Myrmica host colony, where the *provancheri* brood is normally kept apart from the *Myrmica* chambers. However, *provancheri* workers enter the galleries of their hosts, frequently mount the *Myrmica* workers, and apparently gain food by vigorously licking ("shampooing"—Wheeler 1910) and begging their victims.

Soon after the description of *L. emersoni* Wheeler (1901), Holliday (1903) published a very accurate and comprehensive study on the peculiàr polymorphism of this little ant. She described, measured and dissected more than 1000 specimens from over 20 nests, and she discovered that only very few winged or deälate females were among them. About one third of all female individuals had to be characterized as "microgynes, ergatoid females, triocellate, biocellate and uniocellate workers", the remaining specimens were macroergates and microergates. Holliday also found out that all these ants had rather well developed ovaries, and a typical spermatheca. Surprisingly, she failed to judge whether sperm was present in the receptacula or not.

Recently we had investigated the social structures of the guest ants, *Formicoxenus nitidulus* (Buschinger and Winter 1976) and *F. hirticornis* (= *Leptothorax hirticornis* Emery) (Buschinger 1979) both of which have a polymorphism similar to that of *L. provancheri*, and a "functional monogyny" with always one fertile queen per nest, and often several inseminated but sterile "replacement queens" in addition. Fertile and sterile females there may either be normal, deälate queens or intermorphs, both often occurring together in the same colony. Thus we wanted to find out whether a similar system might be present in *L. provancheri*. With respect to a possible relationship between *provancheri* and *Formicoxenus* we further studied the sexual behavior, and the karyotype of this species.

2) Material and Methods

Leptothorax provancheri was collected in a moist pasture with a small rocky outcrop beside a gravel road, in the municipality of St-Augustin, near the limits of Ste-Catherine, Comté de Portneuf, on 23 August 1979. The guest ant and its host had developed flourishing populations only in the rocky part of this open habitat. Colonies were located in the soil and between the roots of grass and herbs growing on the flanks and atop of the rounded rocky outcrops of the meadow. The host species, *Myrmica incompleta* Provancher, inhabits these