

F. F. LAIDLAW

## Remarks on some Odonata (Dragonflies) from Mangalum Island, North-west Borneo

By F. F. LAIDLAW

[Mangalum Island is about a mile and a half in diameter, quite flat except at the centre where it rises 30—40 feet, and lies about thirty miles north-west from Jesselton, British North Borneo.]

This small collection, 49 individuals in all, representing ten species, made by Mr. C. Boden Kloss during a week spent on Mangalum Island in July 1928, can scarcely be supposed to include all the species which occur on the island.

But even if it does not give us a full acquaintance with the Mangalum fauna it is, so far as it goes, of great interest.

I am of the opinion that it supports the supposition that the fauna is not entirely composed of species which have reached the island accidentally from the mainland, but that it includes species which have inhabited Mangalum since the time when it was a part of the larger land mass now represented by Borneo; that it is in fact a relict fauna.

Of the ten species collected three probably reach the island from time to time from the mainland. These are—

*Tramea limbata*  
*Tholymis tillarga*  
*Anax guttatus.*

Of the remainder, none I think are likely to travel voluntarily or involuntarily over any considerable stretch of sea.

(I would not deny the possibility that one or more of them may have been carried to Mangalum by air currents, but I think the view that they belong to a relict fauna is at least equally tenable. A comparison with the list of the Mentawi Islands is interesting in this connection<sup>1</sup>).

Three of them are found on the Mentawi Chain of islands off the W. Coast of Sumatra, and it is worth remark that in those islands two of these three have developed sufficient peculiarities to be recognizable as distinct races, and that one of these two is also

<sup>1</sup> Vide Laidlaw, Journ. Malayan Branch, Roy. Asiat. Soc. IV, 1926, pp. 214—233.

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the one which tends to show some distinctness in the Mangalum fauna, viz. *Neurothemis terminata*. They are—

*Gynacantha dohrni*

*Agrionoptera insignis* (on Mentawi as a distinct subspecies *chalcocithon*)

*Neurothemis terminata.*

In the series from the Mentawi Islands the isochromatic specimens outnumber the heterochromatic, whilst the males further are distinguishable from typical *terminata* by the colour pattern of the wings.

Lastly, four of the species have not been recorded from the Mentawi Islands, and one of them has not hitherto been taken in Borneo.

*Canacinia gigantea*

*Raphismia bispina*

*Lestes praemorsa*

*Archibasis* sp.

### ZYGOPTERA

#### Lestidae

1. *Lestes praemorsa* Selys.

2 ♀♀.

This species is actually an addition to the Bornean list. I have compared the specimens with examples from Coorg, in S. India, and can find no differences.

#### Coenagriidae

2. *Archibasis* sp. ? *melanocyana* Selys.

1 ♀.

Specimen much discoloured, but appears to be *melanocyana*.

### ANISOPTERA

#### Libellulidae

3. *Agrionoptera insignis* Ramb. *insignis* Ramb.

6 ♂♂, 8 ♀♀.

Indistinguishable from examples from the mainland.

4. *Raphismia bispina* Hagen.

2 ♂♂ ad. 1 ♀ teneral.

5. *Neurothemis terminata* Ris.

3 ♂♂, 9 ♀♀ isochrom.

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A very interesting series. As a rule in this species the heterochromatic females largely out-number the isochromatic form of the sex. Thus in a series of 12 ♂♂ and 6 ♀♀ from North Borneo, (Kudat, Bettotan and Samawang) all the females are heterochromatic. Ris in his monograph writes that the heterochromatic females preponderate over the isochromatic. So that it is remarkable to find that in the present series there is not a single heterochrome amongst the females.

The fact can scarcely be due to any seasonal difference, as the series from Borneo was collected in the months July—Sept. whilst the Mangalum series was taken in July.

The significance of the fact is obscure, but at least it indicates that some factor or factors are acting in one habitat and not in the other. Protective mimicry which has been invoked as an agent in the case of dimorphic females of various species of *Papilio* seems out of count here.

A second feature, one which however concerns only the three males and is therefore only to be noted as a fact, is that all of them have a more extensive pigmented area on the wings than in average males from the mainland. The pigment extends just beyond the level of the pterostigma. One male from Kudat shows equally extensive pigmentation.

6. *Tramea limbata* Desjardins.

1 ♀.

Belongs to the Bornean form of the species.

7. *Gamacinia gigantea* Brauer.

9 ♂♂, 1 ♀.

8. *Tholymis tillarga* Fabr.

1 ♂.

Aeschnidae

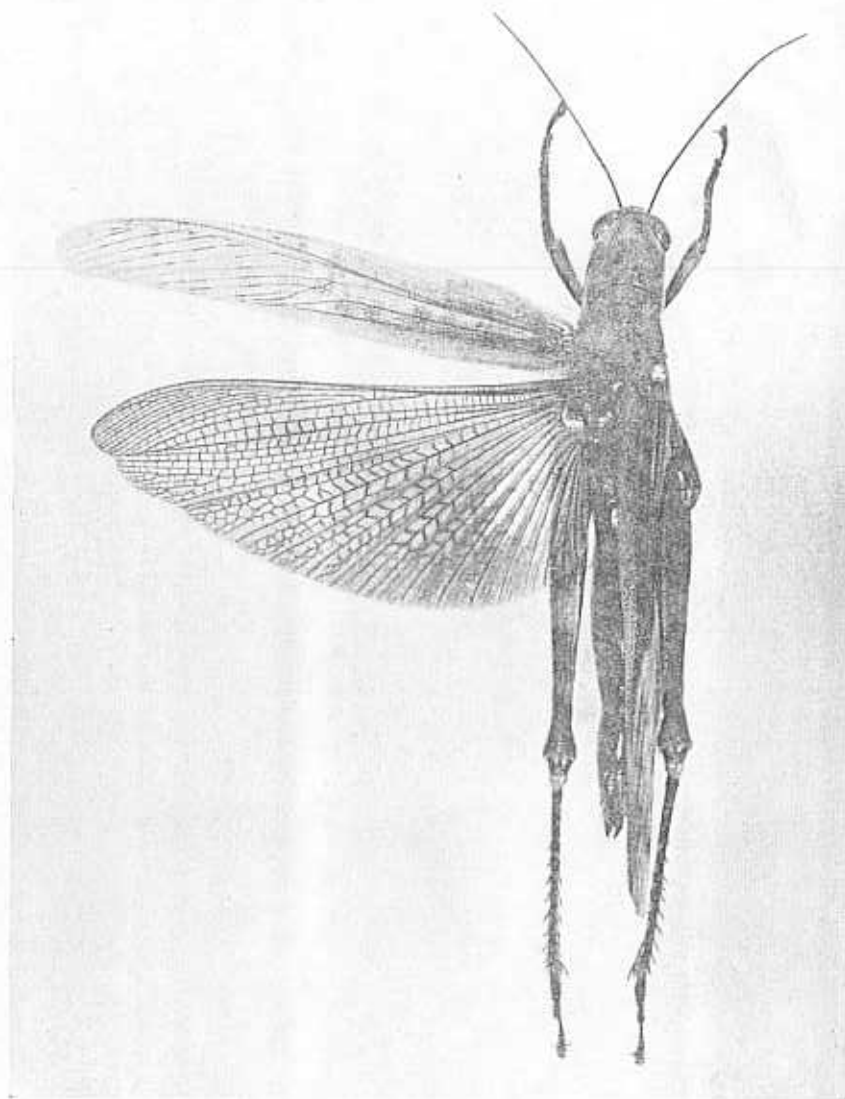
9. *Gynacantha dohrni* Kruger.

2 ♂♂, 1 ♀.

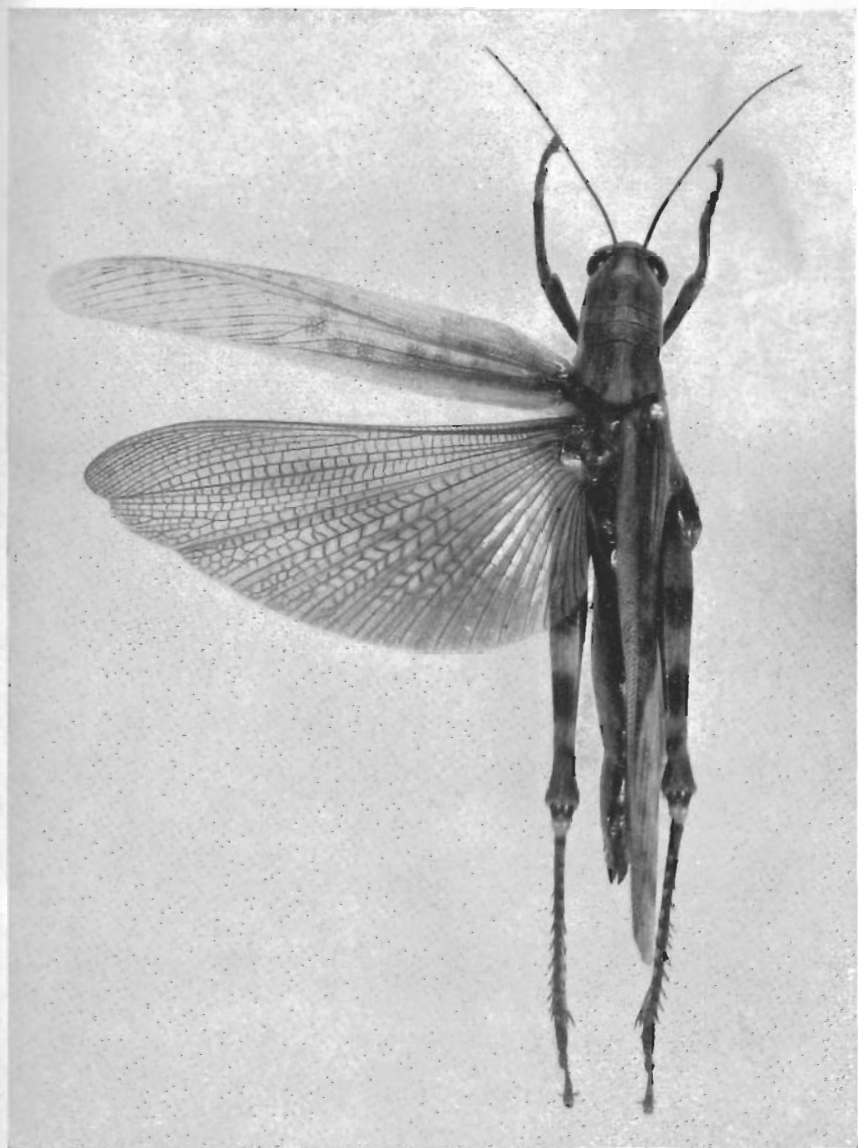
Recorded from Sumatra and from Sintang, Borneo.

10. *Anax guttatus* Burm.

1 ♂, 1 ♀.



*Valanga nigricornis mangalumensis*  
Willemse, subsp. nov. Type ♂.



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