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ATRYTONE SINGULARIS HERRICH-SCHÄFFER AND THE SUBSPECIES INSOLATA BUTLER (LEPIDOPTERA, RHOPALOCERA)

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In the year 1865 Herrich-Schäffer described a species of Hesperiidæ from a single male specimen collected by Dr. Juan Gundlach in the vicinity of Guantanamo, Oriente Province, at the eastern end of Cuba, and gave it the name *Goniloba singularis*. Apparently Herrich-Schäffer returned this specimen, the type of the species, to Dr. Gundlach as it is said now to be in the Gundlach collection in Havana, Cuba.

Since the publication of Herrich-Schäffer's description so many years ago, all of the references to his *singularis* in published literature known to us are based on the single specimen collected by Gundlach, and no further captures of this insect have been reported.

Dr. S. C. Bruner, Chief of Department, Departamento Fitopatología y Entomología, Estacion Experimental Agronomica, Santiago de las Vegas, Cuba, has recently sent to us four specimens, two of each sex, of *singularis* which were collected at Siboney by Mr. Pastor Anayo, of Santiago de Cuba. Siboney is located on the southern coast of Oriente Province, southeast of Santiago de Cuba and southwest of Guantanamo, the type locality of *singularis*. The specimens were captured on the following dates, one male, June 20, 1943; one male, August 11, 1946; one female, May 9, 1945; one female, June 9, 1946.

Dr. Bruner has generously donated one pair of the specimens to the American Museum of Natural History, and the other pair is being returned to him. In addition to the pair of specimens donated by Dr. Bruner there is another female specimen in the collection of the Museum which bears the label "Cuba Schaus coll." which was

presented to the Museum, among other material, by Dr. William Schaus many years ago. According to Bates, Dr. Schaus collected specimens of insects in the provinces of Matanzas and Oriente.

Gundlach (1881) briefly redescribes *singularis* and says that he collected only one specimen in the vicinity of Guantanamo and that there was nothing known of its origin or its habits. He gives the expanse across the wings as 40 mm.

Ramsden (Skinner and Ramsden, 1923) says that he saw the type of *singularis* in the Gundlach collection in Havana and compares it with *cornelius* Latreille, a related Cuban species.

Williams (1931) does not mention *singularis* in his paper on the Hesperiidæ taken by Mr. Orazio Querci and his family during their 11 months' collecting in Cuba either among the species that were collected or in the list of those not collected. With headquarters at Cristo, near Santiago de Cuba, most of the collecting by Mr. Querci and his family was done in the foothills of the Sierra Maestra Mountains which lie along the southern side of Oriente Province at the eastern end of Cuba. Williams says that Mr. Querci and his family were in the field every day. Despite this intensive collecting no specimens of *singularis* were taken, although the general region in which the Querci family worked is that from which have come all of the known specimens of *singularis* bearing definite locality data.

Bates, in his comprehensive paper on the butterflies of Cuba, places *singularis* among the doubtful species.

In view of the absence of published records of the capture of specimens of *sin-*

gularis since the original type specimen was taken and the fact that the four specimens sent by Dr. Bruner were collected over a period of nearly three years, it is indicated that the species is of rare occurrence or very locally distributed, or perhaps both.

The unspined mid-tibiae and the general superficial characteristics seem to indicate that *singularis* is closely allied to that section of the genus *Atrytone* in which the primaries of the males have an oblique stigma of similar form but not so greatly developed.

In the original description Herrich-Schäffer briefly compares *singularis* with "*G. lineosa* m. aus Brasilien" but we can find no published description by Herrich-Schäffer of a species of Hesperidae by that name, and we assume that it is a *nomen nudum*.

In view of the brief original description of *singularis* and the fact that the female has not been described at all, we give below a detailed description of both sexes.

Atrytone singularis Herrich-Schäffer

Figure 1

Goniloba singularis HERRICH-SCHÄFFER, 1865, p. 55. Cuba.

Pamphila singularis, KIRBY, 1871, p. 605.

Goniloba singularis, GUNDLACH, 1881, p. 168.

Pamphila singularis, GUNDLACH, 1881a, p. 113.

Goniloba singularis, SKINNER AND RAMSDEN, 1923, p. 318.

Goniloba singularis, BATES, 1935, p. 238.

MALE

The upper side of the primaries is dark brown with a ferruginous sheen. The basal area is overscaled with rusty fulvous. The very broad stigma is dark grayish and composed of two segments, the upper one filling the base of interspace 2 and the lower one extending across interspace 1 to vein 1. These two segments are outwardly bordered by a broad area of modified scales which change in color according to the angle of light in which they are viewed; thus they may appear to be black, or burnished coppery, or metallic green. The fringes are brownish.

The secondaries are dark brown with an overscaling of rusty fulvous except in the costal area and along the outer margin.

The overscaling varies among individuals in its intensity and the area which it covers. The fringes are brown with some fulvous scales in the lower part and at the anal angle.

The under side of the primaries is dark brown with an overscaling of rusty fulvous along the costal margin and on the apical half of the wings. The secondaries are entirely overscaled with rusty fulvous.

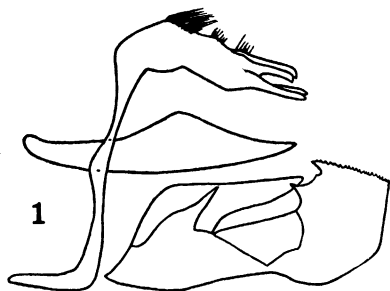


Fig. 1. Male genitalia of *Atrytone singularis* Herrich-Schäffer. Cuba.

The upper side of the head is black with yellow scales in front of the antennae, at the extreme back of the head, and surrounding the third joint of the palpi. The top of the thorax and the abdomen is fulvous and rusty fulvous. On the under side the palpi are yellowish and the pectus is orange fulvous. The thorax and abdomen are fulvous and rusty fulvous. The legs are rusty fulvous. The hind tibiae have two pairs of spurs, the upper pair much smaller than the lower pair. The mid-tibiae are not spined (as mentioned by Herrich-Schäffer). The antennae are about half as long, or a little more, than the costal margin of the wings; the club is moderately stout with an apiculus which appears to be equal to a trifle more than the diameter of the club. The antennae are black on the upper side, and on the under side there is a narrow fulvous line. The club is entirely fulvous; the apiculus is red.

FEMALE

No two of the three females before us are alike, but on the upper side the ground color seems to be a shade paler than that

of the males. The rusty fulvous overscaling is of the same shade and covers about the same area as that of the males. One individual has two slightly yellowish hyaline discal spots on the primaries, an elongate one in interspace 2 just under the end of the cell, and the other a smaller one lying near the base of interspace 3. There is a barely noticeable indication of a subapical spot in interspace 6. Another individual has the two spots in the same positions, but the lower one is very small and the upper one so minute that it is just discernible. The third individual appears to have no spots at all, a minute paler place in the ground color being the only trace of the spot in interspace 2.

On the under side of the wings the rusty fulvous overscaling appears to be heavier and more extensive than that of the males. As on the upper side, the three females differ from each other on the under side. The first individual mentioned has the two discal spots of the primaries slightly larger than on the upper side, but the subapical spot is very small. On the secondaries there is a hazy indication of two small discal spots, one in interspace 2 and the other in interspace 3. The second individual has the two discal spots of the upper side and they are slightly larger. In the third individual the spot in interspace 2, only indicated on the upper side, is small but plainly present on the under side, and there is a very minute spot in interspace 3.

LENGTH OF ONE PRIMARY WING: Male, 17 mm.; female, 19 mm.

Plötz (1884, p. 284) placed "*singularis* HS. i. l." as a synonym of *Thymelicus waco* Edwards, and Godman (1907, p. 146) erroneously treated this manuscript name as *Goniloba singularis* Herrich-Schäffer. Draudt (1923, p. 928, pl. 180d) followed Godman's error. *Thymelicus singularis* Plötz has been placed as a synonym of *Copaodes aurantiaca* Hewitson by other authors.

Atrytone singularis* subspecies *insolata
Butler

Pamphila insolata BUTLER, 1878, p. 483. Jamaica.

Hesperia aurinia PLÖTZ, 1883, p. 195. Jamaica.

Serdis aurinia, LONGSTAFF, 1908, p. 50.

Limochores aurinia, DRAUDT, 1924, p. 935, pl. 181k.

Limochores insolita, KAYE, 1926, pp. 459, 498.

Limochores insolita, KAYE, 1931, p. 536, pl. 39, fig. 11.

Limochores insolita, AVINOFF AND SHOUMATOFF, 1946, p. 293.

As there are some superficial differences in specimens from Jamaica and Hispaniola we retain the name *insolata* to represent the subspecies of *singularis* inhabiting those islands. The overscaling on both sides of the wings of both sexes of *insolata* is of a lighter shade of fulvous, and in some individuals, especially those from Hispaniola, it is particularly bright. On the under side of the secondaries occasional individuals of each sex show traces of a curved discal band of small pale spots which vary in distinctness.

On the under side of the primaries of the males the stigma of the upper side is represented by a prominent black area which is outwardly bordered by accumulations of pale fulvous scales forming spots in interspaces 1 and 2, and a small spot in the base of interspace 3. These three spots appear to form a discal band which is not present on the upper side of the wings, and they are not present on the under side of the wings of the two males of *singularis* from Cuba.

The discal spots in interspaces 2 and 3 of the upper side of the primaries of the females average larger than those of the females from Cuba which we have before us. One specimen from Haiti has the two discal spots more developed than usual, and in addition to them there is another small but distinct semihyaline spot in interspace 1 obliquely inward of the large spot in interspace 2. This individual also has two elongate subapical spots, the lower slightly larger than the upper one. The three females from Jamaica all show a small subapical spot, and 24 of the 26 females from Hispaniola show from one to two subapical spots which individually vary in size and distinctness. The other two females entirely lack them. On the under side of the wings the subapical spots are usually smaller and sometimes less distinct than on the upper side.

The figure of the female from Jamaica

published by Kaye (1931) shows two well-developed discal spots on the primaries but no trace of subapical spots on either the upper or the under side.

Butler says in his paper that the Lepidoptera listed therein were collected at or near Kingston, Jamaica; thus the type of his *insolata* came from that region.

Longstaff says that he collected two specimens, one of each sex, of *insolata* at the foot of Park Mount, Port Antonio, Jamaica. He identified them at first as *Serdis aurinia* Plötz, but in a footnote says that Mr. H. H. Druce found Butler's type of *insolata* (labeled "*Pamphila insolita*") in the British Museum and that a comparison with it showed his specimens to be identical, Butler's name having priority.

The fact that the type specimen is labeled "*insolita*" accounts for the name's having appeared in literature in that spelling; however, in the published description it is spelled "*insolata*."

Avinoff and Shoumatoff mention various localities for their captures of *insolata* in the parishes of Portland, St. Thomas, Clarendon, Manchester, Trelawney, and Westmoreland, Jamaica. They say that the species occurs in open arid places and is rare.

We also have specimens from the parishes of St. James and St. Ann. These various parishes are located in the three counties comprising Jamaica: Portland, Kingston, and St. Thomas parishes are in Surrey County at the eastern end of the island; Clarendon, Manchester, and St. Ann parishes are in Middlesex County in the center of the island; Westmoreland, Trelawney, and St. James parishes are in Cornwall County at the western end of the island.

The definite dates of capture of the Jamaican specimens we have include the months of February, March, April, and July.

From the foregoing records it appears that *insolata* is generally distributed over the entire island of Jamaica, but it does not seem to occur in abundance in any of the localities where it has been taken.

In Hispaniola *insolata* appears to have a wide distribution and to occur more abundantly than it does in Jamaica. We have before us a series of 73 specimens from Haiti and nine from the Dominican Republic. In Haiti the localities from which the specimens came are: Aux Cayes, Bize-ton, Carrefour, Fond Parisien, and Petionville; and in the Dominican Republic from Sanchez, Samana, and Puerto Plata. The dates of capture include each month from January to June inclusive, September, and December, although not all are in the same year. Thus it would seem that *insolata* is on the wing in this island throughout most, if not all, of the year.

The length of one primary wing for the Jamaican specimens is: male, 18 mm.; female, 19–20 mm.; and for the Hispaniolan specimens: male, 16–20 mm.; female, 19–21 mm. The male genitalia of *insolata* do not materially differ from those of *singularis*.

In this paper where reference is made to the venation by number it follows the English system of numbering each vein from the lowest one upward.

All of the specimens that we have described in this paper, except the two from Cuba being returned to Dr. Bruner, are in the collection of the American Museum of Natural History.

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