crossing the diploid species, Muellerianella fairmairei ♀ ♀ x M.brevipennis ♂ ♂. Backcrosses of the F_1 females to M.fairmairei produced only a few progeny, of which all were triploid females. Backcross of these females to M.fairmairei produced numerous matromorphous progeny very similar to the wild pseudogamous triploid "species" of M.-2-fairmairei-brevipennis.

FURTHER INVESTIGATIONS ON THE MUELLERIANELLA COMPLEX (DELPHACIDAE).

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The current research is a continuation of the work of Drosopoulos (1977). Some aspects on the geographic variation of the Muellerianella species complex are dealt with.

Distribution

Last year more information has been gathered on the distribution of M.brevipennis and M.faimairei. Because the sweepnet-method is unsuitable for routine collecting of M.brevipennis, literature data tend to underestimate the distribution and abundance of this species. Global distribution maps of the hostplants of both species combined with data from vegetation studies revealed that the foodplant of M.brevipennis, Deschampsia caespitosa has a much wider distribution, especially in Northern and Eastern Europe, than Holcus lanatus. H.lanatus, the foodplant of M.fairmairei, is only common in Western and Centra Europe.

Phenology

M.fairmairei seems to be a very flexible species in having one, two, or three generations per year depending on latitude, altitude and local climate. M.brevipennis is a more rigid species as regards diapause reactions. It always occurs in quite wet and relatively cool habitats where it has only one or two generations per year, depending primarily on latitude.

Crossing-experiments

Differences in food plant choice and acoustic behaviour are not sufficien to prevent interspecific mating. In some cases, a hybrid offspring is obtained but hybrid males are always sterile and sex-ratio's are skewed. Hybrid females which have an irregular meiosis and a low or zero fertility do not give rise to BI generation when crossed back with M.brevipennis males. Backcrossing of hybr

females with M.fairmairei males, results sometimes in a B1 or even B2 and B3 generation. Only at one occasion a triploid B1 generation has been produced, which gave use to an all-female progeny.

Occurrence of triploid forms

In the field, triploid females were found on many places in West Europe. Chromosome numbers in these females ranged from 39 to 42. In two of the most southern populations (Greece and Spain) only diploid animals were found.

GENITAL STRUCTURES - ACCIDENT OF DESIGN?

W.J.LeQuesne (Chesham, England).

For the recognition of critical species of many groups of insects, including a large proportion of leafhoppers, the most important structures are the male genitalia and the sound-producing equipment. For females, the shape of the ovipositor and seventh abdominal sternum are often useful at generic level, but are seldom diagnostic of critical species; one example described by Wagner a number of years ago involved the ovipositor of Macropsis inhabiting different species of Salix. I have also recently found that these provide characters to separate female Edwardsiana and Fagocyba. Differences in ovipositor form are presumably correlated with oviposition sites, but the function of the seventh abdominal sternum is less clear: this structure is pushed up in mating, so its form may be correlated with that of the male parameres or genital plates. However, I am not sure if the exact relationships between male and female parts during mating have been described. Incidentally, in critical species of the mirid bugs Ortholylus, Southwood found some internal organs, the K structures of the bursa copulatrix, providing diagnostic characters, but I have tried to use these, without success, in one or two genera of Auchenorrhyncha.

In fact, modern biology began with Linnaeus' realization over 200 years ago that flowering plants were best classified by studies of their reproductive organs, but entomologists were slower in realizing this. However, for the past 100 years or so, their real happy hunting ground for specific differences has been in the male genitalia, which have been widely used for leafhoppers during this century. The typical male aedeagus is a tube with one, or occasionally two, gonopores, which are the openings of canals running through the organ. The presence of two gonopores has arisen more than once, e.g. in Opsius, Ulopa, Notus,