Fig. 2. Scatter diagram of the first two axes of a principal component analysis of the morphology of workers of *Plectroctena mandibularis* (⌐) and *P. conjugata* (■).

The geographical distribution of samples of workers covered most of the eastern half of southern Africa (Fig. 3), allowing an assessment of Arnold's (1926) hypothesis of geographical size variation. The first axes of a canonical correlation analysis showed strong positive loadings for both latitude and longitude, but a high score for petiole length only (Table 3); the loadings of the remaining measurements were of similar, small magnitude and of mixed sign (*i.e.* variously positive and negative). The morphological axis showed a separation of the taxa (Fig. 4) similar to that on the first axis of the principal component analysis (Fig. 2), with *P. mandibularis* generally scoring higher than *P. conjugata*. However, the canonical correlation was only 0.62, and no marked geographical trend emerged (Fig. 4). The second axes showed weaker correlation (Table 3), with a strong loading for latitude but not longitude, and emphasis on funicular segment length and eye length. This pattern parallels the results of the principal component analysis, indicating that the second principal component summarizes geographical variation, and implying that that variation is small relative to the overall variation in the sample.

Morphometric variation: queens

The 18 queens formed a single, diffuse cluster when the first two axes of the principal component analysis were plotted against one another.

The first axis differentiated specimens on size, but characterized only 68.4 % of the total variation. The second axis had a high weighting (0.8) for eye length, but failed to distinguish the taxa. The remaining details of the analysis were similar to

Table 3. Results of canonical correlation analysis of morphology and sample location for workers of *Plectroctena mandibularis* and *P. conjugata*.

	CV1	CV2
Eigenvalue	0.3827	0.1974
Canonical correlation	0.6186	0.4442
Wilk's lambda	0.4955	0.8026
Chi-square	121.12	37.92
d.f.	16	7
P	0.0000	0.0000
Coefficients		
Log_{10}(head length)	−0.36162	0.67113
Log_{10}(mandible length)	0.24693	−0.98377
Log_{10}(scape length)	−0.34650	−0.09114
Log_{10}(eye length)	−0.38172	−1.48553
Log_{10}(petiole length)	2.34857	−0.66132
Log_{10}(dorsal petiole width)	−0.60227	0.99401
Log_{10}(funicular segment length)	−0.65837	1.70958
Log_{10}(funicular segment width)	0.50363	−0.13773
Latitude	1.20386	0.96842
Longitude	1.54448	−0.04097