

## CONTENTS

Preface .....	vii
<b>L. Selbmann, G.S. de Hoog, A. Mazzaglia, E.I. Friedmann and S. Onofri: Fungi at the edge of life: cryptoendolithic black fungi from Antarctic desert</b>	
Abstract .....	1
Introduction .....	1
Material and methods .....	4
Sampling sites .....	4
Sampling and isolation .....	4
Morphology .....	4
Physiology .....	6
DNA extraction .....	6
PCR conditions .....	6
Sequencing, alignment and phylogenetic tree reconstruction .....	7
Results .....	10
Physiology .....	10
SSU phylogeny .....	10
ITS sequencing data .....	10
Descriptions of species isolated .....	13
<i>Friedmanniomyces endolithicus</i> .....	16
<i>Friedmanniomyces simplex</i> .....	16
<i>Cryomyces antarcticus</i> .....	19
<i>Cryomyces minteri</i> .....	21
Insufficiently characterised strains .....	21
Discussion .....	22
Acknowledgements .....	29
References .....	30

### **G.S. de Hoog, E. Göttlich, G. Platas, O. Genilloud, G. Leotta and J. van Brummelen: Evolution, taxonomy and ecology of the genus *Thelebolus* in Antarctica**

Abstract .....	33
Introduction .....	33
Material and methods .....	34
Sampling sites in Antarctica .....	34
Sampling .....	36
Isolation .....	36
Cultivation and microscopy .....	36
Exact ascospore counts .....	38
Ecophysiology .....	38
DNA extraction .....	38
Microsatellite fingerprinting .....	38
Sequencing .....	38
Alignment and phylogenetic analysis .....	39
Statistics .....	39
Results .....	40
Discussion .....	46
Phylogeny .....	46
Taxonomic support by rDNA ITS and $\beta$ -tubulin sequence data .....	50
Ecology .....	51
Evolution .....	51
Taxonomic part .....	57
The genus <i>Thelebolus</i> Tode : Fr .....	57
Generic description .....	57
Notes .....	57
Dichotomous key to the species of <i>Thelebolus</i> .....	63
Accepted species of <i>Thelebolus</i> .....	63
<i>Thelebolus microsporus</i> .....	63
Excluded .....	64
Description .....	64
Habitat .....	64

Distribution .....	64
Selected illustrations .....	65
Additional specimens and cultures examined .....	65
Notes .....	66
<i>Thelebolus stercoreus</i> .....	66
Excluded .....	68
Description.....	69
Distribution .....	69
Selected illustrations .....	69
Additional specimens and living cultures examined .....	70
Notes .....	71
<i>Thelebolus globosus</i> .....	72
Description.....	72
Distribution .....	72
Notes .....	72
<i>Thelebolus ellipsoideus</i> .....	72
Description.....	73
Distribution .....	73
Notes .....	73
General conclusions .....	73
Acknowledgements .....	73
References.....	73