

## A morphometric comparison of three closely related species of *Myrmica* (Formicidae), including a new species from England

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**ABSTRACT.** In the course of a population study on *Myrmica sabuleti* Meinert a miniature queen was found in some colonies. This paper describes the form as a new parasitic species, *Myrmica hirsuta* sp.n., and shows how an analogous male was identified. Twelve measurements were then made on a sample of males and females of this new species and these were compared with *M. sabuleti* and *Myrmica scabrinodis* Ny1. using a multivariate discriminating technique. The status of the new species is discussed.

### Introduction

This paper is divided into three parts. In the first part a new species, belonging to the *scabrinodis*-complex of the genus *Myrmica*, is described and in the second part a morphometric comparison is made between the new species with two other species belonging to the *scabrinodis*-complex. In the third part the new species is compared with similar *Myrmica* and its status is discussed.

In spring 1973, thirty-one colonies of *Myrmica sabuleti* Meinert were collected from an area of limestone grassland at Durlston, Purbeck, Dorset, U.K., for a population study that has been published by Elmes (1974); eight of these colonies contained miniature queens that at that time were called microgynes of *M. sabuleti*. Apart from their small size these queens could be distinguished easily from normal *M. sabuleti* queens by possession of much more body hair and an enlarged post-petiole. Subsequently, males that possess characteristics comparable to those of the small queens were found in some of these *M. sabuleti* colonies. This has led me to consider the small queens and analogous males as a separate species that is described below. Since the first discovery of the new species I have collected specimens from

three other sites in Dorset. These were chalk grassland in the Purbeck Hills, 10 miles from the Durlston site; wet heathland on Hartland Moor, National Nature Reserve, 10 miles from either of the two other sites; and from Lyscombe Down, an area of chalk downland in Central Dorset that is a considerable distance from any of the Purbeck sites. This shows that the form is widespread in Dorset and may well be common throughout Britain.

*M. sabuleti* is very close taxonomically to the species *Myrmica scabrinodis* Nylander so that for many years *M. sabuleti* was treated as a variety of *M. scabrinodis* rather than as a separate species. The worker forms are very hard to separate although males are easily separated by relative scape length. The purpose of the second part of this paper is to investigate these three species by morphometry in an attempt to show that they are well separated by their morphology. Initially, a large sample of queens was investigated using four body measurements which were compared directly; later, a larger number of measurements were made upon a smaller sample of queens and males and these were compared by a discriminant analysis.

### *Myrmica hirsuta* sp.n.

(i) *Material examined.* 145 queens were discovered living in eight colonies of *Myrmica*

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