



L. filamentosa



L. laniflora



L. macrantha



L. grandiflora



L. globulifera



L. filamentosa



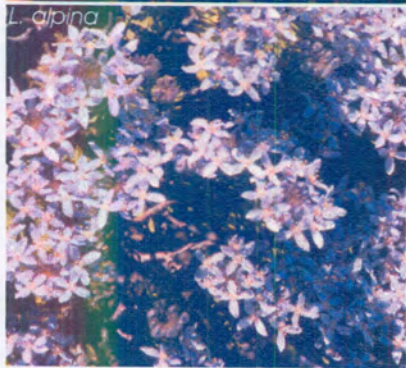
L. pudens



L. eriocephala



L. pomposa



L. alpina



L. pomposa

A TAXONOMIC REVISION OF *LACHNAEA* L. (THYMELAEACEAE)

by

JOSEPHINE BERTHA PAULINE BEYERS

Submitted in partial fulfilment of the requirements for the degree

PHILOSOPHIAE DOCTOR

in the Faculty of Natural-, Agricultural- and Information Sciences
(Department of Botany)

UNIVERSITY OF PRETORIA

PRETORIA

Promoter: Prof. Dr A.E. van Wyk

April 2000

ABSTRACT

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Lachnaea L., a genus endemic to the Cape Floristic Region, occurs almost exclusively in fynbos vegetation. In this revision a brief taxonomic history of *Lachnaea* is presented. Palynology and chromosome numbers were found to be taxonomically insignificant at specific level. Evidence from macromorphology, leaf anatomy, ecology and geographical distribution is used as the basis for species delimitation. Circumscription of the genus is extended to include the species of *Cryptadenia* Meisn. Previously proposed sections in *Lachnaea* are not upheld. Four species and all varieties are reduced to synonymy; 12 species and two subspecies are newly described and one new name is proposed. Forty species and two subspecies are now recognised. Geographically most species are concentrated in the 3319 (Worcester) grid. A phylogenetic hypothesis of *Lachnaea* resulting from two cladistic analyses is presented. The results of the analyses show that *Lachnaea* is monophyletic and that the sections are paraphyletic. The two analyses produced mixed resolution regarding the solitary-flowered species and gave conflicting results with regard to the evolutionary pathway of certain characters. Allopatric speciation appears to have been the dominant process in *Lachnaea*. Additional variables that may have governed diversification are altitudinal difference, allochory and post-fire regeneration strategies. The taxonomic treatment includes keys to the species and subspecies, detailed descriptions with notes on nomenclature, diagnostic features, relationships, distribution, ecology and conservation status. Line drawings and a distribution map are provided for each species.

KEYWORDS: anatomy — conservation — cytology — ecology — morphology — palynology — phylogeny — phytogeography — speciation — systematics.

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