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THE IDENTITY OF *AGRION? MINUTISSIMUM* SELYS, 1876 AND *LEPTOBASIS ROSEA* SELYS, 1877 (ZYGOPTERA: COENAGRIONIDAE)

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Holotypes and allotypes of *Calvertagrion dicellularis* St Quentin, 1960 and *Inpabasis eliasi* Santos, 1961 were compared to holotypes of *Agrion? minutissimum* Selys, 1876 and *Leptobasis rosea* Selys, 1877, respectively. The first 2 names are considered junior synonyms of the older names. Diagnostic illustrations of all type material are provided.

INTRODUCTION

Recognition and ensuing descriptions of new species are often hampered by an inability to recognize previously described species. Without examination of previously described types, entomologists risk describing new species (WILLIAMSON, 1915, 1916; NAVÁS, 1916; BORROR, 1931; KENNEDY, 1939; SANTOS, 1956, 1957; BELLE, 1964, 1977) which will later be placed in synonymy (MACHADO, 1984, 1985a; KENNEDY, 1946; SANTOS, 1946, 1965a, 1965b; BELLE, 1977, 1992; GEIJSKES, 1984). Old species descriptions of Burmeister, Rambur, Hagen and Selys also suffer from the lack of illustrations of important morphological characters. Descriptions of monobasic species may turn out later to comprise two or more sibling species. KENNEDY (1946) correctly expressed the views when he stated:

> "We offer no apologies. Only one who has worked with de Sely's [*sic*] descriptions in *Oxyagrion*, and *Acanthagrion* will appreciate the resulting confusion and the possibility of one's forgetfulness; of his own genus" and " ..... De Selys' descriptions of South American Odonata will in many cases remain enigmas until some generous and skilled European odonatist will publish careful drawings of penes, appendages, and color patterns of the de Selys type material. Good drawings are a must on South American species. Calvert started the work and was followed later by E. B. Williamson and Ris. They have figured described species as well as their own new species."

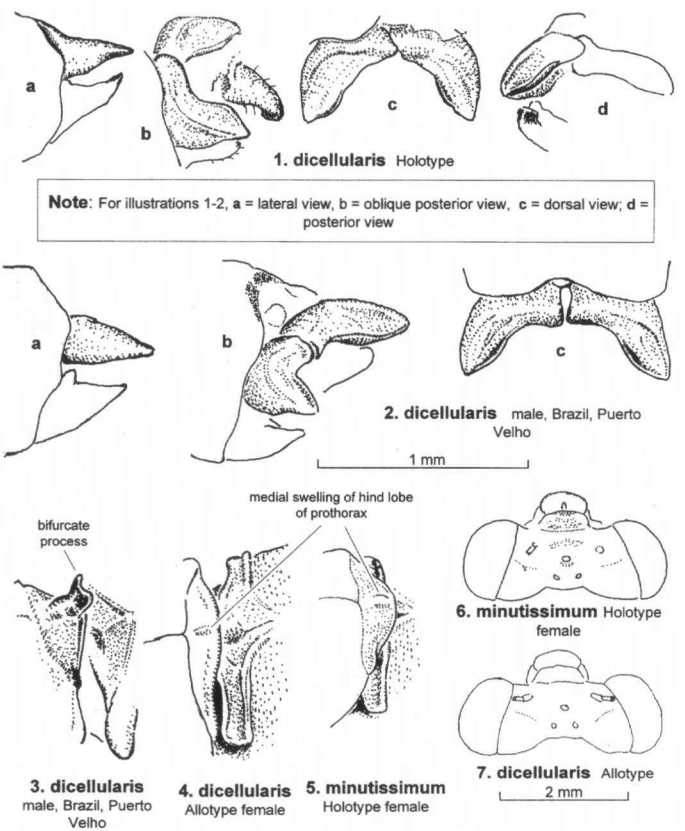
The point was again emphasized when MACHADO (1985b: 363) stated: "Identification of most of the species of neotropical Protoneuridae referred by SELYS (1886) to his sub-genus *Protoneura* has always been very difficult because of the deficiency of the original description[s] and, mainly, due to the lack of illustrations."

Fortunately, various authors (SANTOS, 1946; MACHADO, 1984, 1985a; BELLE, 1970a) have begun to rectify the situation by examining and illustrating type material. In this paper, we illustrate the types of two poorly known species, *Agrion? minutissimum* Selys, 1876 and *Leptobasis rosea* Selys, 1877. Both of these species were later found to have been described as other species.

CALVERTAGRION MINUTISSIMUM (SELYS) new comb.

Figures 5 (hind lobe & mesostigmal plates of thorax), 6 (head), 9 (right fore wing)

Agrion? minutissimum, SELYS, 1876: 1250 (separate: 140) (holotype ♀ "Patrie: Amazone, un exemplaire unique par M. Bates.")



Calvertagrion dicellularis ST QUENTIN, 1960 (holotype ♂, allotype ♀ and one paratype ♀: "alle aus Taperinha bei Santarem, Brasilien, 21.-31. VII. 1927, leg. Zerny, im Naturhistorischen Museum in Wien.") – **new synonymy**

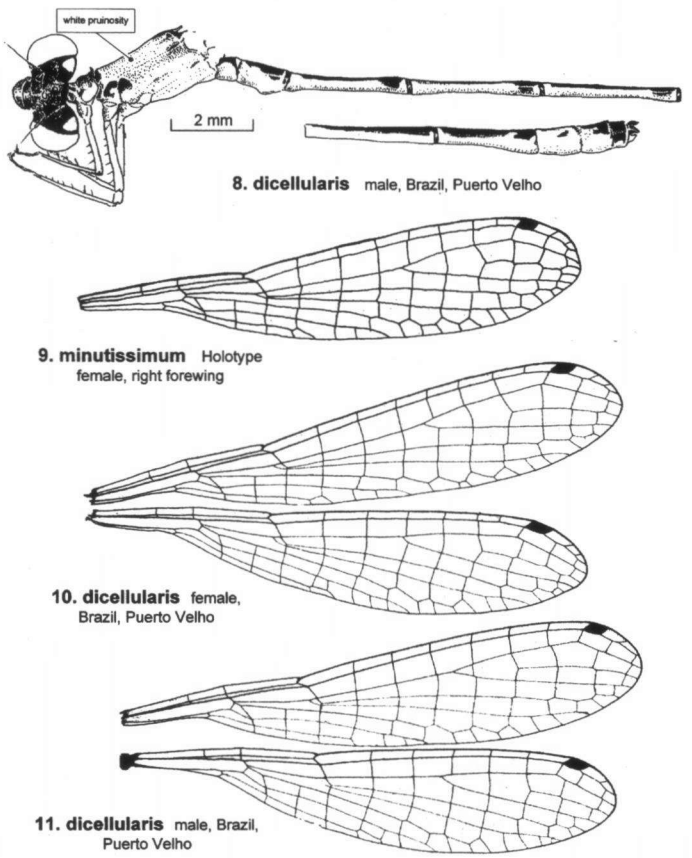
Through the kindness of Dr Ulricke Aspöck, Naturhistorisches Museum Wien, RWG was allowed to examine the holotype and allotype of *Calvertagrion dicellularis*. ST QUENTIN (1960, fig. 7) illustrated the caudal appendages of the male but his drawing is unsatisfactory and will not allow for the determination of the species. The pinned holotype male is in bad condition, in pieces consisting of three wings, head, and abdomen composed of seven pieces. Abdominal segments 9-10 and the caudal appendages and were glued to a card and completely covered with glue. RWG remounted the appendages and they are illustrated in Figures 1a-d. The left forewing is illustrated in the original description. The allotype female is in excellent condition, and we illustrate the head (Fig. 7) and hind lobe of the prothorax and mesostigmal plates (Fig. 4).

Examination of these specimens allowed RWG to determine a series of specimens from Brazil (Amazonas, Puerto Velho [now in Rondonia State], 24 Jan.-27 April, 1922 (UMMZ, RWG, KJT) as this species. We have illustrated morphological characters of both sexes from this material (Figs 2, 3, 8, 10-11).

In November 2000, RWG was invited by JMC to participate in a month-long research program on the Odonata of southern Brazil. While there, RWG was given the privilege of examining some types of Selys in the MNRJ on loan from the IRSN to the late Newton Dias Dos Santos in the early 1960s. RWG compared the holotype of *Agrion? minutissimum* with illustrations he had made of the allotype of *Calvertagrion dicellularis*. The holotype of *A. minutissimum* is a mature specimen in excellent condition with the following labels: "13g. Agrion minutissimum/B[ates] [green label in Selys' hand]", "minutissimum/Bates [green label in Selys' hand]", "Bates [green label in Selys' hand]", "139 [white label written in unknown hand]", "Desseiné par/Santos –5.X.64 [white label by N. D. dos Santos]". Comparison of the thoracic structures (Figs 4-5) and wing venation leave no doubt that *Calvertagrion dicellularis* is a junior synonym of *Agrion? minutissimum*. The holotype male of *C. dicellularis* is missing the prothorax, but examination of several pairs collected by Williamson leaves no doubt that the Williamson material and the two types represent the same species. The male of this species has an erect bilobate structure on the medial margin of the hind lobe of the prothorax (Fig. 3).

Selys originally placed *A. minutissimum* with doubt in the genus *Agrion*. However, the small size and unique characters of the male genitalia confirm St Quentin's placement of this taxon in his new genus, *Calvertagrion*. Consequently, the correct name for this species is *Calvertagrion minutissimum* (Selys) new combination.

REMARKS. – The series collected by Williamson illustrates the full range of ontogenetic variation. Young members of both sexes are largely ocher, but gradually assume dark markings on the thorax, coupled with white pruinosity, as we have illustrated in Figure 8. Three undescribed species belonging to this genus are the subject of study by Dr K.J. Tennessen.



INPABASIS ROSEA (SELYS) new comb.

Figures 12 (hind lobe of prothorax), 13 (thorax), 14 (penis), 15 (left fore wing)

Leptobasis rosea Selys, 1877: 105 (sep. p. 11) (holotype ♂, "Patrie: L´Amazone en mai, par M. Bates. Un ♂ unique. [Coll. Selys]")

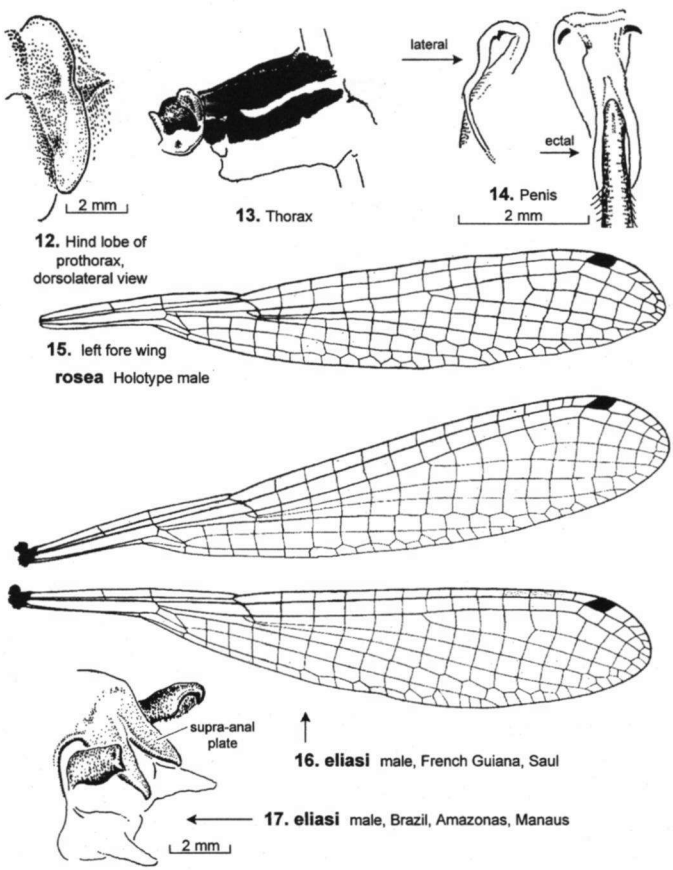
Inpabasis eliasi Santos, 1961: 2-4 (holotype ♂, "Brasil, Estado do Amazonas; Manaus: N. Santos e Cl. Elias col. X. 1959") – **new synonymy.**

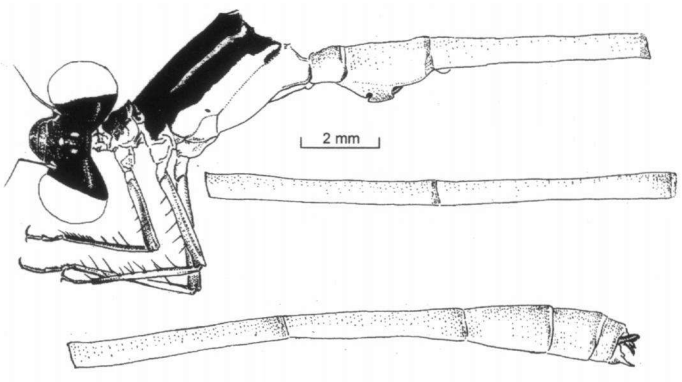
The holotype male of *Leptobasis rosea* is also on loan from IRSN to MNRJ. The specimen possesses the type label data: "8g. Agrion roseum/B[ates] [green label in Selys' hand]", "Bates [green label in Selys' hand]", "89 [white label penciled in unknown hand]", "Desseiné par/Santos – 2.X.64 [white label by N.D. dos Santos]", and is in reasonably good condition but lacks the all-important caudal appendages. The latter

were described by SELYS (1877: 106 [12 separate]) as follows (translation from the French):

".... the edge of 10 slightly straightened medially then excavated on each side at the base of the superior anal appendages. The latter brown, longer than segment 10, straight, a little flattened, the tip roundly truncate. Inferior appendages yellow, of the same length, thick [broad] at base, terminating into a conical point, separated, inclined toward one another."

SANTOS (1961) described *Inpabasis eliasi* based on the holotype male and several paratype males from Manaus and Surinam. RWG compared his illustrations of the holotype of *Leptobasis rosea* and Selys' description of the caudal appendages with three males of *Inpabasis eliasi* (Brazil: Amazonas State: Manaus, Estrada M, km 50, Igaipai S/N, 26 May 1960, coll. Elias, ex coll. A.B.M. Machado), and a male from Saul, French Guiana (all in coll. RWG). The illustrations we provide for *Inpabasis eliasi* (Figs 16-18) and those by Santos (1961) agree with our illustrations (Figs 12-15)





18. eliasi male, Brazil, Amazonas, Manaus

and description of the type of *Leptobasis rosea*. Santos considered the possibility that his new species might be the same as *Leptobasis rosea* ("Any of the species of this genus resembles, as it is possible to judge using the original description, with *Leptobasis rosea* Selys, 1877, nevertheless Selys does not mention any special plate [supra-anal plate] on the 10th abdominal segment [Fig. 17, this paper]."). Had Santos compared the unique structure of the penis between the two species, we are sure he would have recognized their conspecificity. Consequently, *Inpabasis eliasi* Santos 1961 becomes a junior synonym of *Inpabasis rosea* (Selys, 1877) new combination.

We illustrate the left fore wing (Fig. 15), hind lobe of the prothorax (Fig. 12), thorax (Fig. 13), and penis (Fig. 14) of the holotype.

REMARKS. – As evidenced by the statement by Santos quoted above, he refrained from identifying his new species as *Inpabasis rosea* because Selys failed to mention the decumbent supraanal plate. However, his description of the cerci and paraprocts agrees with material that we have examined. We believe that Selys simply failed to recognize the supraanal plate in his description. JMC has compared the holotype of *Inpabasis eliasi* with the holotype of *Leptobasis rosea* and concurs that these two are synonymous.

Locality data indicate that *Inpabasis rosea* is generally distributed throughout the Amazon basin. The wings and body of this genus have never been illustrated and are therefore reproduced here (Figs 16, 18).

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