

attributed partly to defective mounting and optical conditions, and partly to the presence and unusual disposition of pigment in the scales.

The true scale structure of the hair of the bat may be revealed either by the method of mounting and viewing which I have devised¹, or by making a celluloid impression in the manner recommended in my later paper². Fig. 1b is a photomicrograph of

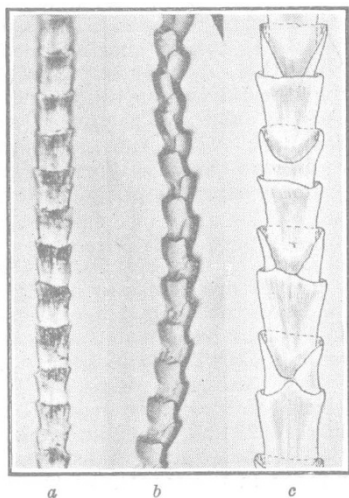


FIG. 1. Hair of bat. a, celluloid impression, $\times 300$; b, $\times 300$; c, drawing, $\times 750$.

such an impression, while Fig. 1c is a drawing of the scale arrangement which is both unusual and interesting.

The root and tip of the hair are commonly free from pigment and, towards the root end, the fibre shows a zig-zag appearance, representing an exaggeration of Fig. 1b.

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¹ Manby, *J. Text. Inst.*, 23, T.5; 1932.

² Manby, *J. Roy. Micro. Soc.*, 53, 9; 1933.

Occurrence of *Prosopistoma* in Ceylon

THE recent discovery in Java by M. A. Lieftinck¹ of larvae of a species of *Prosopistoma* (Insecta, Ephemeroptera), which he has named *P. wouteræ*, makes it desirable to direct the attention of zoologists to the existence of this interesting genus in Ceylon. In September, 1928, a single larva was captured by me in a rapid stream at Ougaldowa Estate, Belihuloya, Ceylon, about 5,000 ft., and briefly recorded in the administration report of the Colombo Museum for that year. It was found clinging to a stone in the manner described for the European species, *P. foliaceum*, Fourc.

Through the kindness of Mr. Lieftinck, I have been enabled to examine a paratype of *P. wouteræ* of approximately the same size as my specimen. The Ceylonese species is clearly distinct from it, having both absolutely and relatively a much broader head, and differing in other respects besides. It appears to differ also from *P. foliaceum* in various details of structure, but as I lack any specimen of the latter and have not the complete literature, I must reserve any definite pronouncement on this point.

My specimen is considerably smaller than the type of *P. wouteræ* and is probably not in the last nymphal instar. For this reason, as well as the fact that only a single specimen is available, I refrain from publishing a description pending the capture of further material. Meanwhile, however, I should be very grateful for specimens for comparison of *P. foliaceum*, Fourcroy or *P. variegatum*, Latreille (described originally as a crustacean allied to *Apus*, which, superficially, it resembles), from entomologists in Europe and Madagascar.

The larvæ are flattened and very broadly oval in shape, with a short, segmented 'tail'. They are to be found by day, clinging tightly by suction to the under surface of stones in rapid streams; but at night they detach themselves and swim actively about. The imago is apparently unknown, but the sub-imago of *P. foliaceum* has been reared in France.

The distribution of *Prosopistoma* was, for a long time, one of the most striking, if unsatisfactory, examples of 'discontinuous distribution' on record, namely, Europe and Madagascar. Its recent discovery in Java and Ceylon seems to show that want of collecting is the principal reason for this apparent discontinuity, and it seems very probable that search in rapid streams would reveal its presence in many other countries of the Old World.

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¹ Lieftinck, M. A., "A new Species of *Prosopistoma* from the Malay Archipelago (Ephemeropt.)". *Tijdschrift voor Entomologie*, Supplement D1.75, 1932.

Low Auroras and Terrestrial Discharges

INVESTIGATIONS by Trömholt¹, Chant², Johnson³ and myself⁴ have produced evidence which points to the existence of sounds of a hissing, swishing or crackling nature associated with brilliant displays of the aurora. Evidence has also been presented which suggests the existence of luminous effects at low levels accompanying occasional displays. In explanation of these phenomena, the hypothesis has been advanced that there is sometimes present, during auroral displays, an unusual electrical condition of the atmosphere which results in an electrostatic discharge close to the earth's surface. Such a discharge, if real, is probably of a 'secondary' nature induced in some way by processes which take place at great heights⁵ and are responsible for the more conspicuous and familiar aspects of the aurora as investigated by Störmer and his collaborators.

Recently a number of reports have been received from observers in northern Canada who have detected the odour of ozone during auroral displays when the displays were accompanied by sounds. These observations would appear to offer in some degree confirmation of the idea that the sounds and the low level displays are due to electrostatic discharges close to the earth's surface.

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¹ NATURE, 32, 499, Sept. 24, 1885.

² *J. Roy. Astro. Soc. Canada*, 17, 273; 1923.

³ "Concerning the Aurora Borealis" (printed privately).

⁴ *J. Roy. Met. Soc.*, 59, 71; 1933; *J. Roy. Astro. Soc. Canada*, 27, 184; 1933.

⁵ A somewhat similar suggestion was made by Störmer in 1927 to account for an observation made by Jelstrup, NATURE, 110, 45, Jan. 8, 1927.