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NOTES ON THE SYSTEMATIC STATUS AND DISTRIBUTION OF THE NEOTROPICAL BUTTERFLY *ANAEOMORPHA SPLENDIDA* ROTHSCHILD, 1894 (LEPIDOPTERA: CHARAXIDAE)*

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Abstract

The distribution, taxonomy and systematic status of the Charaxid Anaeomorpha splendida Rothschild, 1894 is reviewed. Data from specimens deposited in collections are reviewed.

Key Words: Anaeini, female, Nomenclature, Palla, Preponini, Polygrapha (= Pseudocharaxes), Taxonomy, Systematic

NOTAS SOBRE EL ESTADO SISTEMÁTICO Y LA DISTRIBUCIÓN DE LA MARIPOSA NEOTROPICAL *ANAEOMORPHA SPLENDIDA* ROTHSCHILD, 1894 (LEPIDOPTERA: CHARAXIDAE)

Resumen

La distribución, taxonomía y estatus sistemático de la especie Anaeomorpha splendida Rothschild es revisado y revela su relación más cercana a la tribu Anaeini que a Preponini. Se revisan datos de ejemplares depositados en colecciones.

Palabras clave: Anaeini, hembra, Nomenclatura, Palla, Preponini, Polygrapha (= Pseudocharaxes), Taxonomía, Sistemática

INTRODUCTION

Anaeomorpha splendida (Fig. 1-2) was described by the Hon. Walter ROTHSCHILD in 1894 from a male caught by Maxwell Stuart, a English naturalist well known for his Lepidopteran material obtained between the area of Yurimaguas and Iquitos, Peru (LAMAS, 1980). The type locality is the Cachiyacu River, South of Yurimaguas, but erroneously misspelled by subsequent authors as the "Cachyaco River"(FRUHSTORFER, 1905, 1916; STICHEL, 1939; RACHELI & RACHELI, 2001). Two years later the type deposited in the Natural History Museum collection of London, England (**NHMUK**) was figured by ROTHSCHILD (1896). The genus and species were recognized as valid names by HEMMING (1967: 41) in his work on the generic names of the butterflies. In 1928 Wilhelm NIEPELT described the subspecies ***columbiana*** (Fig. 3-4) on the basis of two males taken in Mocoa, southeastern Colombia in October 1927, but the specimens represent only small variations from the nominal species and the name was synonimized by SALAZAR (1999). Another new subspecies ***A. splendida esmeralda*** Attal & Büche, 2008 (Fig. 5-6) was described on the basis of material taken by local collectors in

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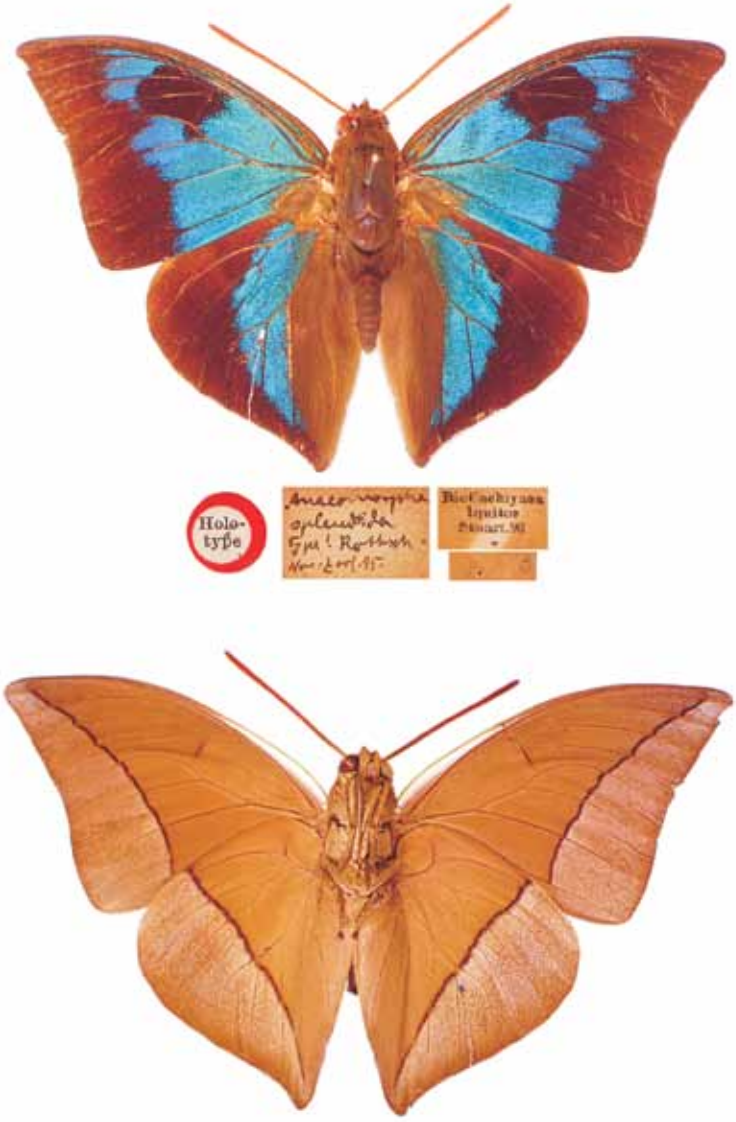
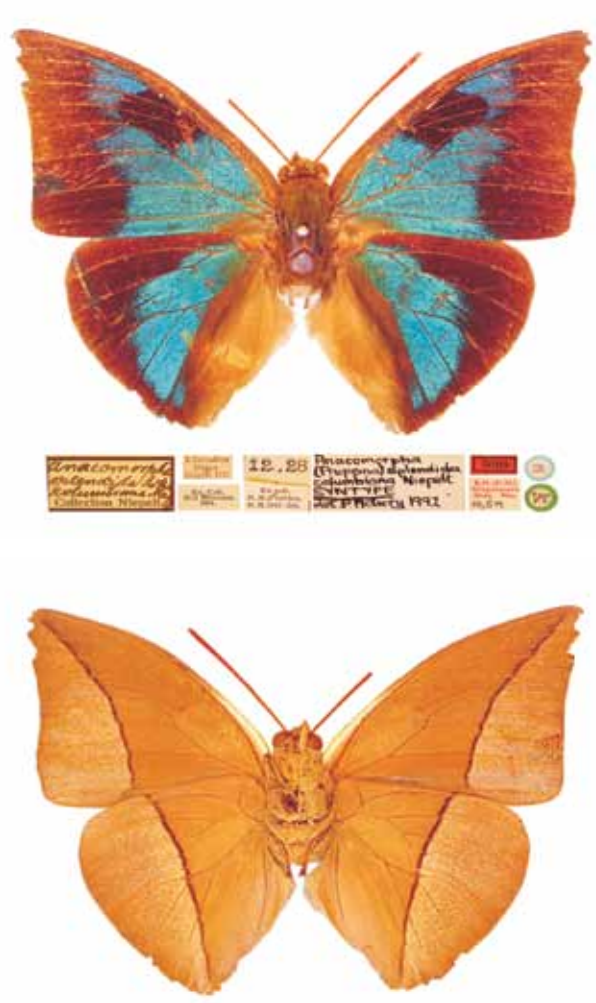
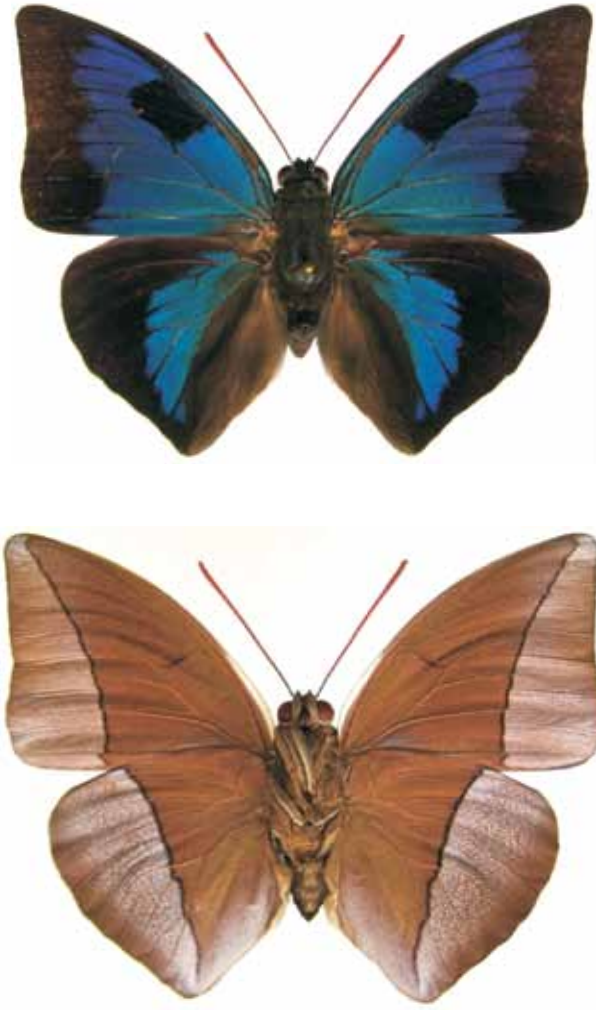
Atalaya, Ucayali, Southern Peru and represent a distinct race. *A. splendida* was cited again by FRUHSTORFER and RÖBER (1916), and recently illustrated in general books on butterflies of the world (LEWIS, 1975: 33; SMART, 1976: 314-315; FRUHSTORFER, 1924: 103e; D`ABRERA, 1987: 622, and 2001: 331).The focus of this paper is to provide information on *A. splendida* related with its distribution, taxonomy and new relationships using contributions on phylogeny of Neotropical butterflies particularly Charaxidae systematics.



Figs. 1-2. Holotype of ***Anaeomorpha splendida*** Rothsch., in dorsal and ventral view (BM)



Figs 3-4. Syntype male of ***A. splendida columbiana*** Niepelt in dorsal and ventral view (BM)



Figs. 5-6. Paratype male of ***A. splendida esmeralda*** Attal & Büche (col. Attal, Paris)

RESOURCES AND METHODS

Specimen records were collected from public and private collections in Europe, South America and the U.S. to obtain distributional data, and locate type specimens. Additional material was examined from photographs and preserved specimens for morphological features and male genitalia were dissected according to standard procedures. Adults were photographed with a Canon Powershot digital camera A480. (10.0 megapixels). The following acronyms and abbreviations of collections are used in the text:

NHMUK: Natural History Museum United Kingdom (=previously known as The Natural History Museum of London)
MUHN-UMSM: Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Perú
NHMSI: National History Museum, Smithsonian Institution, Washington, D.C.
CUFPR: Collection Federal University of Paraná, Curitiba, Brazil
MHN-UC: Museo de Historia Natural, Universidad de Caldas, Manizales, Colombia; Julián Salazar collection (**JS-C**).
CSC: Chris Samson collection, Kent, England
SAC: Stéphane Attal collection, Paris, France
MDC: Michel Dottax collection, Monthlery, France
MBC: Maurizio Bollino, Lecce, Italy

No specimens were located in other major European collections as **MNHN-P*** (Museum National d` Histoire Naturelle Paris, France), **ZFMK** König Museum (Bonn, Germany) and **MNHU** Museum für Naturkunde Humboldt University, Berlin.

*(Michel Dottax recently donated to this institution 10 male specimens from Peru, one from Brazil and Stéphane Attal a Paratype male of *A. splendida esmeralda* Attal & Büche, 2008)

NOMENCLATURE

ANAEOMORPHA Rothschild, L.W., 1894: 687

Type species: *Anaeomorpha splendida* Rothschild, L.W., 1894. *Novit. Zool.*, 1: 687 type species by monotypy (HEMMING, 1967: 41)

Ibidem, 3 (4): 600, explic. Pl. 13, fig. 1 (1896)
-*Anaeomorpha* (section gen. Prepona). Fruhstorfer, H.,*Dt. Ent.Zeitschr.*, 17 (1904): 296 (1905)
- "Prepona" (Artengruppe *Anaeomorpha*), Fruhstorfer, H., in SEITZ A. (ed.). *Grosschmetterlinge der Erde*, 5: 553, pl. 103 e (1916)
- "Anaea", *A. splendida*, Röber, J.,*ibid.*, 592, note (1916)
-*Anaeomorpha* (Prepona) *splendida columbiana*, Niepelt, W.,*Int. Ent. Zeitschr.*, 21: 390 (1928)
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- *Anaeomorpha*, D`Abrera, B., *Butts. Neotrop. Region*, (partim), 4: 62 (1987)
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-*A. splendida* Racheli T.& Racheli, L.,*Neue Ent. Nachr.*, 41: 109 (1998)
- A. *splendida columbiana* Niepelt, Salazar, J. A., *Bol. Cient.Mus.Hist. Nat., U. Caldas*, 3: 29-31, fig. 1& 2 type (1999)
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- *Anaeomorpha*, Jianxin, Ch, I.O. & Yufei, L., Syst. Butt. Names of the World: 173 (2006)
-*A. splendida esmeralda*, Attal, S. & Büche, M., *Bull. Soc. Ent. Fr.*, 113 (3): 385-387, fig. 1 (2008)
- *A. splendida*, Checa, M.F. *et al.*, *Ann. Soc. Ent. Fr.*,(N.S.), 45 (4): 470-486, fig. 2j (2009)

PREVIOUS TREATMENTS

ROTHSCHILD (1894) in his description of genus and species was the first to attempt to place this butterfly among the Charaxinae saying "*This genus stands midway between* Anaea Hbn *and* Prepona Bsd. *From* Prepona *it differs in its short forewing sharply pointed at the apex, and having rounded hind wings with an acute tail-like projection at the anal angle. From* Anaea *it differs in having the big head, long and sharply pointed palpi and long stout antennae scarcely thickened towards the point, which are so characteristic of* Prepona" and later he added "*In neuration this remarkable insect agrees with* Prepona Bsd.*, the first subcostal branches are free as in* Prepona *and not united to the costal nervure, as in* Anaea Hbn." (ROTHSCHILD, 1896).In 1904 Hans FRUHSTORFER in his preliminary study on *Prepona* placed *Anaeomorpha* erroneously in a separate section on the basis of the red androconia and the other features described above. This proposition was used by the same author twenty years later in his contribution to SEITZ`s series

volume five (FRUHSTORFER, 1916: 553) putting *Anaeomorpha* in the "A-Prepona" group with species that have reddish androconial brushes and separating it from the "B-Archaeoprepona" group with species distinguished by having black androconia brushes.

I. CHARACTERS

a.- Palpus, the basal sensory patch (Fig. 7)

A study of the palpi of *A. splendida* done by Rydon in April of 1971 was sent to the author in November of 2003. The palpi are porrect, pale reddish underside with a short terminal segment and corps with hair tufts; the basal sensory patch is elongated and covered with white hairs, the underside of the palpi light grey-brown. A preliminary comparison of the organs of *splendida* and *Pseudocharaxes xenocrates* (Ww.) indicate that in *xenocrates* the palpi are erect, alternately dark and light below, compressed, the middle segment about 3 ½ times the basal segment, the basal fleck somewhat shield-shaped (scutiform) and pointed distally.

But other features of *Ps. xenocrates* like the wing shape, the large deep thorax, conical abdomen and the antennae dark red above and below with some dark scales above and pale scales below, giving a banded appearance above and below it are shared in *A. splendida.*

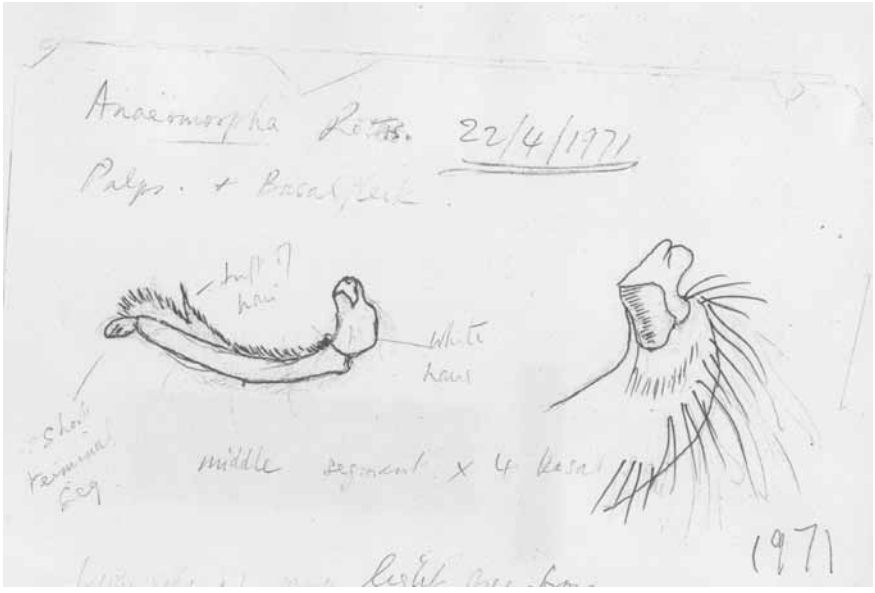

Fig. 7 Original drawings of the palpi and sensory patch of ***A. splendida*** by A.H.B. Rydon, 1971

b.- Male Genitalia (Fig. 8)

The first description of the male genitalia of A. splendida was done by RYDON (1971: 313). The male genitalia are quite distinctive; the short stout uncus is terminally hooked, and slightly shorter than the broad and strong tegumen; the thick valves are short (length 2. 5 mm) and somewhat triangular in shape (like those of *Archaeoprepona demophon* (L.), being broad at the base and narrow at the toothed apex. The gnathos consist of a pair of small, thin, discrete plates below the uncus there being no subuncal projections as are found in *Prepona*, *Agrias* and *Archaeoprepona*; the aedeagus is relatively short (length aprox. 3 mm), strong, rod-like and pointed distally; the juxta is quite long and solid, chitinous underneath somewhat Charaxes-like in appearance but without a terminal and ventral hook. BONFANTTI (2010) revisited the genitalia of splendida with more detail, illustrating several structures and adding that this is the only species within all analysed that has reduced spines in the dorsal part of the aedeagus, next the posterior aperture. The Rydon re-drawing of the genitalia was published by SALAZAR & CONSTANTINO (2001: 369).

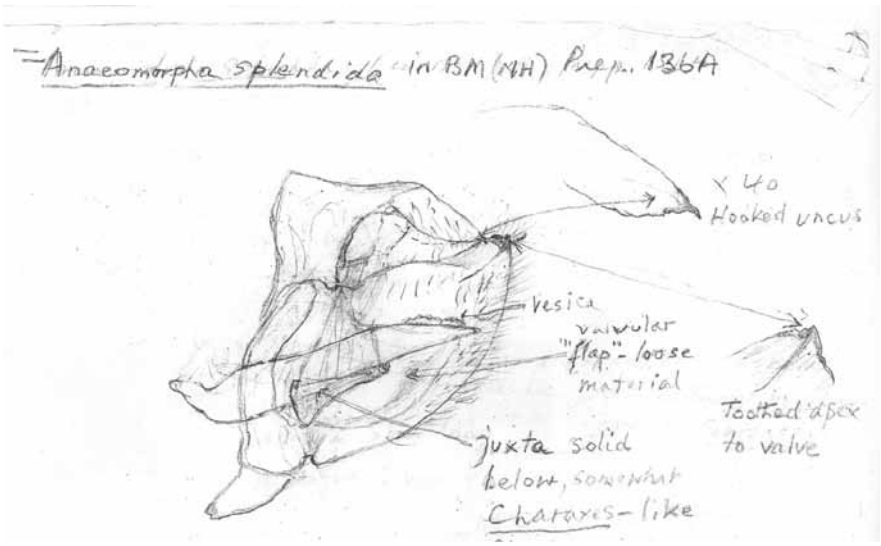

Fig. 8 Original drawings of male genitalia of ***A. splendida*** in lateral view by A.H.B. Rydon, 1971

II. RELATIONSHIPS

c.- Taxonomic Rank in Preponini

RYDON`S work (1971) on the Systematics of the Charaxidae summarized in great detail the probable status of *A. splendida* as follows: "A powerfully built butterfly with a large deep thorax and short conical abdomen and has long stout antennae,

although the pattern of the underside of the wings with the median dark line crossing both wings and the outer third of both wings being speckled with light silvery scales, is somewhat reminiscent of some members of Anaeinae. However it differs in a number of respects from the other members of Preponinae too. The eyes are naked as in the genus *Archaeoprepona* Fruhstorfer and *Prepona* Boisduval, but the mid and hind tibiae and tarsi are spiny above and below as in *Noreppa* Rydon. The venation in Hindwing cell is open (Fig. 9), whereas it is closed in all the other Neotropical Charaxids. The antennae are dark red, a character that was used by Fruhstorfer in 1916 in his subdivision of the Prepona group of species. The palps are somewhat Charaxes-like, being S-shaped and porrect; the basal sensory patch of the palpus is broad and elongated, which places Anaeomorpha somewhere between *Prepona* and *Polygrapha* Schatz, the latter genus as a member of Anaeinae group (SALAZAR & CONSTANTINO (2001)) in their Synthesis of Colombian Charaxids consider that the taxonomic position of the species is probably located between *Archaeoprepona* and *Pseudocharaxes* Salazar & Constantino: type species "*Paphia*" (Polygrapha) *xenocrates* Westwood, 1850, but this hypothesis is not supported by the evidence presented". RYDON (op.cit.) indicated that the particular scales near the base of the underside of the dorsum of the forewing do not extend into space 1b as they do in most of the Anaeinae, so in this respect *Anaeomorpha* should be place among the Preponinae rather that the Anaeinae. The species has a strongly falcate forewing and the anal angle of the hindwing is pronounced, and also differs from the other members of the Preponinae in having a light metallic greenish basal patch in the discal area of the forewing above.

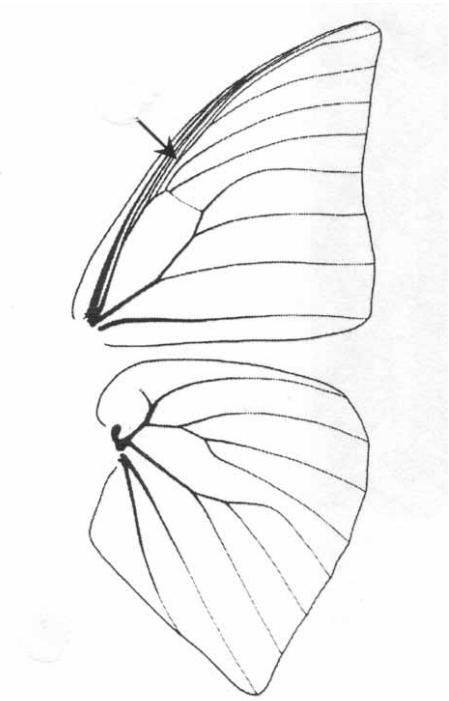

Fig. 9 Wing venation of ***A. splendida*** (after Marconato, 2008)

RYDON (1971) in consequence, erected the tribe ***Anaeomorphini*** as a monotypic group on the basis of these preceding characters.

In a letter written to the present author in September 1999, Rydon comments: "It is the only Neotropical Charaxid with an open discal cell in the Hindwing, which places it with the Old World Charaxidae, such as *Polyura*, *Prothoe* and *Euxanthe*, (a opinion accepted by RACHELI & RACHELI, 2001) but you could put it in a subfamily of its own in the Nymphaloid family Charaxidae, namely ***Anaeomorphinae***. I think it is a relic genus, belonging to an extinct family-group". The genus was also considered primitive and related to Prepona by BAUMANN *et al*., (1977: 142) and cited the opinion of FRUHSTORFER (1916) to include it within the Arten-Gruppe *Anaeomorpha*. Several authors such SMART (1976), HARVEY (1991), RACHELI & RACHELI (2001) and LAMAS (2004) placed this species in the tribe Preponini follows the steps of RYDON (1971). As updated by WAHLBERG & BROWER (2006) the sister group of Preponini are members of the Anaeini tribe. The current taxonomy of the tribe Preponini includes the genera *Prepona*, *Archaeoprepona*, *Agrias* and *Noreppa*. *Anaeomorpha* from South America, is sometimes recognized as a monophyletic genus in this tribe also (SAVELA, 2010; ESCALANTE *et al*., 2010).

d.- Taxonomic Rank in Anaeini

New evidence suggest that *A. splendida* should be placed with the Anaeini (WAHLBERG & BROWER, 2006). MARCONATO (2008) published a detailed cladistic study on the Charaxinae group based in the analysis of 70 species of all genera in the old and new world tropics focusing on morphological data of adults and immature stages corroborating the monophyly of the Charaxinae subfamily. The author compiled 143 morphological characters of adults and immature stages and gave possible relationships within the subfamily Charaxinae through several cladograms. Concluding that Preponini is a monophyletic tribe except for *Anaeomorpha splendida*, allied to Anaeini because androconial patches are not present in the adults, is strong evidence for segregating it from Preponini. In fact, this species shares few characters with the tribe where it was typically located and it makes more sense placing it in a status of *excertae sedis* and no longer considering it in Preponini as RYDON (1971) stated. Unfortunately the immature stages of *A. splendida* are unknown and are essential to confirm the real taxonomic rank of this monotypic genus but MARCONATO (op. cit.) suggested splendida will occupy a more basal place within the Anaeinae (Fig. 10). The genera of this tribe share many immature stage characters with the Preponini particularly *Siderone* and *Zaretis* (a result supported by ADUSE-POKU *et al*., 2009).

The phylogenetic analysis of PEÑA & WAHLBERG (2008) indicate that *A. splendida* is a sister species to the African genus *Palla*, but Peña (com. pers.) states that this position is uncertain, as there were not enough samples taken and few taxa were sampled for the DNA sequences. The molecular data of PEÑA & WALHBERG (op. cit.) suggest it is more closely related to Anaeini.

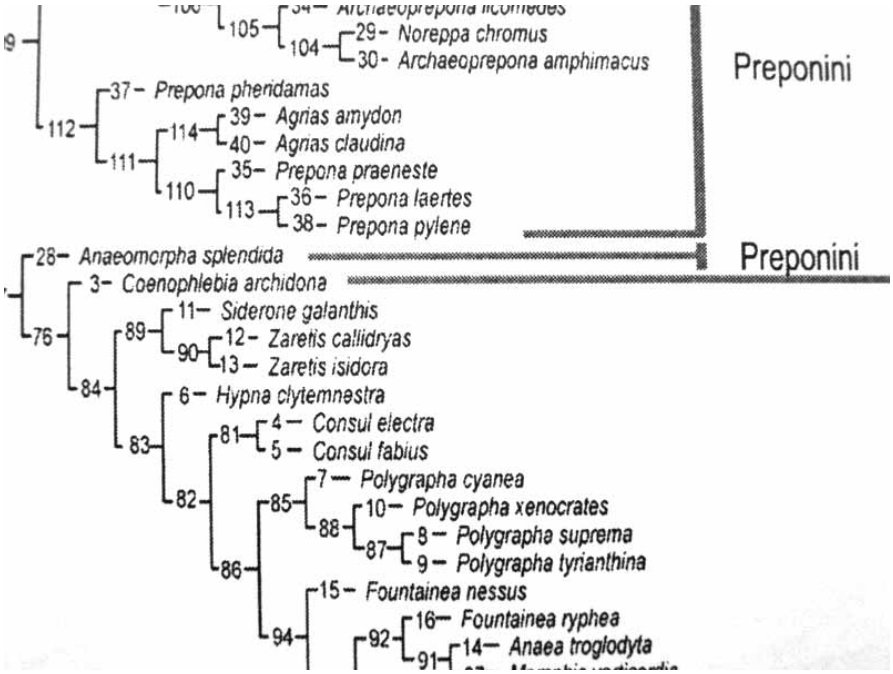

Fig. 10 Basal position of ***A. splendida*** in Anaeinae relationships (cladogram after Marconato, 2008)

III DISTRIBUTION

From the data examined, the distribution of *A. splendida* is restricted to small region of the northwestern Amazonia, from the rivers Caquetá and Putumayo in Colombia, Tonantins in Brazil and the rivers Napo and Tiputini in Ecuador down to Iquitos, Yurimaguas and the Tambo, Urubamba and Ucayalí rivers in Peru (Atalaya and Sapani) (Map. 1). These last locations are the type locality for the new subspecies described by ATTAL & BÜCHE (2008), the more southern record in range for the species in the Neotropics. We have no records of *splendida* from Bolivia, where sightings may be expected in the Amazonian region of that country. Actually the species is unknown from Venezuela and French Guiana (A. Orellana and J.Y. Gallard com pers.). The female, unknown until recently (SALAZAR, 2009) will soon be described (Fig. 11) (Lamas, in prep.).

Fig. 11 Female of ***A. splendida*** taken in Loreto, Peru

ATTAL & BÜCHE (op cit.) summarized the actual distribution of *splendida* (Map. 1) and included the locality of Florida on the Río Putumayo, a historical place where the German naturalist Guillermo G. Klug, at the service of the Harvey Bassler expedition (LAMAS, 1980), took several specimens of the species during his stay in Iquitos and are presently deposited in the British Museum of Natural History in London (Fig. 12).

From the material examined, there appears to be no geographical differentiation in wing pattern except for the subspecies *esmeralda*, although the type specimens of *splendida* and *columbiana* were considered by A. H. B. Rydon (com. pers.) as aberrant. In fact the holotype seems to be aberrant, the blue median band in the forewing being completely broken in space 4, and in the general shape of the butterfly, the same remarks can be applied to the holotype of *A. splendida columbiana* Niepelt. Seasonal variation in wing length, pattern or coloration is difficult to evaluate from the scarce material data and scant field work reported, but according with ATTAL & BÜCHE (2008: 386) the species is stable morphologically throughout the range of distribution.

Figs. 12-13 Male of ***A. splendida*** from Florida, Putumayo taken by G. Klug (BM)

e.- Conservation and field notes

With reference to the species occurrence in Arajuno river- Napo, Ecuadorian Amazonia, a few sightings were made at altitudes between 350 to 600 m (RACHELI & RACHELI, 1998). CHECA *et al.*, (2009) in Yasuni National Park, Napo caught three male specimens in April, June and July of 2002 using Van Someren-Rydon traps (RYDON, 1964) baited with shrimp (*Penaeus vannamei* Boon.) that had fermented for 11-20 days. Two males taken in Mocoa (Putumayo) Colombia in October 1927 were recorded by NIEPELT (1928) but no new records for this region are known actually (SALAZAR, 2003). In Tonantins, a very interesting area in northwest Brazil, a brief sighting a male of A. splendida attracted to his sweatty backpack was made at this station by Olaf Mielke (pers.com).

In Colombia our observations in the Putumayo region and other sites suggest that *Anaeomorpha splendida* is extremely rare and uncommon compared to the other Charaxid species that occur sympatrically in the same forest (eg. *Archaeoprepona demophon* Linnaeus, *A. licomedes* Cramer, *Prepona laertes* Hübner and *Agrias hewitsonius stuarti* Godman & Salvin). The recent discovery of a female *A. splendida* represents an advance in our understanding of the species, although the food plant and the immature stages still remain unknown.

Today this species has high demand and is caught frequently in certain quantity by locals in the Pebas (vicinity of Iquitos) and Sapani areas, the specimens being sold to commercial insect ventures throughout the world, though the exact number is uncertain since most are owned by private collectors. In Colombia, as been noted, the species is quite unknown and its status should be studied for possible inclusion in the IUCN Red list of threatened butterflies under the category of Vulnerable or Rare species.

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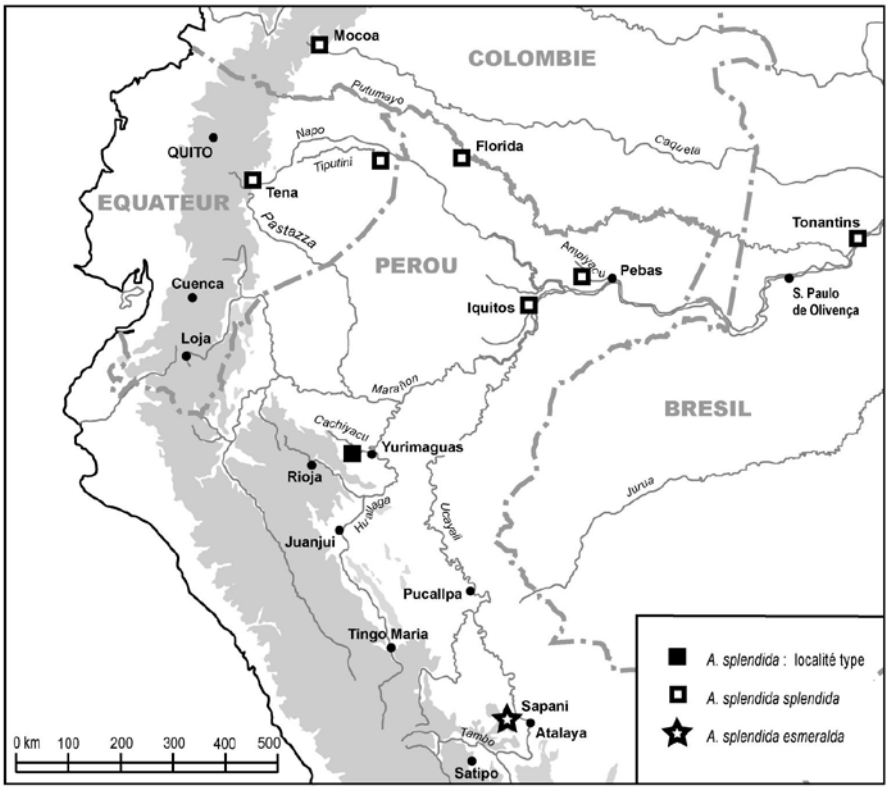

Map 1 Distribution of ***A. splendida*** (Map courtesy G. Séraphin)

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Apendix I. *A. splendida* specimens from museums and some private collections (Abbreviations follows the acronyms employed in resources and methods)

Museum/ priv.coll.	Sex	remarks	country/Locality	Data
NHMUK	♂	Holotype (*A.splendida* Rothschild)	PERU/Iquitos,Loreto Río Cachiyacu	M.Stuart/1898
NHMUK	♂	Syntype (*A.splendidacolumbiana*Niep.) Ex collPeebes/47 Ex coll Hill Mus/31	COLOMBIA/ Mocoa, Putumayo	Oktober- 1927
NHMUK	♂		PERU/Florida R. Putumayo	G. Klug/ December 1931
NHMUK	♂	Rothschild Bequest.B.M. 1939-1	PERU/Florida R. Putumayo	G.Klug/ November 1931

Museum/ priv.coll.	Sex	remarks	country/Locality	Data
NHMUK	♂		PERU/Florida R.Putumayo	G.Klug / November 1931
NHMUK	♂		PERU/ Florida R.Putumayo	G.Klug/ September 1931
NHMUK	♂	Rothschild Bequest B.M.1939-1	PERU/Florida R. Putumayo	G.Klug/January 1932
NHMUK	♂	Ex coll H.M. Peebles B.M.1947-203	PERU/ Iquitos	G.Klug/August 1931
NHMUK	♂		PERU/Iquitos	G.Klug/31 January 1932
MHN-UMSM	2♂♂	G. Lamas (pers. com.)	PERU/Río Itaya, Loreto	VIII-1993, III-1996
MHN-UMSM	♂	G. Lamas (pers. com.)	PERU/Km 28 Iquitos-Nauta	180 m., 25-II-2003
MHN-UMSM	♂	G. Lamas (pers. com.)	PERU/Km 15 Iquitos-Nauta/	120 m., 30-XII-1993
MHN-UMSM	♂	G. Lamas (pers. com.)	PERU/Iquitos	100 m., IV-1994
MHN-UMSM	♂	G. Lamas (pers, com.)	PERU/Río Morona	No data
MHN-UMSM	♂	C. Peña- (pers. com.) DNA estudies	PERU/Tierra Hermosa Loreto	J.J. Ramìrez, 140 m.,9-XII-2003
MHN-UMSM	3♂♂	G. Lamas (pers. com.)	BRASIL/ Amazonas-VilaNova, Tonantins	100 m., IX, XI-993
MHN-UMSM	♂	Holotype (*A.s.esmeralda* Attal& Büche (compers.)	PERU/Ucayali, Sapani, Atalaya	VIII-2006
NHMSI	♂	D.P .Gelabert (pers.com.)	PERU/Río Huallaga	Coll. F. Johnson, wing skide 1094 W.D.F.
CUFPR	2♂♂	O. Mielke (pers.com.)	BRASIL/Rondonia FazendaUrupácandeias do Amarí	O.Mielke&M. Casagrande, 1-7,IX-2001
CUFPR	2 ♂♂	O.Mielke (pers.com.)	BRASIL/Amazonas, Tonantins	7-VI-1996
CUFPR	♂	O.Mielke (pers.com.)	BRASIL/Amazonas, Tonantins	8-XII-2000
CUFPR	5 ♂♂	O.Mielke (pers.com.)	BRASIL/Amazonas, Tonantins	VIII-2001
JS-C	♂	O. Mielke	BRASIL/Amazonas, Tonantins	J. Barbosa.VIII-2001
JS -C	♂	M. Bollino	PERU/Loreto, Iquitos	100 m., II- 1995
JS -C	♂	M. Bollino	PERU/Loreto, Río Itaya, Iquitos	XII-1998
MNHN-P	10♂♂	Michel Dottax (pers.com.)	PERU/Loreto, Maynas, R. Picuroyacu	H. Lequerica, XII-2009
MNHN-P	1♂	Paratype (*A.s.esmeralda* Attal& Büche (com pers.)	PERU/Ucayali, Sapani, Atalaya	"VIII-2007"
MNHN-P	♂	Michel Dottax (com. pers)	BRASIL/Amazonas, Tonantins	VII-1997

Museum/ priv.coll.	Sex	remarks	country/Locality	Data
CSM	♂	Chris Samson	ECUADOR/ Gualaquiza, Rio Bonabiza	
CSM	♂	Chris Samson	ECUADOR/ Gualaquiza, Río Bonabiza	30-XII-1981
CSM	♂	Chris Samson	BRAZIL/ Amazonas-Tonantins	M. Büche, XII-1993
CSM	♂	Chris Samson	ECUADOR/Napo, Apuya	11-VII-1991
CSM	♂	Chris Samson	ECUADOR/ Napo, Mishahualli	XI-1990
KWM	♂	Keith Willmott	ECUADOR/ Napo, Coca-Tiquinoroad, R.Tiputini	K. Willmott, 9-V-1995
MDC	1♂	Michel Dottax	PERU/Loreto, Maynas, R. Picuroyacu	H. Lequerica, XII-2009
Paco Romero coll.	♂	Michel Dottax	BRAZIL/Amazonas, Tonantins	VII-1997
SAC	14♂♂	Paratypes (*A. s, esmeralda* Attal & Büche) Stephane Attal	PERU/Ucayali, Sapani, Atalaya	VIII-2006, XI-2007,"VIII-2007"
MBC	2♂♂	Paratype (*A.s. esmeralda* Attal & Büche) Michael Büche	PERU/Ucayali, Sapani, Atalaya	"VIII-2007"
MBC	♂	Michael Büche	PERU/ Putumayo, El Estrecho	No data
SAC	4♂♂	Stephane Attal	BRASIL/ Amazonas, Tonantins	1994, 6-VIII-1993
SAC	♂	Stephane Attal	PERU/Loreto, R. Itaya	No data
SAC	♂	Stephane Attal	ECUADOR/Napo, La Puya	450 m., II-1989
	5♂♂*	Raimund Spruzina*updated 19-II-2007	PERU/Picuroyacu, R. Nanay, BRASIL/Nova Olinda do Norte	I-2005, 2004
MHN-UC	♂	Michel Dottax	PERU/Loreto, Maynas, R. Picuroyacu	Juan J. Ramirez, 16-V-2010
MHN-UC	♂	Michel Dottax (*A. s. esmeralda)*	PERU/Atalaya, R. Ucayali	R.Maravi 2010

*Photographs of 5 Peruvian and Brazilian males from the Raimund Spruzina collection, available only on www.prepona.info (forum), were sold together with numerous other material of Charaxids and Nymphalids but their present where about are unknown to the author (insect.net forum).