



PHYTOTAXA

78

The endemic flora of Morocco

HASSAN RANKOU^{1,2,3}, ALASTAIR CULHAM³, STEPHEN L. JURY³
& MAARTEN J. M. CHRISTENHUSZ⁴

¹Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3DS, U.K. E-mail: h.rankou@kew.org

²The Linnean Society of London, Burlington House, Piccadilly, London W1J 0BF, U.K.

³Centre for Plant Diversity and Systematics, The Harborne Building, School of Biological Sciences, University of Reading, Whiteknights, Reading, RG6 6AS, U.K.

⁴Botany Unit, Finnish Museum of Natural History, Postbox 7 (Unioninkatu 44), University of Helsinki, FI-00014 Helsinki, Finland.



Magnolia Press
Auckland, New Zealand

HASSAN RANKOU, ALASTAIR CULHAM, STEPHEN L. JURY & MAARTEN J. M. CHRISTENHUSZ

The endemic flora of Morocco

(*Phytotaxa* 78)

69 pp.; 30 cm.

1 Feb. 2013

ISBN 978-1-77557-096-7 (paperback)

ISBN 978-1-77557-097-4 (Online edition)

FIRST PUBLISHED IN 2013 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: magnolia@mapress.com

<http://www.mapress.com/phytotaxa/>

© 2013 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1179-3155 (Print edition)

ISSN 1179-3163 (Online edition)

Table of contents

Abstract	3
Introduction	3
Biodiversity and endemism	3
Floristic analysis of the endemic Flora	5
Distribution of the endemic flora	6
Ecoregions of the endemic flora	9
Conclusions	10
Acknowledgements	11
References	11
Checklist	13

Abstract

Morocco is characterized by high vascular plant diversity with an estimated 4200 species and subspecies of which 22% are endemic. This study presents an updated list of the endemic species in the Moroccan flora following the classification of APG III, including comments on their geographical distribution and ecoregions. The endemic flora contains 879 species and subspecies in 55 families and 287 genera. Three new combinations are proposed. The High Atlas, Middle Atlas and the Rif mountains are the three richest floristic regions for endemic species, but the endemics are not restricted to these floristic regions only. Conservation efforts are therefore necessary in both the Mediterranean and Saharan ecoregions to preserve the biodiversity and botanical richness of Morocco.

In this updated checklist we propose a new combination (*Verbascum demnatensis*) and a new name (*Verbascum hamidouii*) in the genus *Verbascum* (Scrophulariaceae).

Introduction

The flora of Morocco is one of the most diverse in the Mediterranean region and the richest in North Africa (Sauvage 1954) with about 4200 taxa including 1282 subspecies (Valdés *et al.* 2002). This large number of vascular plants with a high percentage of endemic species places Morocco in an important position among other Mediterranean countries (Table 1).

This high plant diversity is explained by the geographical position of Morocco, its varied topography, geology, ecoregion and climate. In prehistory Morocco was a pathway for flora and fauna, spreading to and from the Macaronesian Islands especially the Canary Islands, and, more importantly, Morocco formed a land bridge between Europe and Africa. Morocco is situated at floristic crossroads due to two lengthy (c. 2800 km) sea coasts along the Atlantic Ocean and the Mediterranean Sea. This has resulted in a high habitat diversity and ecoregions caused by a variety of Mediterranean type climates along the coast, and from the Sahara in the south to the moist oceanic climate of the north. In addition elevational differences are great, with montane climates in the high mountain summits of the Middle Atlas, High Atlas, Anti Atlas and Rif, several peaks of which exceed 2000–4000 m elevation.

Biodiversity and endemism

The Moroccan flora contains about 920 genera and 130 families (Fennane & Ibn Tatou 2005, 2008). However, eight important families contain over 100 species, almost 50% of the flora. These families are in order of importance: Asteraceae (c. 500 spp.), Fabaceae (c. 400 spp.), Poaceae (c. 300 spp.), Caryophyllaceae (c. 217 spp.), Lamiaceae (c. 210 spp.), Brassicaceae (c. 185 spp.), Apiaceae (c. 160 spp.) and Liliaceae (c. 110 spp.). Other important families but with less than 100 species are: Scrophulariaceae, Plantaginaceae, Orobanchaceae, Amaranthaceae, Boraginaceae, Cistaceae, Cyperaceae and Ranunculaceae. Some families contain less than