

A NEW APPROACH TO DISTINGUISH A. STEPHENSI FROM A. SUPERPICTUS AT THE LARVAL STAGE.*

by

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Although in their adult stages A. stephensi and A. superpictus can easily be distinguished by means of many taxonomic characters, as far as the writer is aware, no significant difference has yet been generally accepted to exist between these species at the larval stage.

In certain areas of Iran these two species are well known to breed pure. During routine microscopic examinations of the larvae, the author noticed some difference in the number of branchings of the middle prothoracic hairs in the direction of the outer prothoracic hair. (see fig. 1) .

In order to test whether this taxonomic character did in fact differ significantly for these two species, an attempt was first made to collect the larvae of the two species from regions where from long past experience only one of the two species alone is known to exist. The larvae for A. stephensi were obtained from the littoral area extreme south of Iran, and A. superpictus from Khorassan province in the extreme north east of Iran. One hundred larvae of each species were then microscopically examined by the same person and the number of branchings counted separately for the left and right sides of each species. The arithmetical means and the variances of the four series of 100 counts each are given below:

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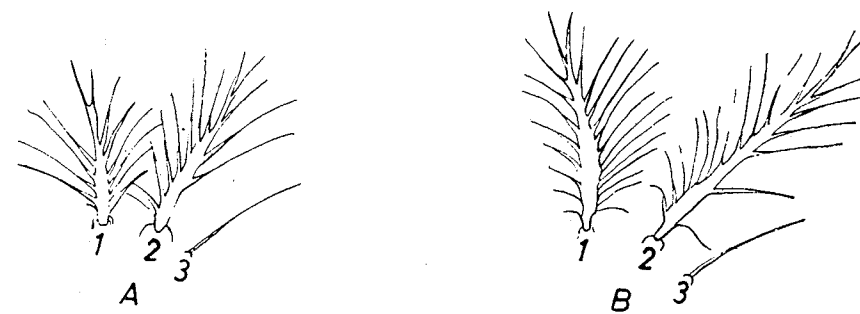
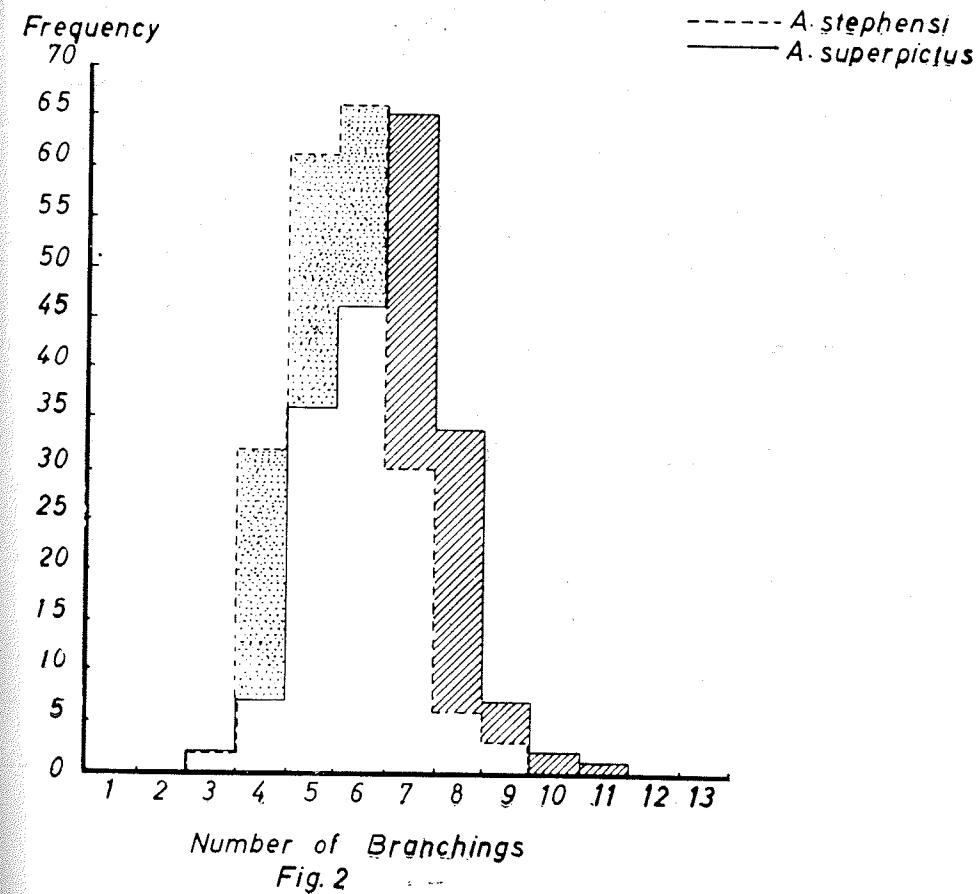


Fig. 1 PROTHORACIC HAIRS. 1 Inner, 2 Middle, 3 Outer

A. - A. stephensi

B - A. superpictus

HISTOGRAM SHOWING THE NUMBER OF BRANCHINGS OF
OUTWARD MIDDLE PROTHORACIC HAIRS (BOTH SIDES)
OF A. stephensi & A. superpictus



Number of branchings of the middle prothoracic hairs of A. stephensi & A. superpictus in the direction of the outer prothoracic hair:

<u>A. stephensi</u>	Arithmetic means	Variance	
Left side	5.54	1.21	?
Right side	5.66	1.34	
Both sides	11.20		?
<u>A. superpictus</u>			
Left side	6.57	1.77	
Right side	6.54	1.65	
Both sides	13.11		?

The significance of the difference between the branchings on the left and right sides of each species was first tested statistically by means of the usual t-test. This difference was found to be insignificant. The counts of both sides were then added separately for each species. The means found for A. stephensi and A. superpictus are 11.20 and 13.11 respectively. The value of "t" in connection with the difference between these two average counts is found to be 4 ? which for 198 degrees of freedom is highly significant.

On the basis of these observations it can therefore be claimed that, on the average, the number of outward branchings of the middle prothoracic hair is greater for A. superpictus than for A. stephensi.

This fact is well brought out by the following two histograms drawn on the same horizontal scales. (see fig. 2).

It is proposed to set out the original data in a more detailed paper in which the author proposes to discuss how this statistically significant taxonomical difference could be exploited to distinguish between the two species at their larval stages in routine work.

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Sommaire

En vue de trouver une différence taxonomique entre A. stephensi et A. superpictus, 100 larves de chaque espèce sont choisies et les nombres des branches des soies prothoracique moyenne (sur le côté de soie prothoracique externe) ont été comptées.

Les moyens trouvés pour A. stephensi et A. superpictus sont 11.20 et 13.11 respectivement, qui sont statistiquement significatifs.

Des études ultérieures dans cette direction sont recommandées.

Summary

In order to find a taxonomical difference between the larvae of A. stephensi and A. superpictus, 100 larvae of each species were taken and the number of branchings of the middle prothoracic hairs in the direction of the outer prothoracic hair were counted.

The means found for A. stephensi and A. superpictus are 11.20 and 13.11 respectively, which are statistically significant.

Further studies on this subject are suggested.

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