

most of the cases, the diploid number is $2n = 36$; we also found $2n = 44$ and $2n = 30$. FISCHER (1987) described further incidence of diploid males in the parasitic lepto thoracines, *Epimyrma stumperi*, *Doronomyrmex kutteri* and *Harpagoxenus sublaevis*. Even in the latter species two completely triploid males were produced in an inbred strain. Single (up to two per individual) diploid, triploid and tetraploid cells were observed in the testes of many species. In *Chalepoxenus muellerianus* (1 male), *Epimyrma krausseii* (1 male), and *E. ravouxi* (2 males), among haploid cells between 4 and 15 diploid cells were found. It is striking that such completely or partially diploid males occurred in 6 out of 22 parasitic lepto thoracine species, but in none of the 43 independent species investigated (FISCHER 1987).

The presence of diploid *L. «muscorum»* males from the very first cycles of the artificial breeding must be underlined here. For example the colony 11183 (Lac-Mégantic, Frontenac co., Québec) has produced three diploid males as soon as the first summer passed in growth chamber; this means that these males were coming from brood produced partly in the field. The method used for the slide preparation (IMAI *et al.* 1977) cannot explain this high frequency of diploid males.

Until now the presence of diploid males still appears as a rare phenomenon in Hymenoptera. Among Formicids, it has been observed in *Pseudolasius* sp. (HUNG *et al.* 1972), *Rhytidoponera* spp. (WARD 1980), *Lasius alienus/niger* (PEARSON 1983) and *Formica pressilabris* (PAMILIO and ROSENGREN 1984). Apparently it is more frequent in *Solenopsis invicta* (ROSS and FLETCHER 1985). Some authors (WARD 1980; PAMILIO and ROSENGREN 1984) link the male diploidy with the inbreeding effect. Now, as we have stressed before, the presence of diploid males in *L. muscorum* did not seem to be related with the number of cycles spent in artificial conditions. In the particular case of *S. invicta*, ROSS and FLETCHER (1985; p. 898) wrote that the common occurrence of male diploidy in this species is causally related to the founder effect during colonization of North America. At the present time we cannot identify one general cause for this phenomenon.

HUNG *et al.* (1974) specified that the testes of diploid males in *S. invicta* were often atrophied; on the contrary those observed among diploid males of *L. muscorum* had a perfectly normal appearance.

CONCLUSIONS

The chromosome enumeration in different forms presently identified under the species name *muscorum* along with other nearctic species of *Leptothorax* (s.s.) has revealed a complex situation rather difficult to untangle completely from the data now available. Nevertheless they provide a better knowledge of the natural species hidden under the *muscorum* taxon as described by BROWN in 1955.