

**2nd INTERNATIONAL CONGRESS
CONCERNING THE RHYNCHOTA FAUNA
OF BALKAN AND ADJACENT REGIONS**

PROCEEDINGS

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A parthenogenetic planthopper found in Greece

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In 1983, during the first meeting of this congress, a large *Delphacodes* population was found (Drosopoulos et al., 1983) living on *Carex riparia*, near Prassino, Nomos Florina. Although numerous females were collected not a single male could be found. A large sample of living material was brought to our laboratory, and a number of experiments were undertaken to learn more about its reproductive biology. A more extensive account of the experimental results is given by den Bieman and de Vrijer (in press).

In breeding experiments the population proved to be able to reproduce for more than ten generations in the complete absence of males. This means that this population represents the first case of true parthenogenesis found in delphacids, and the second case in Auchenorrhyncha.

Cytological analysis revealed that the karyotype of the females is triploid ($3N=44$), consisting of two female genomes ($N=14+X$) and one male genome ($N=14+0$). Surprisingly, the parthenogenetic females proved to be able to mate very easily with males of a Dutch (!) population of *Delphacodes capnodes*. Dissection demonstrated that thereby they were successfully inseminated. The progeny of these inseminated females again was purely female and triploid. In this respect the parthenogenetic females showed a remarkable analogy with the pseudogamous females found in *Muellerianella* (Drosopoulos, 1976) and *Ribautodelphax* (den Bieman, 1984).

Acoustic recording during courtship and mating demonstrated that the

parthenogenetic females produced calling signals which were very similar to those of *D. capnodes* females. In view of the fact that a parthenogenetic organism is not depending at all on a mate recognition system, this may seem a peculiar observation. It may indicate that the parthenogenetic form is of recent origin, and may have evolved from a pseudogamous ancestor.

Finally, the taxonomic position of the parthenogenetic population is discussed. Although it seems undisputable that this population belongs to the genus *Delphacodes*, there are several problems to be solved before a further formal designation should be undertaken. For the moment, it is suggested to refer to this population provisionally as: *Delphacodes spec. cf. capnodes* (parthenogenetic, triploid).

References

- Bieman, C.F.M. den, 1984. Parthenogenesis in Delphacidae. - Mitt. Schweiz. ent. Ges., 57 (4): 411.
- Bieman, C.F.M. den, and de Vrijer, P.W.F., (in press). True parthenogenesis for the first time demonstrated in planthoppers (Homoptera, Delphacidae). - Annls. Soc. Ent. Fr.
- Drosopoulos, S., 1976. Triploid pseudogamous biotype of the leafhopper *Muellerianella fairmairei*. - Nature 263: 499-500.
- Drosopoulos, S., Asche, M. & Hoch, H., 1983. Contribution to the planthopper fauna of Greece (Homoptera, Auchenorrhyncha, Fulgoromorpha, Delphacidae). - Annls. Inst. Phytopath. Benaki, 14: 19-68.