

A preliminary report on the structures of the ovariole in the ant,
Lasius niger (LINNE) (Insecta: Hymenoptera: Formicidae)

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The structures of the ovariole of the ant were studied histologically in the imported fire ant, *Solenopsis saevissima richteri* (Formicidae: Myrmicinae) by Hermann and Blum (1965). We have also reported the fine structures of the ovarioles of queens and workers in *Camponotus japonicus* (Formicidae: Formicinae) (Kondo *et al.*, 1980; Kondo and Yamaguchi, 1980). In *C. japonicus*, we found tubular bodies in the oocyte and in the follicle cell. Recently, we observed the ovariole of the ant, *Lasius niger* (Formicinae).

Wingless reproductive females were collected immediately after swarming and were prepared for light and electron microscopic examinations.

The number of the oocytes externally recognized in an ovariole was usually only one (several oocytes were observed in *C. japonicus*). The number of the nurse cells accompanied with an oocyte ranged from 25 to 32 (11, 12, 12, 15, 24 and 25 cells in six cases in *C. japonicus*). It was suggested that five cell divisions were taken supposing that the nurse cells were derived from an ancestral cell. Large vesicular bodies, perhaps fragments of a germinal vesicle, which were observed in the oocyte in *C. japonicus* were also present in *L. niger*. But the tubular bodies, perhaps symbionts, which filled the oocyte and were scattered in the follicle cell were not observed at all. In *L. niger* these tubular bodies may be lacking. Intercellular bridge-like structures were observed between nurse cells. However, whether the oocyte connects directly with the nurse cell or indirectly was uncertain both in *C. japonicus* and in *L. niger*.

In *Myrmica rubra* (Formicidae: Myrmicinae) queens and queenless workers produce D-shaped eggs which are developed by fusion of the oocytes, while workers with queens produce O-shaped eggs or the trophic eggs (Brian and Rigby, 1978). Such fusion of the oocytes has been observed either in *C. japonicus* nor in *L. niger*.

Many problems are present on the structures of the ovarioles of the ants, further observations are necessary.

References

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