

10mm. Forewing more rounded with convex distal margin. Ground color of both dorsal wing surfaces paler brown; forewing with white fringe elements at distal margins of cells 1A+2A and  $Cu_1$ , dorsal hindwing with pale grey-brown at margin, dark red-brown spots at submargin (very faint in some specimens).

**Types.**— *Holotype male*: ECUADOR.— *Napo Prov.*: Río Napo, Limoncocha, 240m, 3 Oct 1973 (S. S. Nicolay) (diss. # JPWH 53); in the USNM.

*Allotype female*: PERU.— *Madre de Dios*: Parque Nacional del Manu, Pakitza, 12°07'S 70°58'W, 400m, 2 Oct 1991 (O. Mielke); in the USNM.

*Paratypes*: PERU.— same locality data as AT, 1 ♂, 4 ♀: 15 Oct 1991, 1 ♂ (G. Lamas); 15 Nov 1990, 1 ♀ (W. Rowe); 2 Oct 1991, 1 ♀ (O. Mielke); 10 Oct 1991, 1 ♀ (M. Casagrande); 5 Oct 1991, 1 ♀ (O. Mielke); all in the USNM. *Amazonas*: Río Huallaga, Achinamiza, 27 Aug 1927, 1 ♀ (Bassler) (AMNH). ECUADOR.— *Napo Prov.*: km 20 Tena-Puyo rd., Apuya, 600m, 30 Aug 93, 1 ♀ (J. P. W. Hall); km 12 Tena-Puyo rd., Finca San Carlo, 600m, 19 Feb 95, 1 ♀ (K. R. Willmott); both in the coll. of JHKW. *Sucumbios Prov.*: 75 km ESE of Coca, Garza Cocha-Añangu, 17 Nov 1996, 1 ♂ (P. J. DeVries); in the coll. of PJD. BRAZIL.— *Pará*: Pará, 2 ♀ (H. W. Bates); Amazon, 1 ♂ (diss. # 4422); all in the BMNH.

**Etymology.**— This species is named for my life-long friend Keith R. Willmott, who has been a constant field companion around the globe and an indefatigable co-author on many projects including "The Butterflies of Ecuador".

**Diagnosis.**— *S. willmotti* n. sp. differs most conspicuously from *S. spicata* by having a paler ventral surface and yellow-orange instead of black and white legs but is additionally separated as outlined in that species account; and from *S. acanthoides* by having a more pointed forewing (in the male) and only one elongate silver streak in the apex of the ventral forewing instead of two. *S. willmotti*, especially the female, is probably most similar to *S. harveyi* n. sp. (described below), which has two ventral forewing apical silver streaks that are not as prominent as in *S. acanthoides*, the lower one being divided through the middle, a character that is exaggerated in the female; *S. willmotti* never has silver immediately distal to the black spot in cell  $M_2$ . *S. willmotti* additionally differs from *S. harveyi* by having a more pointed forewing (in the male), a smooth postdiscal row of black spots on the ventral forewing that is not enlarged in cell  $M_3$ , and less grainy (pale brown scales over brown) background coloration on both ventral wing surfaces.

**Discussion.**— This species is currently known from Ecuador, Peru and Brazil (Amazon) but appears to be more common in the western Amazon. It is uncommon to rare in primary forest habitats below 600m and I have only encountered solitary females (also by far the most commonly represented sex in collections) low to the ground in lightgaps and along forest trails during the afternoon.

It is worth noting here that there are two female specimens from Costa Rica, in the collections of PJD (figured in DeVries (1997) as *S. spicata*) and the ZMHU, that have ventral wing patterns somewhat intermediate between *S. willmotti* and *S. turrialbensis*. They may well represent an undescribed taxon, but more material, including males, is needed to come to any firmer conclusions.

*Sarota acanthoides* (Herrich-Schäffer, [1853])

Fig. 13a-d; 32

*Nymphidium acanthoides* Herrich-Schäffer, [1853], *Samml. aussereurop. Schmett.* 1:55, pl. 13, fig. 49-50. TL: Surinam. Holotype male, Staatliches Museum für Naturkunde, Stuttgart (SMNS); type photograph [Examined courtesy of G. Lamas].

**Identification and taxonomy:** Average FW length 11mm. Because of its relatively pale ventral surface, *S. acanthoides* superfi-

cially resembles *S. willmotti* n. sp. (described above) but it differs most conspicuously by having two prominent proximally directed silver streaks in the apex of the ventral forewing. However, its rounded wing shape and overall ventral patterning place it closest to *S. harveyi* n. sp. (described below). It differs from that species most conspicuously on the ventral surface by having more orange-brown coloration and thus less grainy (pale brown scales over brown) background coloration and two prominent, unbroken proximally directed silver streaks in the apex of the forewing. Interestingly, *S. acanthoides* is the only described species (at least in the male) outside the "chrysus group" to have orange-brown tips to the antennal clubs. **Biology:** Brévignon and Gallard (1998) report finding this species in French Guiana on hilltops from 1000-1200h then later in flat forest from 1300-1400h.

**Distribution:** Venezuela to Peru, Brazil (Amazon, Mato Grosso), Guianas. Most specimens in collections originate from Brazil (central and lower Amazon, Mato Grosso) and the Guianas, those from the western Amazon being very rare.

*Sarota harveyi* Hall, new sp.

Fig. 14a-d; 33

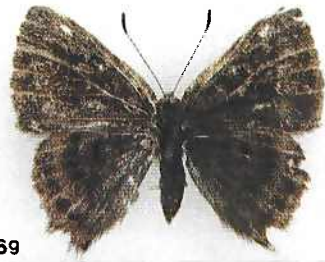
**Description.**— **MALE:** forewing length 11mm. Forewing costal and distal margins convex; hindwing apex and tornus produced into small points, three roughly equally sized tails at middle of distal margin. *Dorsal surface:* ground color of both wings brown; faint, darker brown discal, postdiscal and submarginal markings on both wings; fringe brown on forewing except for some white scaling at margin of cell 1A+2A, white then dark brown on hindwing. *Ventral surface:* forewing ground color brown scattered with pale brown scales, paler at anal margin; black line surrounded by orange-brown with silver streak above and silver distally at discal cell end and towards cell end with a vertical black line, that is surrounded by some orange-brown and has silver distally in cell  $Cu_2$ , in cells below; small black spot towards base of discal cell surrounded by triangle of orange-brown, that joins to middle cell marking at upper edge of cell, with silver distally and proximally and black square in cell below, orange-brown surrounds base of costal edge of discal cell, thin line of silver at base of costa; postdiscal line of black spots surrounded by some orange-brown extends from cell  $M_3$  to cell 1A+2A curving slightly outwards in upper half and enlarged in cell  $M_3$ , a small black spot surrounded by orange-brown with silver streak distally toward base of cell  $R_3$ ; broken, postmedial silver line edged proximally with black is largely black in cell 1A+2A, has a complete proximally directed silver streak in cell  $M_1$ , and one in cell  $M_2$  that is thinned medially and almost divided in two; remainder of costa and submargin orange-brown, margin dark yellow-orange, thin submarginal silver line extends from apex to vein 1A+2A; fringe brown except for some white scaling at margin of cell 1A+2A. Hindwing ground color brown scattered with pale brown scales; orange-brown band at base lined distally and proximally by silver contains one small black spot towards costa, a small silver spot at middle; postdiscal band of black spots surrounded by some orange-brown extends from costa, curving inwards to vein  $M_3$ , kinking sharply inwards in cells  $Cu_1$  and  $Cu_2$ , then continuing to anal margin, kinking inwards below vein 1A+2A, some disjunct silver proximally at costa, discal cell end and towards anal margin; black mark surrounded by orange-brown at discal cell end and in middle of discal cell with silver inbetween, similarly marked band extends below latter silver patch to anal margin, and above and below medial discal mark to the costal and anal margins respectively; uneven, slightly broken, postmedial silver line with thin layer of black scaling distally curves sharply inwards at costal and anal margins and thins in cells  $M_3$  and  $M_2$ ; orange-brown at submargin extends from apex to tornus and has a thin silver line distally below vein  $M_1$ ; margin and tails between tornus and vein

Fig. 8-15. 8. *S. chocoensis* Hall n. sp., allotype female, Río Tanti, W. Ecuador [JHKW]: c) DS; d) VS. 9. *S. turrialbensis*, holotype male, Turrialba, Costa Rica [USNM]: a) DS; b) VS. 10. *S. craspedodontia*, male, Xcan, Quintana Roo, Mexico [FSCA]: a) DS; b) VS. Holotype female, Presidio, Mexico [USNM]: c) DS; d) VS. 11. *S. spicata*, Lectotype male, Pebas, Peru [ZMHU]: a) DS; b) VS. Female, Cotundo, E. Ecuador [USNM]: c) DS; d) VS. 12. *S. willmotti* Hall n. sp., holotype male, Limoncocha, E. Ecuador [USNM]: a) DS; b) VS. Allotype female, Pakitza, Peru [USNM]: c) DS; d) VS. 13. *S. acanthoides*, male, Diamantino, S. Brazil (MaGr) [USNM]: a) DS; b) VS. Female, Pará, Brazil (Pa) [BMNH]: c) DS; d) VS. 14. *S. harveyi* Hall n. sp., holotype male, Diamantino, S. Brazil (MaGr) [USNM]: a) DS; b) VS. Allotype female, nr. Caucaalandia, S. W. Brazil (Ron) [USNM]: c) DS; d) VS. 15. *S. psaros psaros*, male, Potrerillos, Panama [USNM]: a) DS; b) VS. Female, Cerro Campana, Panama [USNM]: c) DS; d) VS. *S. psaros albidisca*, holotype female, Chanchamayo, Peru [BMNH]: e) DS; f) VS. *S. psaros psaronius*, male, E. Brazil (Ba) [ZMHU]: g) DS; h) VS. Syntype female, Leopoldina, S. E. Brazil (MiGe) [ZMHU]: i) DS; j) VS.





16a



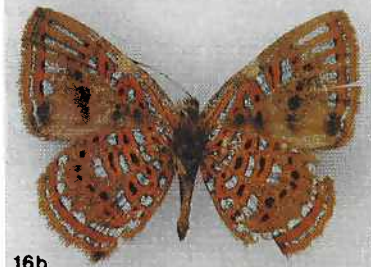
16g



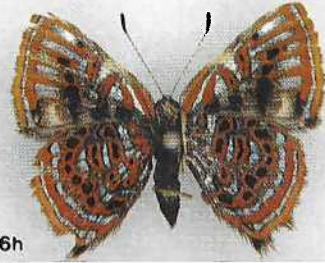
18a



20a



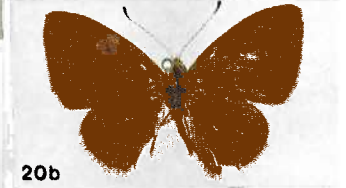
16b



16h



18b



20b



16c



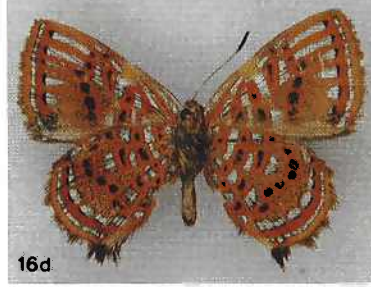
17a



18c



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16d



17c



18d



20d



16e



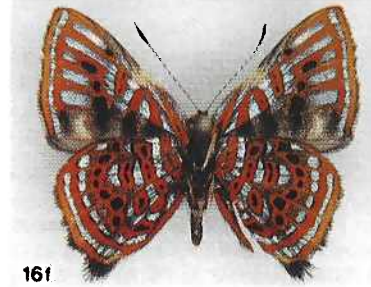
17d



18e



20e



16f



17e



19a



21a

21b



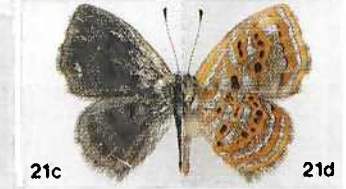
16g



17f



19b



21c

21d



16h



17g



19c



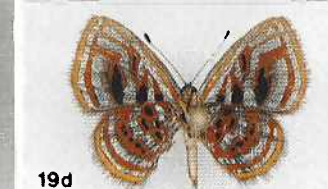
21e



16i



17h



19d



21f

