their territories. The 11% of unoccupied stations might arise if the baits fell in suitable but ant-free spaces between colonies or in unsuitable areas or areas which had not yet been colonized.

Of the 139 occupied baits fifty-nine had *Lasius alienus* (42%), thirty-nine *L. niger* (28%), twenty-three *Tetramorium caespitum* (17%), nine *Formica fusca* (6%), three *Myrmica sabuleti*, three *M. scabrinodis*, two *Tapinoma erraticum* and one *Myrmica ruginodis*. Thus 76% were Formicinae, 22% Myrmicinae, and 2% Dolichoderinae: *Lasius* species alone accounted for 70%.

In the further analysis of these results only stations with the four most common species and the ant-free stations can be examined statistically, general observations must suffice for the rest.

THE HABITAT

The correlation coefficients between the twelve variables that characterize the habitat have been calculated and set out in matrix form (Table 1). These are derived from the five group means (four species of ant and no-ants) not from 147 items of station data for the former are theoretically more appropriate in discussing the relations between species.

Table 1. *Correlation matrix (between groups); coefficients* × 100

Variable	Code	1	2	3	4	5	6	7	8	9	10	11	12
Height	1	–	−82	−95	66	99	29	80	−77	−88	−99	24	47
Moisture	2		–	92	−89	−85	−65	−92	99	99	75	−61	−43
Organic	3			–	−81	−96	−39	−82	90	95	93	−51	−58
Temperature	4				–	69	37	88	−90	−87	−63	84	70
Bare	5					–	33	82	−80	−91	−98	26	46
Calluna vulgaris	6						–	52	−68	−60	−15	25	−35
Erica cinerea	7							–	−90	−93	−73	49	40
E. tetralix	8								–	97	70	−67	−42
Molinia caerulea	9									–	83	−55	−44
Agrostis setacea	10										–	−22	−54
Ulex minor	11											–	71
Pteridium aquilinum	12												–

For three degrees of freedom a value of 0·878 has 5% probability and 0·959 has 1% probability.

It should be emphasized that the five sets of group means are not to be interpreted as five random observations from a multivariate distribution. In that case the estimation and further analysis of a correlation matrix based on such a small sample would not be justified. The randomness shows itself in the errors of estimation of the group means, which are themselves fixed quantities. These errors are small compared with between group differences, in view of the reasonable sample size, and they are now being ignored for simplicity. Subsequent analysis is not concerned in any way with statistical inference, but with deriving and interpreting a simple description of the geometrical configuration obtained when the five group means are represented by points in twelve dimensional Euclidean space.

Notice that the correlations with height separate the variables into two clusters: those with positive and those with negative values. Each of these clusters, shows positive correlation between its component variables. The smaller, negative group comprises moisture, organic matter and the plants *Erica tetralix*, L. *Molinia caerulea* (L.) Moench and *Agrostis setacea* Curt. the first two of which at least are well known as inhabitants of wet places which tend to accumulate organic matter. The larger positive and less compact