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## The gall midge complexes (Diptera: cecidomyiidae) on spurges (*Euphorbia* spp.) in Europe

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### Abstract:

In Europe, one can find two generally similar galls on many species of spurge, a bud gall made up of many tightly folded leaves and an inflorescence gall. The bud galls act as an energy sink and always result in the death of the affected plant apex. The inflorescence galls prevent the development of seeds. Recent museum and field studies show that although both gall types occur on most spurges, each kind of gall on any particular spurge species is formed by a different gall midge.

The flower galls are made by *Dasineura capsulae* Kieffer and relatives. This complex of species, evidently restricted to spurges and kept for the present in *Dasineura*, is distinct from other species in that genus in having a bilaterally flattened ovipositor. A revision of these gall midges is in progress.

The bud galls, however, are caused by at least two and possibly three different genera of gall midges. They are the subject of a paper that I have submitted to the Annals of the Entomological Society of America. One genus, which will be described as the new genus *Spurgia*, is known from two species. *Spurgia esulae*, a new species, forms the bud gall on *Euphorbia esula* L. in Italy. The other, *S. capitigena* (Bremi) forms the bud gall on *Euphorbia cyparissias* L. in France, Switzerland, Italy, and Yugoslavia. The latter was once placed in the genus *Bayeria*, but only on the basis of superficial resemblances to that genus. *Spurgia* and *Bayeria* are not closely related. The bud gall on *Euphorbia palustris* L. in Germany and Sweden is formed by a true *Dasineura*, *D. schulzei* Rübssaamen, and that on *Euphorbia characias* L. in Sicily by *Janetiella euphorbiae* De Stefani Perez. The type specimens of this last species are lost, so specimens must

be reared again from typical galls before we can be certain that they belong in *Janetiella*. Larvae of at least the two *Spurgia* species may leave the gall to pupate or form a cocoon in the bud and remain there. Many multivoltine gall midges are only partially so: some specimens of the spring generation pupate directly, while some drop to the ground, where they remain as larvae until at least the following spring (Gagné, 1989). After the larvae of *Spurgia* leave the galls or build cocoons in the galls, the galls begin to rot.

Another gall midge, *Macrolabis lutea* Rübtsaamen, can be found as an inquiline or secondary inhabitant in both bud and inflorescence galls. This species is known from The Netherlands, France, Germany, and Hungary, and evidently attacks the galls after the gallmaker larvae have induced gall development. The white larvae of the *Macrolabis* can be found with dead or dying yellow larvae of *Spurgia*. Galls with *Macrolabis* gall midges apparently cause the gall to last longer than normal.

This research shows that many species of gall midges from similar galls on spurge remain to be tested for possible introduction. Because species not yet studied are likely to be new, their identity has to be confirmed and each has to be tested separately for host discrimination.

It is desirable to have a species name for a new introduction, but there may be times when a species might have been tested and should be introduced, but has not yet been described. Rather than wait for a name, which may be delayed by preparation of the description and the publication process, I recommend, assuming that voucher specimens are checked and retained, that introduction not be delayed for lack of a species name and that the species temporarily be designated by the plant species and locality the specimens were from, e.g., *Dasineura* sp. near *capsulae* from *Euphorbia esula* from Pisa. This has been done for a gall midge now in quarantine.

## Literature cited

Gagné, R. J. 1989. The plant-feeding gall midges of North America. Cornell University Press, Ithaca, New York. xi and 356 pp. and 4 pls.