

been found in abundance in a previous season in Galloway in similar situations. In the English Lake District *microgyna* was very frequent in *Molinia* tussocks in the mosses (Collingwood and Satchell, 1956). Brian (*personal communication*) reports the discovery of this form in peat bogs in SW. England. These records suggest that *microgyna* tends to flourish in wet cool areas but, according to site distribution evidence from the Lake District and elsewhere, may be replaced by *rubra* in more sheltered places. It is not, however, limited to such areas and has been recorded from a wide variety of habitats including woodland and hillsides.

Throughout its known distribution in Britain *microgyna* is frequently completely sympatric with *macrogyna*. The writer has, for example, found the two forms actually nesting side by side at Allgreave, Cheshire, and in Wharfedale, NW. Yorks. Brian and Brian (1955) give further evidence to show how, by differences in mating behaviour and methods of colony reproduction, the two forms retain their separateness and consequently have some claim to be regarded as true species. The general evidence of incomplete dimorphism provided by the authors themselves, allied to the absence of any reliable means of morphological separation, do not at present justify this suggestion. Moreover, in Midland areas the two forms are frequently difficult to disentangle. One colony found near Matlock, Derbyshire, contained six queens of intermediate size, while another nearby had one. Colonies with three to four queens of intermediate to large size were frequent near Winchcombe, E. Glos., in April, 1956. Polygynous colonies in Scotland frequently contain up to 13 or more queens, but even in these there were considerable differences between the smallest and largest queens. In their original study, Brian and Brian (1949) found that 15 per cent. of the queens obtained from polygynous nests were larger than the smallest *macrogyna* queens. The writer has examined a similar number of examples and found over 34 per cent. in the larger size range and there is evidently a strong tendency to bimodality in this respect in polygynous colonies.

Since the term variety has now no validity in zoological nomenclature, Brian and Brian (1955) have proposed that the two forms *macrogyna* and *microgyna* be designated subspecies. This term is usually restricted to geographic or at least ecological races and cannot, therefore, be properly applied to them, since they can and do frequently occupy the same ecological niches in the same locality throughout their known area of distribution in Britain. The evidence so far available suggests that *microgyna* can scarcely be regarded as a stabilised form but may be an adaptive response of the species towards an oceanic type of climate.

Forel (1874) assumed the existence of forms intermediate between *ruginodis* and *sulcinodis*, to which he gave the name *ruginodis* var. *sulcinodo-ruginodis*. Donisthorpe (1927) attributed to this a variety found on Box Hill, Surrey, in which the workers had a somewhat striate frontal area but were otherwise like *ruginodis*. The writer also attributed certain variations found in N. Scotland (Collingwood, 1951) to this category but on careful re-examination they have proved to be aberrations of *ruginodis*. One worker has the narrow based but strong incurving spines of *sulcinodis* type; another series of workers have more or less striated frontal areas and both workers and queen are very dark, as in many examples of *sulcinodis*. Nevertheless from their general