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Bombus villarricaensis is but a junior synonym of *Bombus ruderatus*

Dr. P. H. Williams of London and Dr. A. van Doorn of Berkel-Rodenrijs have kindly drawn my attention to a paper by Arretz & Macfarlane (1986) of which I was unaware. Should I have known that publication earlier, my manuscript on *Bombus villarricaensis* (Van Asperen de Boer, 1992) would obviously not have been submitted, or withdrawn in time before publication. Arretz and Macfarlane describe with precision the introduction in 1982-83 of some 400 queens of *Bombus ruderatus* (Fabricius) from the South Island of New Zealand into Chile. They were released at Cunco and Coipue close to Temuco in the Chilean Lake District.

Bombus villarricaensis is thus but a junior synonym of *B. ruderatus* and my description would merely provide proof of a successful introduction. The study of morphological and colour differences between geographically iso-

lated populations of the same bumblebee species might – more positively – provide some insight into the degree and rate of the occurrence of such changes. Gurr (1964) described the distribution of bumblebees introduced from England into the South Island of New Zealand. Apart from *B. ruderatus* he took also specimens of *B. terrestris* Linnaeus, *B. hortorum* Linnaeus and *B. subterraneus* Linnaeus. Gurr did not comment on differences between those specimens and their English ancestors.

In my description of the Chilean population differences were noted with European *B. ruderatus*. Specimens from New Zealand not being available to me I have not been able to assess whether the observed differences are due to a century of New Zealand conditions or to seven years of development in the Chilean Lake District. However a preliminary plot of parameters characteristic of body proportions in a triangular graph (fig. 1) of 9 queens of *B. ruderatus eurynotus* (Vogt) from France, 20 queens from Chile and 14 queens of *B. ruderatus perezi* (Krausse) from Corsica in the author's collection shows that the spaces occupied are not identical.

Further study of such data on insular and non-insular populations and subspecies might well be rewarding.

References

- ARRETZ, P. V. & R. P. MACFARLANE, 1986. The introduction of *Bombus ruderatus* to Chile for red clover pollination. – *Bee World* 67: 15-22.
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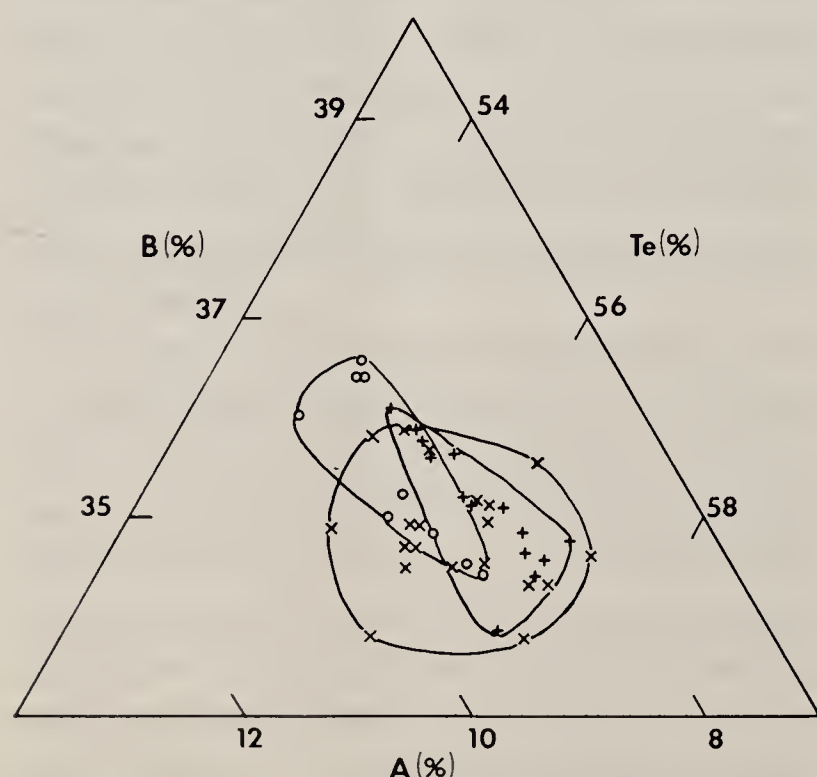


Fig. 1. Triangular graphing of 'malar space' (A), 'radial length' (B) and 'distance between tegular margins' (Te) for 20 *B. villarricaensis* queens from Chile (x), 9 queens of *B. ruderatus eurynotus* (Vogt) from France (o) and 14 queens of *B. ruderatus perezi* (Krausse) from Corsica (+).