

"Kurauda,"
Mount Errington,

29. 12. 13,

Hornsby, N.S.W.

Dear Miss Butler,

It was a great pleasure to me to receive your kind letter and the paper which I so much wanted. Your paper has cleared up one important point, viz. whether setae are ever developed on the lateral lobes of Aeschnine labia. I see that 2 of these appear in the young stages of Anax nymphs. In a very long paper on the life histories of Australian Aeschninae, which I hope will shortly be published, I figure the labium of the nymph of Gynacantha rosenbergi. This has well-developed lateral setae, just like those of Libellulidae. When I discovered it, I took it to be an archaic character; later, I decided that it was a caenogenetic development for Gynacantha only. Now the fact that Anax nymphs show something of the same set in very interesting, for this genus like Gynacantha has invaded the Libellulinae-sphere by breeding in absolutely still waters. Hence the caenogenetic wing-development, the rounded anal Σ dupl of σ etc. Your paper now requires the question & makes it possible to argue again in favour of the setae being archaic, since they are developed early & then lost in Anax. But I still favour the other view.

I hope we shall correspond occasionally. My health is very poor, & if I do not write for months, you will know why. Collecting in tropical Queensland has indeed heavy toll on me, but I hope to get rid of my microbes in time. I have been very ill this year, I am now at home, an invalid, & cannot do any collecting at all this summer.

I am putting before you a fair number of my more recent papers, & hope they may be of use both to you & to Professor Needham. I have a little grievance against him, for I wrote him 2 letters a few years back & also sent him some of my papers, under the impression that we had established a mutual correspondence, but I never

received either reply or acknowledgement, so I dropped his name from my list. I expect he is too full-up with work to bother about me, but I felt somewhat hurt. All my other American correspondents have been exceedingly kind.

If you do not know my "Cordulephya" paper, you might be interested in it, as setting forth a theory of the "single descent" of the Anisoptera anal loop. Dr. Rie, I suppose Prof. Needham also (judging by his views expressed in Cordulephya in his famous Wing-Venation paper), held that the Libellulidae anal loop is secondarily developed from narrow-winged forms such as Cordulephya. I held that it came from the same source as all the other forms of anal loops, i.e. from a fairly wide generalized cell-mass in the hind-wing of the ancestral Anisoptera-type. Dr. Calvert has recently inclined to accept my view, which I hope to strengthen later on by further arguments.

I am writing a book on the Biology of Odonata for the Cambridge (Eng.) Zoological Series; it is to be ready in 1915. I hope we may both benefit & derive pleasure from the perusal of one another's works, & I wish your forthcoming book every success.

I will help you all I can with spare specimens, information etc, if you will write & tell me what you want. At present all my duplicates have been sent away, but I shall collect more when I get well.

Could you possibly send me very careful sketches or photos of the appendages of *Syncordulia gracilis Burm. Dr. Calvert kindly obtained wing photo for me, but it is not enough. Notes on colouring, ^{measurements etc} would also help. This sp. seems to be undoubtedly Australian by its structure, I is probably from West Australia, but I have never met with it.

I badly need copies of the following papers:-

Needham & Anthony Structure of thorax in Odonata. J. N.Y. Ent. Soc. XI 1903.

Needham & Cokerell Unknown Odon. nymphs from New Mexico. Psyche X, 1903.

Needham Calopterygine nymphs Ent. News Philad. 22 1911.

* It seems to be very close to my genera Hesperocordulia & Lathrocordulia. See one of my papers sent to you.

Child & Young Regeneration of appendages in Agonimidae Arch. Intus. XL 1903.

Backhoff P Tuturich. des copulationsapparates von Agonim Zs Wiss Zool Leipzig 95¹⁹¹⁰

Neuchwandra * → Scott G.G. Distribution of tracheae in nymph of M. lepidia Woods Holl. Mass. Mar.
Biol. Lab. Bull. 9. 1905.

Uexküll J Studien über den Tonus. V Die Libellen Zs Biol. München. 50 1907.

Kammerer P. Symbiosis zw. Oedogonium & und Aeschna cyanea
Wiener Fest Schr., Wien 1908.

Pierre Abbé Any paper on "Ponte des Odonata". Rev. Sci. Boston.

None of the publications in which they occur are obtainable in Sydney, unfortunately. So I should be most grateful either for (a) spare copies (b) the loan of copies, to be returned or (c) a short digest giving the main contents of the paper. I must read every biological paper on Odonata before I finish my book, & the isolated portions of N.S.W. make this very difficult. I shall be very glad to receive any publication of

Prof. Needham's. I am sure that, if he realized the value of his papers, he would try to send me them as they came out. His Wing-Venation paper, (in spite of one or two minor points on which I disagree with him) is easily the finest & most useful paper on Odonata that has ever been published.

I hope to carry out some entomological studies on the developing ova of Odonata as soon as I can get the material. I also have a number of fine Mesozoic Australian Fossil Insecta to work at; one is a dragonfly (Anisoptera) of remarkable structure, (belongs to the Trias).

Many thanks for paper, & good wishes for the New Year,
From yours sincerely

R. J. Gillyard