

1918-04

The Occurrence of a Probable Gynandromorph in the Homoptera

DeLong, Dwight M.

The Ohio Journal of Science. v18 n6 (April, 1918), 226-227

<http://hdl.handle.net/1811/1994>

Downloaded from the Knowledge Bank, The Ohio State University's institutional repository

THE OCCURENCE OF A PROBABLE GYNANDROMORPH IN THE HOMOPTERA.

DWIGHT M. DELONG.

Gynandomorphism occurs almost exclusively in insects and has been found in different and quite diverse orders, including Lepidoptera, Hymenoptera and Diptera, where it is commonly found, and more rarely in Coleoptera. This condition has never been reported, however, for a member of the Homoptera although previously noticed no doubt by workers in this group. Prof. J. G. Sanders has observed this condition in a single specimen of *Deltocephalus sayi*.

This curious phenomenon may be manifest in two different ways, either by an anterior-posterior arrangement of both male and female structures, or by a lateral arrangement. The latter type is by far the most prevalent and very often a butterfly or moth is found with one wing of male and the opposite one of female coloring; also flies, ants and bees will often display the lateral type, but it is very rare that anterior-posterior gynandomorphism is found.

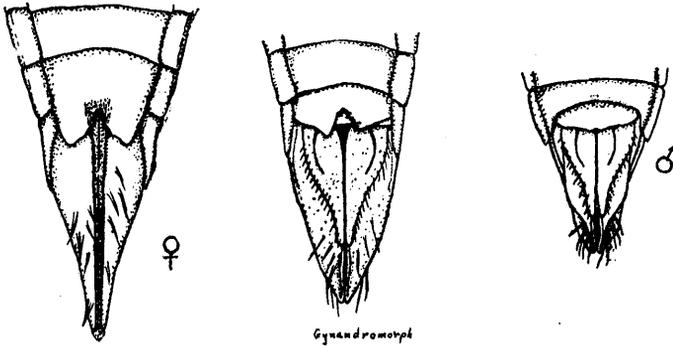
The specimen at hand is *Chlorotettix unicolor* Fh. which was kindly sent to me with some other *Cicadellidæ* by Frank H. Lathrop and was collected at Corvallis, Oregon. The species is of a uniform green color and the structural characters of typical examples of the two sexes are just alike except the genitalia, so the occurrence of both male and female characters in this specimen is determined entirely by these genital structures, which are quite different and distinct in the two sexes.

By a study of this specimen and a comparison of the genitalia with those of the typical male and female, some very striking similarities and resemblances to parts of the genitalia of each sex is noticed and a combination of typical characters of both sexes is seen instead of a set of different or freakish characters. I will attempt to point out these similarities with the aid of the accompanying diagrams which show the genitalia of the typical male and female, also the specimen having the combination of characters.

If this is a gynandromorph which seems to be the case, it is of the anterior-posterior type, the anterior structures being female and the posterior male.

The last ventral segment of the abdomen is undoubtedly a female segment and contains the median notch on the posterior

margin which is characteristic of that sex. The segment in this case is much shorter than the typical female, but resembles it very much, while it bears no resemblance whatsoever to the last ventral segment or the valve of the male. The male valve in fact seems to be entirely missing and replaced by this female segment. The plates, however, are well developed and typical of the male of the species. Although slightly larger in size, the shape, structure and position are the same and the outer margins are similarly armed with spines.



The pygofers resemble the male of unicolor more than the female structures. The opening with keeled sides at the posterior end resembles very closely the male, but the pygofers are not so strongly inflated at the middle. There is no trace, however, of an ovipositor which would be a conspicuous part of the genitalia in case it were a female and should extend from the base to the tip of the pygofers.

In the specimen in question a segment is found to lie just beneath the last ventral segment, and the edge of which protrudes slightly at the posterior end. This structure I am not able to homologize with a similar one in the typical genitalia of either sex; but it is the only one not accounted for, and which does not resemble in a very marked way some part of one of the other specimens.

From this comparison it is seen that there is an entire absence of male structures anteriorly, replaced apparently by typical female structures and a condition just the reverse of this for the posterior portion, so apparently is a good example of the anterior-posterior type of this phenomenon. This is not commonly seen and since it occurs in the Homoptera for which group it has never been reported, perhaps deserves mention here.