

ENTOMOLOGY.—*Descriptions of two new species of butterflies from tropical America.*¹ W. SCHAUS, U. S. National Museum.

Recently the National Museum has received two new butterflies, from the tropics of the new world, which are of more than usual interest. It is desirable that names for these be made available and for this reason the following descriptions are presented.

Anaea suprema Schaus, sp. nov.

Fore wings arched and falcate, the outer margin deeply incurved. Hind wings with the outer margin rounded, the anal angle slightly produced.

Male.—Palpi and head reddish brown irrorated with white. Collar and thorax olive-brown. Wings black faintly tinged with deep blue. Fore wings: a scarlet fascia from base, filling the basal fourth of costa and the basal third of inner margin, narrowing towards apex, its anterior edge following below subcostal to near termen, its hind edge somewhat dentate, especially between veins 5 and 8; the apex and terminal line reddish brown; a black streak on discocellular. Hind wings with the outer margin rather broadly reddish brown. Wings below dark reddish brown glossed with iridescent lilacine and mottled with yellowish striae. Fore wings: a transverse dark shade in cell, and a similar smaller shade on discocellular; a postmedial fuscous shade, vertical to vein 5, outcurved to vein 3, vertical to vein 2 and inbent to inner margin; an ochreous line from apex joining the postmedial at vein 4 and edging it to inner margin; an oblique dark shade on costa beyond postmedial. Hind wings: a dark transverse shade in cell; a dark median streak below costa, and a fine line on discocellular; an irregular postmedial fuscous line; a fuscous line from costa before apex to inner margin just above anal angle.

Female.—Wings black. Fore wings with the fascia broader and shorter, orange-red, crossed by a thick black line on discocellular, ending somewhat beyond, followed by a large irregular and elongated deep yellow spot between veins 5 and 7; a similar upright spot from vein 2 to above vein 3, and a streak above submedian; marginal triangular orange-red spots, their base resting on a terminal reddish brown line. Hind wings with large postmedial deep yellow spots not reaching inner margin, the black beyond them forming triangular spots, their apices touching black marginal spots and enclosing large subterminal brownish yellow diamond-shaped spots; a terminal reddish brown line. Wings below to postmedial line maroon striated with yellow, beyond postmedial ochreous-yellow striated with maroon; the spots and lines as in male, but better defined; fore wings with a darker triangular space before apex; an incurved subterminal maroon shade from

¹ Received July 21, 1920.

apex to submedian; hind wings with a subterminal maroon line shaded with fuscous. The gloss on underside more of a steel color.

Expanse: male 65 mm.; female 74 mm.

Habitat: Serra da Mantiqueira, Brazil.

Type.—Cat. no. 23,349, U. S. National Museum.

Unlike any described species.

Actinote calderoni Schaus, sp. nov.

Male.—Head, collar and thorax black, some white scaling on vertex; a silvery shade on tegulae. Body whitish. Wings thinly scaled, grayish white, the veins fuscous brown. Fore wings with short terminal gray streaks on interspaces, longer above vein 5 and 6; the interspaces between veins 8 and 11 suffused with gray. Hind wings with gray streaks on interspaces from near cell to termen; a short streak in cell before discocellular. Wings below similar; a small ochreous spot at base of hind wing.

Expanse: 43 mm.

Habitat: Ateos, Salvador.

Type.—Cat. no. 23,348, U. S. National Museum.

Received from Mr. Calderon, head of the Agricultural Laboratory in Salvador, in whose honor I take great pleasure in naming this species.

THERMOCHEMISTRY.—*The thermochemistry of ionization of vapors of certain compounds.*¹ PAUL D. FOOTE and F. L. MOHLER, Bureau of Standards.

Two general types of ionization of compound molecules in the gaseous phase are known. In one mode of ionization the molecule preserves its general structure, simply losing a negative charge and becoming a positive ion. It seems probable that materials capable of ionizing in this manner should possess a characteristic spectrum, as for example, carbon monoxide.

In the second type of ionization the molecule is dissociated into a positive and a negative ion. Materials which are ionized in this manner probably do not possess characteristic spectra in the ordinary sense. Radiation of a single frequency, usually in the extreme ultraviolet, *may be* emitted, however, when the two ions recombine to form the neutral molecule. We have found evidence that hydrogen chloride exhibits this form of ionization,² being without doubt dissociated on electronic impact of 14.0 volts into a hydrogen nucleus and a negative chlorine ion.

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² FOOTE and MOHLER. Journ. Amer. Chem. Soc. September, 1920.