

occurrences all appear to have been of a sporadic nature, but the tendency for these forms to arise in *rubra* is of special interest in view of their regular occurrence in *ruginodis*.

Intermediate forms between *rubra* and *ruginodis* were widely assumed until the investigations of Brian and Brian (1949) showed that most of these were probably large *rubra* workers. The chief character that has been used to distinguish the species—the relative length of the epinotal spine in the female castes—has been shown to be correlated with head-width. Increasing size of worker as indicated by head-width is usually associated with increasing length of spine, so that the larger *rubra* workers may have the same length of spine as smaller individuals of *ruginodis*. This, accompanied by minor sculpture variations, has sometimes led to confusion between the species, but the more massive flat-topped petiole node of *ruginodis* compared with the peaked or rounded node of *rubra* provides an easily perceived and certain distinction between the species in all cases which have been examined by the writer. Apart from minor variations in sculpture and spine length, *rubra* appears to be one of the more stable of European *Myrmica* and has had fewer named variations than most of the other species.

*Myrmica ruginodis* Nylander, 1846

(Syn. *rubra* Linnaeus, auctt. (Yarrow, 1955))

This species is ubiquitous throughout Britain. It is present throughout the bleaker moorlands of N. Scotland and is the only ant recorded so far from the Shetlands and St. Kilda, but is equally common in S. Britain. Brian and Brian (1949) discovered this ant to consist of two incompletely dimorphic races, one polygynous with several small queens in each nest, the other monogynous with one large queen. These forms were named by the authors as var. *microgyna* and var. *macrogyna* respectively. In addition to queen size, there are characteristic differences in habitat and behaviour; *macrogyna* is more aggressive, will not normally accept strange queens into its nest, is more generally distributed and predominates in transitory habitats; *microgyna* readily accepts strange queens of its own type and is found in more stable habitats.

In Britain the two races appear to be fairly consistently developed over a large area of W. Scotland, Ireland and NW. England. In other areas the differences do not appear so clearly defined. There is little information from the Continent where *macrogyna* is undoubtedly the commonest form. There are only two references in the literature to small queens known to the writer—a record by Wasmann of a microgynous colony in Feldkirch, Holland (*in* Donisthorpe, 1927) and a reference to the Brians' work by Sadil (1951), in which the author does not comment on the prevalence or otherwise of *microgyna* in Czechoslovakia. This author, however, figures an example of a worker from Sobotka, so presumably this form, although morphologically indistinguishable from *macrogyna* in the worker caste, is to be found there.

Var. *microgyna* is distinctly developed in many areas of Scotland and Ireland especially in west coastal districts. Numerous strong colonies were found, for example, in Kintyre in 1956 along the sea shores. It was of some interest to note the apparent absence of *rubra* from this area, although it had