

A PRELIMINARY ECOLOGICAL CLASSIFICATION OF ANT COMMUNITIES IN IRELAND.

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Wheeler (1910) described seven ethological associations of ants in North America. This classification was based mainly on the type of plant community with which the ants were associated, and was as follows: the woodland (silvicolous), the glade (nemoricolous), the field (caespiticolous), the meadow (pratiniculous), the heath (ericeticulous), the sand (arenicolous), and the desert (deserticolous). In a study of the Irish ant fauna, some data were collected with the object of establishing a classification of the indigenous species along similar lines. Unfortunately it was not possible to complete the study but sufficient information was obtained to enable some general conclusions to be reached.

It became clear that Wheeler's classification is too elaborate for the impoverished ant fauna of Ireland and only three ant communities could be recognised:—

(a) *The low soil humidity (L.S.H.) fauna*, comprising ants that inhabit sandy soil or heath (*Erica-Calluna*) areas which are characterised by fluctuating but usually low humidities and by a considerable exposure to solar radiation.

(b) *The medium soil humidity (M.S.H.) fauna*, which is composed of those ants that inhabit the fields and glades and the drier parts of bogs where there is a rather constantly humid substrate and a lesser exposure to solar radiation.

(c) *The high soil humidity (H.S.H.) fauna*, found in areas where there is a constantly high soil moisture content and a low solar radiation, as for example, in woods and forests.

This classification might be based equally well on the soil structure, although this might be less convenient in practice. It should be pointed out, nevertheless, that the structure of the soil is of great importance to the ants as it is difficult for them to work and excavate their nests in very heavy soil. For example, although *Lasius flavus* F. is usually a mound builder, it becomes a lapidicolous species where the soil is too heavy to work.

In Ireland there are but two species, which are restricted to one type of community (stenotypic) *Stenamma westwoodi* Westwood and *Formica rufa* L., both of which occur in the H.S.H. Fauna and are rather limited in their distribution. The remaining species may be found in all three types of communities (eurytypic) although in varying proportions. This plasticity is associated with the adaptability of the fertilised female which may found the colony in a wide variety of microhabitats. It is