Two new species of Oxalis (Oxalidaceae) from the Greater Cape Floristic Region

JAN SUDA1,2, JANA KREJČÍKOVÁ1,2, RADKA SUDOVÁ2, KENNETH C. OBERLANDER2,3 & LÉANNE L. DREYER4,5

1Department of Botany, Faculty of Science, Charles University in Prague, Benátská 2, Prague, CZ-128 01, Czech Republic
2Institute of Botany, Academy of Sciences of the Czech Republic, Průhonice 1, CZ-252 43, Czech Republic
3Department of Conservation Ecology and Entomology, Stellenbosch University, Private Bag XI, Matieland, 7602, South Africa
4Department of Botany and Zoology, Stellenbosch University, Private Bag XI, Matieland, 7602, South Africa
5E-mail ld@sun.ac.za

Abstract

Two new multifoliolate species of Oxalis L. (Oxalidaceae) from the Hantam Karoo region of South Africa are described and illustrated: Oxalis carolina and O. filifoliolata. Both species occur in single populations in the extremely geophyte-rich area on the Bokkeveld Plateau in the Northern Cape Province. Morphological characteristics, phylogenetic position, habitat description and conservation status of the new species are provided, in addition to a diagnostic comparison with other phenotypically similar Cape species. Fifteen multifoliolate Oxalis species are currently recognized in South Africa, disregarding multifoliolate varieties of otherwise trifoliolate species. A key for multifoliolate Oxalis species known from the Bokkeveld Plateau is presented.

Key words: Cape Floristic Region, genome size, Oxalidaceae, phylogeny, South Africa, taxonomy

Introduction

With ± 200 species and many intraspecific taxa, Oxalis L. (Oxalidaceae) is the largest geophytic genus in the Greater Cape Floristic Region of South Africa (Dreyer & Makgakga 2003). Several new species have been described recently, including O. ericifolia Oberlander & Dreyer (2009: 242) from the Knersvlakte and O. saltusbelli Dreyer & Roets (2009: 113), a multifoliolate species from the Bokkeveld Plateau in the Northern Cape Province. Multifoliolate leaves are restricted to a small, but phylogenetically diverse, group of South African Oxalis species (Oberlander et al. 2011). In his monograph of the genus in South Africa, Salter (1944) recognized 14 multifoliolate species, 12 of which are still recognized (Dreyer & Makgakga 2003, Dreyer et al. 2010), in addition to four multifoliolate varieties of otherwise trifoliolate species. Two unusual and very distinct multifoliolate Oxalis taxa were discovered north of Nieuwoudtville in the Northern Cape Province during field work collecting species for cytogenetic analyses. We describe these species as O. carolina J. Suda & Sudová and O. filifoliolata J. Suda & Krejčíková, and evaluate their systematic position based on DNA sequence data, morphology and karyological evidence. In addition, we provide an updated key to all multifoliolate Oxalis species reported from the Bokkeveld Plateau, to facilitate identification of this distinct group in the geophyte-rich area.