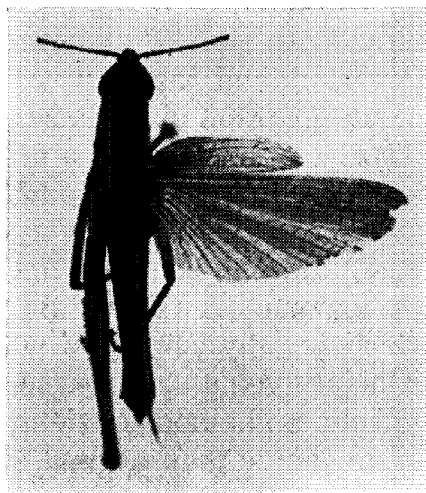


**A CASE OF REDUCTION OF THE RIGHT TEGMEN IN A MALE  
of *Syrbula admirabilis* (Uhler)**

By K. Princis (Riga Latvia).

Some time ago I received a small lot of Orthoptera collected in September, 1937 by S. B. Smalley at Cincinnati, Ohio, U. S. A. Among these specimens I was surprised to find a male of *Syrbula admirabilis* (Uhler) with the right tegmen considerably reduced, but with the wing of the same side and both tegmen and wing of the left side fully developed (Fig. 1). Such cases of partial reduction of the organs of flight are rather uncommon in Orthoptera, and the peculiarities of this specimen warrant a short description.



The measurements of the specimen are as follows: length of body 21.4 mm.; length of pronotum 3.9 mm.; length of left tegmen 16 mm.; length of right tegmen 9 mm.; length of wings 15.4 mm.; length of hind femora 15.4 mm. All of these measurements are more or less below the minima given for the species by Blatchley<sup>1</sup>, and the stunted condition of this individual may indicate that it was subjected to less favorable general growth conditions than usual. However, the specimen is by no means to be considered as a cripple, for all parts of its body are normally developed except the right tegmen, and the latter is not malformed. The reduced tegmen looks more or less like a normally developed tegmen, and at first sight appears to be merely a dwarfed reproduction of a normal tegmen. However, more detailed study shows at once the incorrectness of such a conclusion, only the basal half of the tegmen being more or less like that of a normal specimen, while the apical half is greatly reduced.

The reduction has proceeded from the apical end towards the base, and from the whole apical half of the tegmen there is left only a small part which forms the apex of the tegmen. The network of this reduced apical part is represented only by the be-

<sup>1</sup>Blatchley, W. S.—Orthoptera of North-Eastern America, Indianapolis, 1920, p. 209.

ginnings of the branches of the principal veins; the cross-veinlets which are so well and regularly developed in normal tegmina are almost wanting, except for a few quite irregular remaining ones.

The basal half of the tegmen is almost like that of a normal individual, but careful inspection shows deviations from the normal condition in this part of the tegmen also, though here the indications of reduction are less evident than in the apical half. In the first place the size is less than that of a normal tegmen. Furthermore, the venation shows some peculiarities when compared with that of a normal tegmen. The costal vein is well-developed, and has its usual shape. The mediastinal vein shows an interruption at its base, so that the vein is divided into two parts: a basal one and a distal one. The distal part, instead of being connected with the basal part, joins with the humeral vein near its base, but the short basal part of the mediastinal vein ends freely, and can be traced only for about one-fifth of the length of the tegmen. A further peculiarity concerns the discoidal vein, which is fully conjoined with the humeral vein. All the other principal veins are present and almost normally developed except for slight modifications. The cross-veinlets are more irregular in course than normal.

On the whole we can state that the reduction shown by this tegmen is of "normal" type—that is, the reduced tegmen is similar to the tegmina of short-winged forms of Acrididae—even though such reduction constitutes a rare abnormality in *Syrbula admirabilis*. This agrees fully with the statement of Karny<sup>2</sup> concerning the reduction of flight organs of Orthoptera, in which he says: "Die Reduktion der Flugorgane bei den Orthopteren erfolgt in ganz gesetzmässiger Weise, und zwar nicht etwa durch gleichmässige Verkleinerung oder Rückbildung aller Teile, sondern vielmehr gewissermassen vom Apikalende aus, so dass der distale Teil bedeutend starker reduziert wird als der proximale."

We have, perhaps, to seek the cause of the teratological structure of this specimen in some inner physiological disturbance. Unfortunately the specimen was received in dried condition, so that it was impossible to study its internal anatomy. Detailed anatomical studies of such cases are desirable, since it is quite possible that such investigations would bring us much closer to an understanding of brachypterism and macropterism than at

---

<sup>2</sup>Karny, H. H.—Ueber die Reduktion der Flugorgane bei den Orthopteren. Zool. Jahrb., xxxiii: 27-40. 1912.

present. Thus Ramme<sup>3</sup> studying long-winged individuals of *Metrioptera roeselii* (Hgb.), has found a correlation existing between macropterism and the development of the gonads. All of the macropterous specimens examined by him showed definite signs of reduction in their gonads.

Some years ago a similar case of reduction of the left forewing in a dragon-fly, *Leptetrum quadrimaculatum* L., was described by O. John<sup>4</sup>, but without any examination of the internal anatomy.

---

<sup>3</sup>Ramme, W.—Verlust oder Herabsetzung der Fruchtbarkeit bei macropteren Individuen sonst brachypterer Orthopterenarten. Biol. Zentralbl., li: 533-540. 1931.

<sup>4</sup>John, O.—Reduktion eines Flügels bei einer Libelle. Folia Zool. et Hydrobiol., Riga, I: 177-180. 1930.

---

### INDEX TO THE FLORIDA ENTOMOLOGIST

An index to volumes 1 to 19 inclusive of the Florida Entomologist is now in preparation. This index contains a table of contents arranged by volumes and an index of the insects by specific and varietal names. This index is to be sold at 75c a copy. Subsequent volumes will have an index in the last number of each volume.

Complete sets of the Florida Entomologist from Volume I, Number 1 to date are available at this time. Missing numbers from sets can also be supplied. Orders should be sent to J. W. Wilson, Business Manager, Belle Glade, Florida. Prices supplied on request.

