

TABLE 9. Step-wise multiple regression between distribution type K and 11 environmental variables.

| Variable entered | Cumulative proportion of sum of squares reduced | Regression coefficient | t |
|---|---|------------------------|-------|
| Bright sunshine hours | 0.071 | 0.0631 | 2.776 |
| Intercept -0.146. Correlation coefficient 0.266 (p<0.01). | | | |

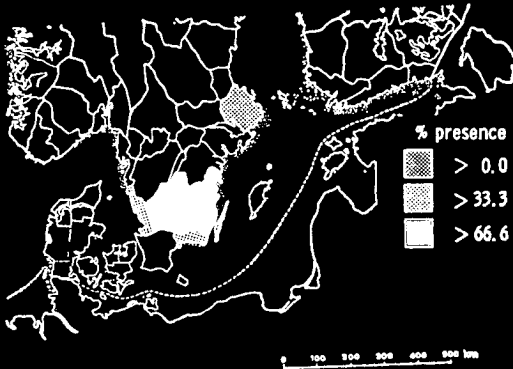


FIG. 68. Distribution Type K: *Lasius bicornis* (Förster) and *Polyergus rufescens* (Latreille).

to Northeastern Europe and Siberia north of latitude 60° (DLUSSKY, 1967) and not found in the British Isles or Central Europe. The other species are characteristic of woodland and upland areas of North Britain, the mountains of Central Europe and are also widely and abundantly distributed throughout the northern coniferous forest belt from Norway to Kamchatka. According to the regression analysis, the distribution of these species is positively correlated with altitude and latitude and also with bright sunshine with increasing latitude (Table 8).

Distribution Type J

This includes two species only, *Leptothorax corticalis* (Schenck) and *Camponotus fallax* (Nylander) (Figure 67). None of the variables examined are important in influencing their distribution. Both species are very local in Central Europe, mainly associated with old deciduous woodland and are probably relict species with a discontinuous or mosaic distribution north of latitude 50°. *C. fallax* becomes much more common in South Europe and the Mediterranean area including North Africa but *L. corticalis* is sparsely distributed in Europe and is one of the least known of the European *Leptothorax* species.

Distribution Type K

This includes *Polyergus rufescens* (Latreille) and *Lasius bicornis* (Foerster) (Figure 68). The only significant variable for this group is hours of bright sunshine which however only accounts for 7.1 % of the observed variation according to the regression analysis (Table 9) suggesting that these also are relict species in North Europe with little relationship to the present environment. *P. rufescens* is not un-

TABLE 10. Step-wise multiple regression between distribution type L and 11 environmental variables.

| Variable entered | Cumulative proportion of sum of squares reduced | Regression coefficient | t |
|---|---|------------------------|--------|
| Latitude | 0.063 | -0.1392 | -1.978 |
| Length of the growing season | 0.109 | -0.1039 | -2.443 |
| Inland versus island clima | 0.156 | -0.1486 | -2.765 |
| Boreal versus oceanic clima | 0.192 | -0.0104 | -2.344 |
| Mean annual atmosph. pressure | 0.206 | 0.0810 | 1.769 |
| Bright sunshine hours | 0.218 | 0.0444 | 1.196 |
| Intercept 1.319. Multiple correlation coefficient 0.421 (p<0.01). | | | |