

DECLARATION BY THE CANDIDATE
**A CONTRIBUTION TO THE TAXONOMY OF THE GENUS
CARDUUS L. (COMPOSITAE) IN KENYA**

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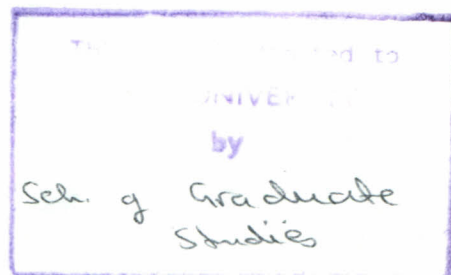
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ABSTRACT

This study is aimed at delimiting those *Carduus* species in Kenya that show very close morphological affinities and have in the past proved difficult to separate and establishing whether infraspecific ranks exist in taxa where they have been hinted at by previous workers.

It is based on herbarium specimens deposited at the East African Herbarium (EA) and those obtained on loan from the University of Uppsala Herbarium (UPS) and the Royal Botanic Garden, Kew Herbarium (K) but originally collected from Kenya. Fresh material collected from the field (e.g. Nyeri and Timboroa) have also been examined for comparison. Six to ten measurements of the length, width or both were taken from components of mature flowers (e.g. the phyllaries, disc florets, styles, anthers and achenes) and leaves (e.g. leaf lobes, interlobal distance, spines, petioles) using a hand ruler calibrated in millimetres. Pollen grains obtained from herbarium specimens have been acetolysed and used for Light Microscopy (LM) and Scanning Electron Microscopy (SEM). Under light microscopy, measurements of the pollen size, spine length and interspinal distance have been taken from 15-25 grains of each species. Scanning Electron Microscopy was used to take micrographs of pollen and fruit ultrastructure.

Features of the phyllaries, disc florets and leaves in *Carduus* species found in Kenya vary and have been used to construct keys and delimit the species. Intraspecific delimitations have been made in *Carduus chamaecephalus* (Vatke) Oliv. & Hiern and *Carduus keniensis* R.E.Fries based on leaf features such as shape, margins, lobes, surfaces and number of leaf segments and length of the style, anthers and achenes. A new combination proposed at the subspecific level is *C. chamaecephalus* (Vatke) Oliv. & Hiern subspecies *nanus*. Nine species have been recognized, including an unknown *Carduus* species. *Carduus platyphyllus* has been reinstated back to the specific level. Pollen and fruit ultrastructure have not been found useful in the delimitation of the species.

This study has refined the taxonomy of the genus in Kenya and has reasonably delimited species previously considered to be very close and difficult to separate viz., *Carduus kikuyorum* / *Carduus nyassanus* and *Carduus chamaecephalus* / *Carduus platyphyllus* and has also accorded intraspecific recognition to what in the past have been variant vicarious populations.