

On certain types among the Odonata.

I. *Pseudagrion australasiae* Selys 1876.

By M. A. Lieftinck, Buitenzorg (Java).

(With one text-figure.)

Pseudagrion australasiae was described by de Selys after a small series of males, collected on „Poulo Besoar en Malaisie“. These specimens were either presented to Baron de Selys by M. Bouvier, or are from M. A. Atkinson's collection. The female of *australasiae* was said to have been taken in Queensland but this example is apparently lost. Although P. Besoar may be one of a group of small islands to the West of the Malay Peninsula, I have not been able to find out the geographical position of this locality. A second species originally described from that island is *Aciagrion hisopa* (Selys).

In 1913, Tillyard identified Australian individuals of the allied species *P. microcephalum* as *australasiae* Selys. This was in error, and Laidlaw, who examined a male from Calcutta in the Indian Museum (labelled by de Selys himself as *australasiae*), was the first who noticed the widely different anal appendages of *microcephalum* and *australasiae*; and he was well justified to write as follows: „I believe the Calcutta specimens can be further differentiated from Australian forms by the characters of the anal appendages, but have no specimens for comparison. Tillyard, *loc. cit.* sostea, describes the superior anal appendages as having the upper lobe shorter than the lower; in the Calcutta specimens both lobes appear equal in length, whilst the lower appendages in the latter seem to me to be rather more conical and tapering. These specimens are, however, not in the best of condition and study of further material is necessary for a satisfactory determination of possible differences. *A priori* I am inclined to expect the two forms to be moderately distinct.“ (*loc. cit.* 1916, p. 23).

In 1919, however, Laidlaw does not appear to have been aware that Tillyard was wrong in determining the Australian species as *australasiae*, and, misled as he had been by Tillyard's

sketches of the anal appendages, the new name *bengalense* was proposed by this author for the Indian examples.

A re-examination of the true *australasiae* has now brought to light that the males from Calcutta are really that species, while the Australian specimens are identical with *microcephalum* (see also Lieftinck, loc. cit. 1932).

A detailed description of the male of *australasiae*, accompanied by a sketch of the anal appendages, is then given by Dr. Ris (loc. cit. 1927), who was first inclined to consider the Sumatran representative as a distinct species, but on page 45 of the same paper he changes his mind, adopting Laidlaw's name *bengalense* for his species. Although, in his drawing of the apps., the superior pair is shown in an unnatural position, these Sumatran insects are clearly *australasiae*, so that Ris as well as Laidlaw were perfectly right in referring their material to a species which is abundantly differentiated from *microcephalum*.

Since 1931 our species was reported by various authors from many other localities, including Bengal, Assam, and Burma; but, from an imperfect acquaintance with the puzzling *australasiae*, it has always been known as *bengalense*. In the first part of my revision of the Dragonfly-fauna of New Guinea (loc. cit. 1932), I gave as my final opinion on the status of this species that *australasiae* might be identical with *microcephalum* (Ramb.); but, as I had not yet seen the type of the former, this statement was done without due consideration. Early in 1932, some individuals of a blue *Pseudagrion* collected in Java, and identified by me as *bengalense* Laid., were submitted for comparison with typical examples of that species to Dr. Laidlaw, who was kind enough to inform me that they were identical with a male and female in his possession from South India.

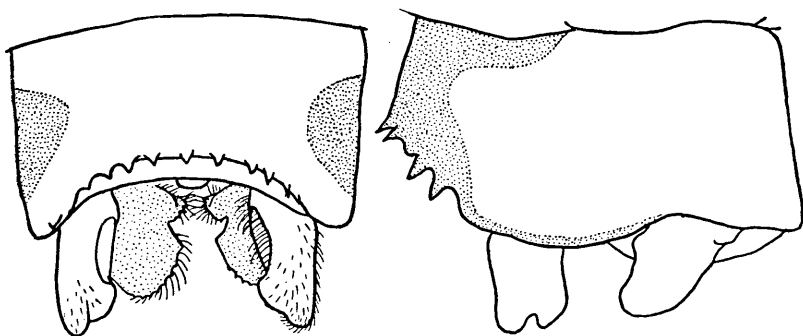
At the end of his description in the „Fauna of British India“, Fraser argues that specimens of *bengalense* collected by myself in Java „... are certainly not *P. australasiae*, nor a race of *microcephalum*“. As we will see, the former statement was not justified.

Material studied: — 4 males (one lacks the head, and in a second example the terminal abd.-segments are lost), labelled: „Mal., Poulo Besoar“ (in de Selys's handwriting), *Pseudagrion australasiae* Selys. One of these is the type; all in the Brussels Museum. 1 male, C. Sumatra, Pad. Bovenl., Boeo, Febr. 1913, E. Jacobson (one of Ris's specimens); 1 female, C. Sumatra,

Toba Meer, March 1922, K. W. Dammerman, in Mus. Buitenzorg. A large series of both sexes from various localities in Java, collected by my collaborators and myself.

In our typical specimens from Poulo Besoar the base of the postclypeus bears a narrow black streak, which in one specimen is divided up into three black points; in addition, there is a black spot on the middle of the vertex. These black head-markings are usually also present in Javan specimens, but in some of these (S. Priangan, W. Java) the front of the head is without any black markings except a mere point on the vertex.

The black marking on the back of segm. 2 of abdomen is also variable in shape and extension (see also Schmidt's instructive drawings of the basal segments in the ♂ of *P. microcephalum*). In two males of the type series this goblet-shaped spot is connected



Pseudagrion australasiae Selys, ♂ type.
Appendages, dorsal view and right side.

both in front and behind with the black terminal triangles; in one, however, the spot is entirely isolated while the anterior edges are more rounded off; lastly, in the fourth individual, this spot is connected only with a black apical spot. In the majority of the Javan specimens the anterior connecting-line is wanting, but in others it is again present in the form of a narrow or slightly thickened mid-dorsal stripe.

The X-shaped black marking on the dorsum of segm. 10 of abdomen seems to be equally variable: in the typical series it is as broad as in Indian specimens, whereas in most of the males from Java, the spot is more definitely constricted. The anal appendages are exactly alike throughout our series. The inner shelf

of the superiors is only narrow, bluish or yellowish in colour, and there is no basal interior projection.

The camera lucida sketch of the anal apps. is taken from one of the males in de Selys' collection from P. Besoar, which agree in all essential features with Laidlaw's and Fraser's descriptions of *bengalense*. Although I have not seen Indian examples of *australasiae* (3 ♂♂ and 2 ♀♀ from Peninsular India, Coorg and environs, and Nilgiris, Masnagudi 4000', named incidentally *bengalense* by Col. Fraser, are all *P. malabaricum* Fras.), I am convinced that Laidlaw's *bengalense* is the same species as *australasiae*, which name should therefore take precedence. The female of this species was described by Fraser (loc. cit. 1933), after a specimen from Java.

We are now able to arrange the synonymy of *P. australasiae* chronologically, as follows:

1876. Selys, Synopsis Agrion., p. 506. — ♂ Poulo Besoar, nec ♀! (? race de *microcephalum*).
1916. Ris, Suppl. Entom. 5, p. 40 (*P. microcephalum*).
1916. Laidlaw, Rec. Ind. Mus. 12, p. 21—22 (key), 23 descr. — — ♂ ♀ Calcutta.
1919. Laidlaw, Ibid. 16, p. 192—193, fig. 4 (apps.). — — ♂ Calcutta (*bengalense* nov. nom.).
1923. Fraser, J. Bomb. Nat. Hist. Soc. 29, p. 750 (*bengalense*).
1927. Ris, Zool. Meded. 10, p. 23—25, fig. 11 (apps.), 45 (remarks). — — ♂ ♀ Sumatra (*bengalense*).
1931. Laidlaw, J. Fed. Mal. States Mus. 16, p. 198. — — Singapore, note (*bengalense*).
1932. Lief tinck, Nova Guinea, Zool. 15, p. 574—577 (90—91 sep.). — — Discussion (*microcephalum*).
1933. Fraser, Fauna Brit. India 1, p. 276 (key), 282—284 (descr.) fig. 119 (apps.). — — Bengal, Assam, Burma, Java (*bengalense*).
1934. Lief tinck, Treubia 14, p. 395—396. — — Java (*bengalense*).
1934. Schmidt, Arch. Hydrob. Suppl. 13, p. 349 (key), 350. — — ♂ Sumatra, ♂ Java (*bengalense*).
1935. Lief tinck, Misc. Zool. Sum. xcii-xciii, p. 11. — — Sumatra (*bengalense*).

It is still a matter of doubt whether specimens from Luzon (Philippines) recorded as *australasiae* by Ris (loc. cit. 1927, p. 23) and by de Selys (Anal. Soc. Esp. Hist. Nat. 11, 1882, p. 27 sep.) are really that species. R. Martin's *P. australasiae* from Victoria (Australia) is almost certainly *microcephalum* (Mem. Soc. Zool. France, 19, p. 246).

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