

length 0.50 mm, length of a typical bristle 0.14 mm; see Fig. 1 for measurement.)

Thorax: is the same colour as the head having fine striations. The wings are as *Myrmica* with a closed discoidal and partially dissected cubital cell. The legs are yellowish brown with large pectinate spurs on the tibia of the first pair and reduced pectinate spurs on the other two pairs. The spines are rudimentary and have some bristles. (Thorax width 0.8 mm, thorax length 1.80 mm; see Fig. 1.)

Abdomen: is black and shiny with obvious long hairs. These are particularly visible on the petiole and post-petiole. The post-petiole is wide compared to headwidth and is wider than it is high, contrasted with *M. sabuleti* where the post-petiole is higher than it is wide. (Post-petiole width 0.56 mm, post-petiole height 0.56 mm, post-petiole length 0.46 mm, petiole width 0.42 mm, petiole length 0.44 mm; see Fig. 1.)

(iv) *Position in current keys.* It was first thought that these specimens were microgynes of *M. sabuleti* for they possess many obvious *Myrmica* characters and appear to be very microgyne like in size and range compared to *M. sabuleti* queens (Elmes, 1974). However, the larger petiole size and the obvious hairiness are definite parasitic characters that can be seen in many inquiline and parasites of *Myrmica* species (Kutter, 1973). It will be shown later (Fig. 4) that although hairiness is one of the most obvious characters of this species, hence the name, it is a very viable character. No worker form has yet been discovered and evidence presented later will suggest that no worker form exists for this species. If it is attempted to key the species out using the key given by Collingwood (1958) the queens would key out at couplet six as *Myrmica scabrinodis*. They could then be split at this stage by inserting a division which would read 'specimens small with many upright hairs easily visible, having relatively large post-petioles and a wide frons, frontal index FI about 40', giving *Myrmica hirsuta* then: 'specimens with relatively few hairs and a normal width petiole and post-petiole', go to 7. Couplet 7 would then read as couplet 6 of Collingwood (1958). Similarly males would key out at couplet 5 as *Myrmica sabuleti* which separates *Myrmica scabrinodis*

from *Myrmica schencki* Emery; *M. hirsuta* could be separated at couplet 5 from these others by the width of the post-petiole and their hairiness. Using the more recent key by Bolton & Collingwood (1975), *M. hirsuta* 'keys out' as *M. scabrinodis* or *M. sabuleti*; it then can be easily separated from these in the manner outlined above. If Kutter's classification (Kutter, 1973) is used the female of the species can be coded as A1, B3, C5, D9, E12, F16, G19, H22, I26, K29, M33, N38, O41, Q48?, host *M. sabuleti*.

(v) *The separation of the male form of M. hirsuta.* In 1974 211 males were collected from five of the colonies at Durlston, three of these colonies were known to contain *M. hirsuta* queens. All the specimens were weighed and a small number from each colony was mounted. Fig. 3 shows the distribution of fresh weights of these males; this distribution is best described by two normal curves that are shown superimposed, giving a fit of 0.90 by χ^2 . The means are 2.9 ± 0.4 mg and 4.1 ± 0.6 mg. Examination of the mounted sample showed that a proportion of the specimens were much more hairy than the others and that these all come from the colonies known to contain *M. hirsuta* queens; the histogram of weights of the hairy specimens (dotted) and the less hairy specimens (vertical hatching) are shown superimposed on Fig. 3. A glance at Fig. 3 shows that the hairy specimens are associated with the normal curve having the smaller mean and comparison with specimens from other sites shows that the less hairy individuals are the typical form of *M. sabuleti*. It seems reasonable to conclude that the smaller hairy form of the male which is associated with colonies that contain the miniature females of *M. hirsuta* is the male of that species.

(vi) *Evidence for a worker form of M. hirsuta.* The data in this section have all come from the thirty-one colonies that were collected from Durlston (Elmes, 1974). There is no positive evidence that shows whether *M. hirsuta* has a worker form or not but all the indirect evidence points to the absence of a worker form. First, the frequency distribution of headwidths of 196 workers from *M. sabuleti* colonies containing *M. hirsuta* and 575 workers from normal *M. sabuleti* colonies were examined and it was found that both distributions were best