

M. hirsuta, 10 queens from Bindon Hill, Dorset, GB, and 9 queens from the DDR.

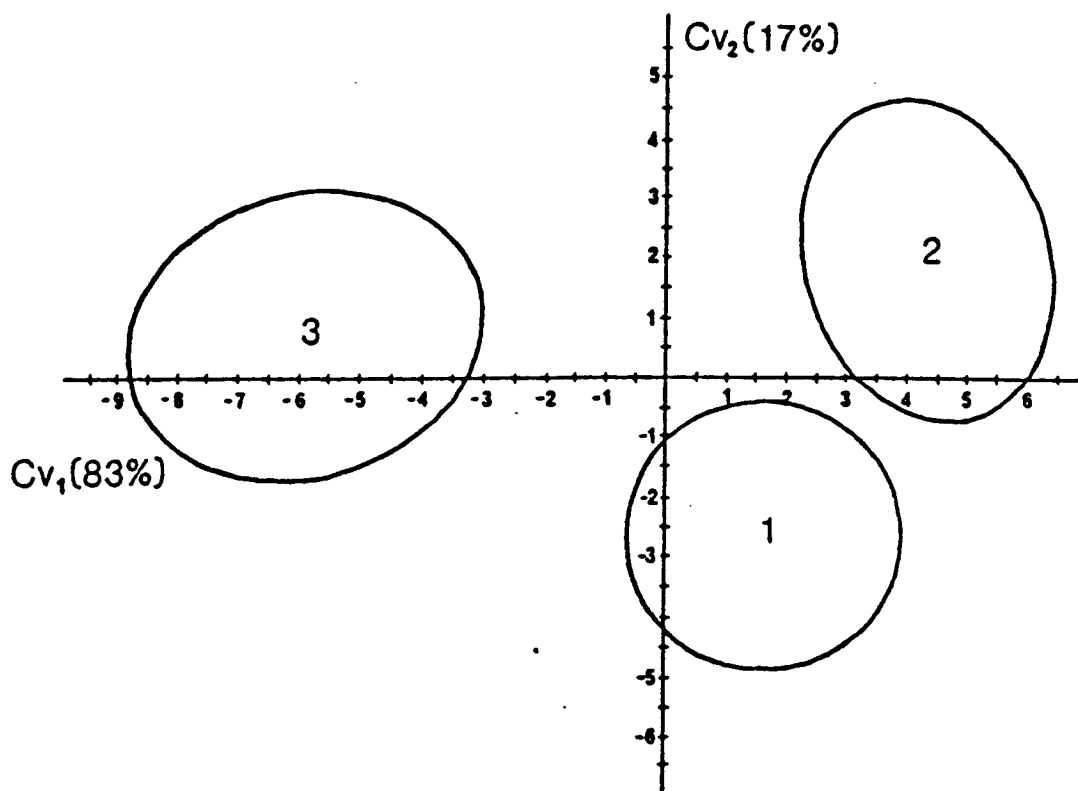


Figure 1: Distribution of the Cv scores for 40 queens of each of *M. scabrinodis* (1), *M. sabuleti* (2), *M. hirsuta* (3). The ellipses are the 95% confidence limits. These are the same individuals used by Elmes (1978).

In every case, treating these as separate groups resulted in them overlying the correct species, being indistinguishable from the base samples. For clarity of illustration, the extra queens of each species have been pooled to give groups of 20, 20, 19, respectively (Fig. 2). Thus, for determining these species by the use of the 11 morphometrics and comparison with the base groups (Fig. 1), the method is quite robust.

RESULTS

QUEENS

The putative *M. vandeli* from Yenne were included and compared with the groups obtained by combining the groups 1 and 1a, etc., from Fig. 2. This produced a clear separation of the *M. vandeli*. Two further samples of 9 suspected *M. vandeli* queens collected from the Massif Central and 10 queens from St Bonnet, Hautes Alpes, were added, and as expected, these were not discriminable from the Yenne sample. For clarity, these 19 queens are illustrated as one group (4a) in Fig. 3.