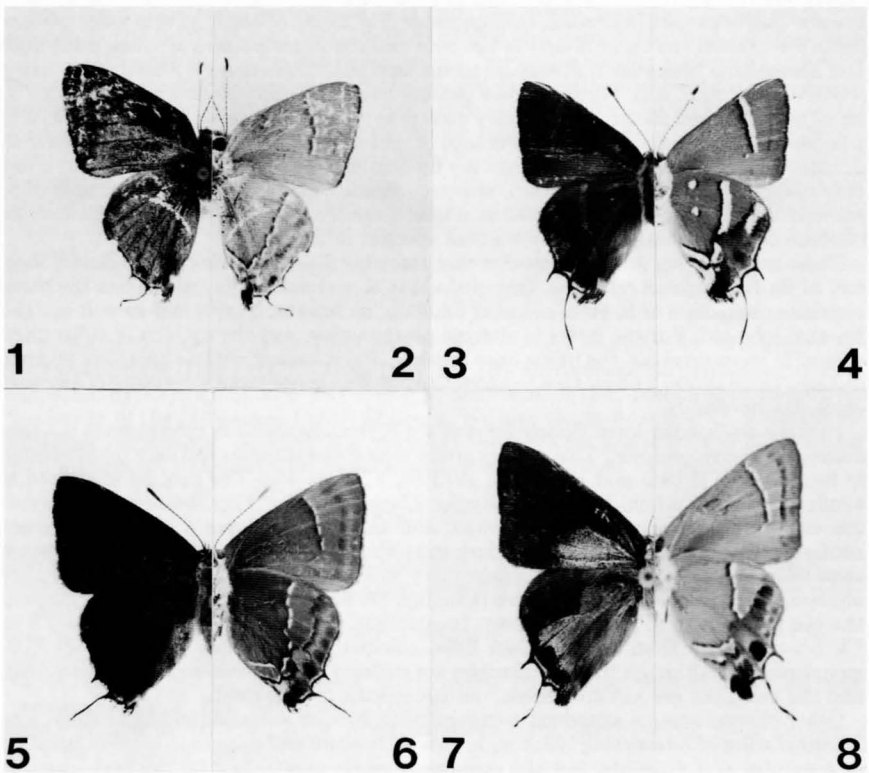
Un light gray (Pl. 47C6); unfw with a very diffuse pale grayish submarginal line between costal margin and Cu_1, and a darker (grayish, more or less regular and very slightly bowed) line between costal border and Cu_1, bordered outwardly by whitish, between costal border

and Cu_1; unhw pattern composed of a distinct straight dark gray postdiscal line from about midcosta to Cu_1, where the line angles sharply within Cu_1-Cu_2, and from Cu_2 continuing to about the midpoint of the anal margin; this postdiscal line is outlined distad in white throughout its entirety, not strongly contrasting with the ground color; a very diffuse secondary submarginal band leading to a large pale orange spot (Pl. 11L9) in Cu_1-Cu_2; this orange spot with a black dot abutting on a marginal white line (which begins in this space and continues across Cu_2-2A); hw anal lobe black on un, capped by a white bar, in turn surmounted by a dark gray bar in this space only; Cu_2-2A with a pair of transverse black bars (continuations of postdiscal and submarginal lines) confined to this space only and connecting the orange spot in Cu_1-Cu_2 and the black spot on the anal lobe. One male has a pale orange spot in 2A-3A, surmounting the black anal lobe.

Fringes forewing above, black shading to white and transparent; below blackish gray shading white and transparent. Hindwing fringes above gray shading to white with black admixed sparsely with white at anal angle; below, similar but admixed heavily with white along the anal margin.

Genitalia (Fig. 9) as illustrated. See discussion for comparative details.

Female: FW length 15 mm (N=1); upfw like males except that black areas more extensive



Figures 1-8: *Strymon monopeteinus,* new species. Holotype dorsal (1, photo no. 850514-13) and ventral (2, photo no. 850514-14) surfaces, REPUBLICA DOMINICANA: PROVINCIA DE MARIA TRINIDAD SANCHEZ: 1 km S Cruce de Rincón; *Strymon acis bartrami,* dorsal (3, photo no. 850514-15), ventral (4, photo no. 850514-16); *Thereus bourkei,* dorsal (5, photo no. 850827-1), ventral (6, 850827-2); *Strymon martialis,* dorsal (7, photo no. 850514-17), ventral (8, photo no. 850514-18).

along costal and outer margins and apically, so that a rough semicircle of blue, its diameter along the inner margin and its curvature extending to the posterior margin of the cell, is all that remains; uphw like males and tail on Cu_1 is about 1.5 mm, that on Cu_2 about 5 mm long; un ground color as in males and markings identical except that the diffuse submarginal gray band is accompanied marginally by a series of whitish blotches, forming a "line" between the submarginal band and the margin; hw fringes in both sexes are whitish.

HOLOTYPE male: REPUBLICA DOMINICANA: PROVINCIA DE MARIA TRINIDAD SANCHEZ: 1 km S Cruce de Rincón, s.l., 21,iii,1984, A. Schwartz; *ex colln.* A. Schwartz, now in Allyn Museum of Entomology, Florida State Museum.

PARATYPES: 1 male, 18.i.1984, AS collection, República Dominicana: Prov. de la Altagracia: Isla Saona, 3.5 km N Mano Juan, N. E. Kraukunas; 1 female, 20.vii.1983, A. Schwartz collection, República Dominicana: Prov. de la Vega: 6 km SSE Constanza, A. Schwartz. 1 male, 21.vii.1985, República Dominicana. Prov. de la Altagracia: Boca de Yuma, D. Spencer-Smith.

Comparisons: Using three criteria to differentiate *S. monopeteinus* from the 11 known Hispaniolan hairstreaks, none other has a combination of : 1) up blue, 2) unhw with lines rather than dots or line fragments, and 3) 2 tails. Although there is some resemblance in color and/or pattern between *S. monopeteinus* (Fig. 2) and *S. acis* (Fig. 6) in unhw pattern (both are lineate) the up of *S. acis* is not blue and the unhw pattern is much more bold and contrasting than that of *S. monopeteinus,* and in addition there is a distinctive unhw white cell dot in *S. acis. Nesiostrymon celidus* has the up iridescent blue, much like *S. monopeteinus,* but the un color is very pale gray (almost white) and the un pattern is a series of much fragmented lines. Perhaps *A. fidena* superficially looks most similar to *S. monopeteinus,* but that species has the up blue much paler (almost bluish gray), has only one tail, and the unhw pattern, although lineate, differs in details from that of *S. monopeteinus.* The presence of a red anal lobe is distinctive and occurs only, to such an obvious degree, among other Hispaniolan species, in *S. acis.*

There are two other Antillean species that resemble *S. monopeteinus* more closely than any of its Hispaniolan relatives. One of these is *S. martialis*; this species has the three requisite characters of *S. monopeteinus* (blue up, un lineate, 2 tails) and as well has the hw anal lobe red. But the latter is also red on the unhw, and the up blue is duller than that of *S. monopeteinus,* the unhw lines are bold, the submarginal line complete and not diffuse. There is also a black spot in uphw Cu_2-2A; this space lacks a marking of any sort on *S. monopeteinus.*

Perhaps the species most closely resembling *S. monopeteinus* in coloration is the rare Jamaican *Thereus bourkei.* This species is dull blue above in males and only faintly bluish in females (see Brown and Heineman 1972:Pl. V, Figs. 4-5). The pair we examined is similarly dull with a faint hint of bluish gray. *Thereus bourkei* (Figs. 3-4) is darker grayish tan on the un than is *S. monopeteinus,* and the un lines have a slightly different configuration. But the submarginal dark grayish line is diffuse in both species, rather than being complete, and there is a secondary submarginal line. In both species the hw angle lobe is red above and black below (although *Th. bourkei* has some red scaling capping the black anal lobe spot on the unhw). In addition, the unhw black spots in Cu_2-2A in *Th. bourkei* differ from the two black lines, alternating with white, in this space in *S. monopeteinus.* Although these similarities are striking, the differences are just as strong, and the two taxa are not congeneric nor conspecific (see beyond).

Other characteristics examined comparatively include antennal and head color. The antennal color of alternating blackish brown with white end segments is quite common in a number of Lycaenida, but the prominent white overscaling on the club basad is prominent in *S. monopeteinus* and characteristic of *S. acis* and *S. martialis* and exhibited sparsely in *E. angelia.* The antennal club of *Th. bourkei* and *S. martialis* does not exhibit the white overscaling of the club basad. The head color of *S. monopeteinus* and *S. acis* is similar, with the orange U-shaped patch admixed with brown setae on the frons encircled ventrad with tawny, but in *S. acis* the orange is paler and the number of brown setae present sparser. In *S. martialis* the vertex is pale orange, but the frons is tawny and

admixed sparsely with blackish brown. *Thereus bourkei* exhibits buff on the vertex and frons, shading to tawny laterally.

Comparative examination was also made of the male genitalia. Clench (1955) characterized the aedeagus of the genus *Strymon* with a single cornutus. In the species examined, a single cornutus (single spined) was found in *S. acis bartrami* and *S. martialis.* (Figs. 10 and 12). In specimens of *S. melinus* and *S. columella modestus,* no cornutus was evident, but a cornutus (double spined) was observed in *S. monopeteinus* (Fig. 9). The aedeagus of *Th. bourkei* is serrate and moderately sclerotized distad without a cornutus. Sclerotization of the tegumen and uncus is somewhat variable within the species examined, but in *Th. bourkei* there is a very prominent dorsal vincular process (Fig. 11). Valvae in *Th. bourkei* are somewhat broader rather than the more tapered structures found in typical *Strymon.* Saccus variable, somewhat foreshortened in *Th. bourkei* and *S. monopeteinus* and somewhat longer in *S. acis.* The coremata are quite variable with these structures present in *S. melinus* and *S. a. bartrami,* but absent in *S. monopeteinus, S. martialis,* and *S. c. modestus.* In *Th. bourkei,* whereas the coremata as such are absent, the intersegmental membrane contains a brush of dense scales, possibly pheromonal in function. Similar evidence of this intersegmental brush, although not so pronounced nor so dense, was found in *S. martialis, S. monopeteinus,* and *S. columella.*

Etymology: The name *monopeteinus* is from the Greek, meaning "flying alone," in allusion to the fact that only one specimen of this new species has been taken at each locality. Although the generic name *Strymon* is, by its -on ending, apparently of neuter gender, and thus all adjectival trivial names should end in -ium to conform to this apparent neuter condition, Berry (1958:655) gives the gender as masculine. Therefore, *monopeteinus* is adjectival and masculine. Also, other names applied to *Strymon* (and its companion genera such as *Nesiostrymon, Electrostrymon,* etc.) must be made to agree in gender (masculine). When making these changes, care should be taken that the specific or subspecific name is used adjectivally and not as an appositional noun (i.e., *angelia*), since in the latter circumstance, the noun maintains its gender and must *not* be made to agree in gender with *Strymon.*

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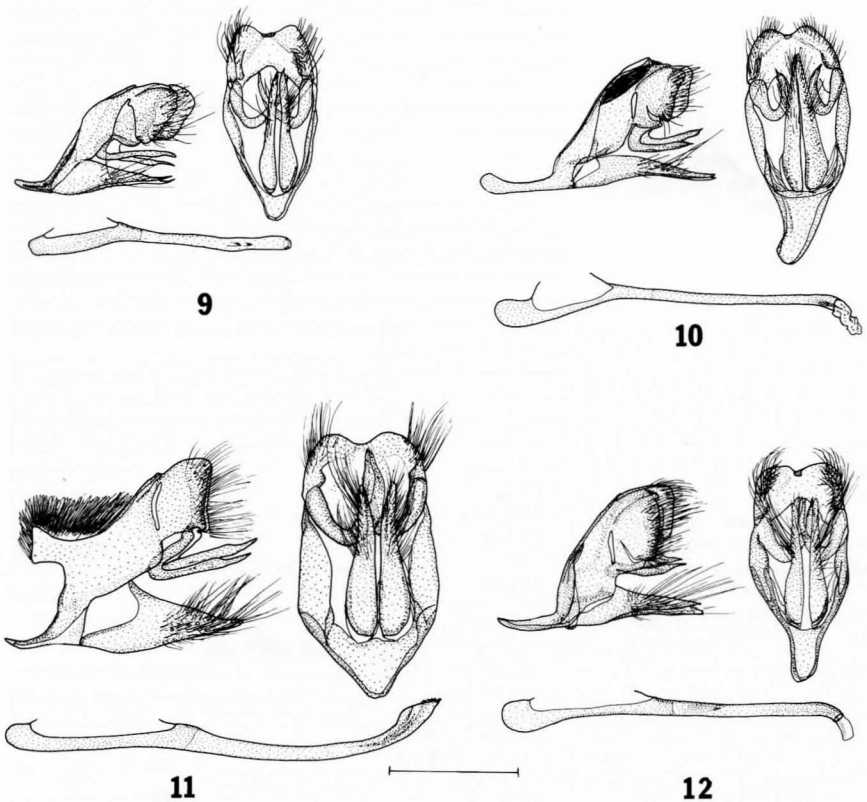

Figures 9-12, genitalia: 9, *Strymon monopeteinus,* new species (vial no. M-6755); 10, *Strymon acis bartrami* (vial no. M-6782); 11, *Thereus bourkei* (vial no. M-6756); and 12, *Strymon martialis* (vial no. M-6785).

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