



**AUSTRALIAN SPECIES OF THE GENUS *SEPTORIA* SACC.
A MORPHOTAXONOMIC REVISION**

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Preface

The genus *Septoria* is one of the largest genera of plant pathogenic fungi. In Australia a number of species have been described from native plant hosts and an even larger number have been reported on agricultural food and fibre, horticultural and ornamental hosts. Very few have been studied morphologically and very few species world-wide have been described or illustrated using modern criteria such as conidiogenesis or subjected to type study or comparison. This study is an attempt to put the genus *Septoria* in Australia on a firm taxonomic footing by description of available material, type studies and illustration. *Section 1* deals with the typification of the genus and discusses the aspects of current morphological characters, particularly conidiogenesis, relevant to the genus. A complete listing of named and un-named species of *Septoria* described or reported from Australia is presented as a prelude to this study. Full description and illustration of each taxon has been undertaken and the results are presented in *Section 3*. General discussion and conclusions are presented in *Section 4*.

A number of new species and combinations are to be found presented within this study. These are not considered to be effectively published under Article 29 of the International Code of Botanical Nomenclature.

Declaration

I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree.

I certify that to the best of my knowledge any help received in preparation of this thesis, and all sources used, have been acknowledged in this thesis



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Abstract

One hundred and fourteen taxa, referred to the genus *Septoria* are recognised as occurring in Australia following study of all available collections and many type studies. Eighty-one records and reports of species occurring in Australia are rejected on the basis of absence of herbarium collections, re-disposition after examination of available material or misinterpretation of literature. Six species are recognised as not belonging to the genus but in the absence of type examination have not been transferred and are kept under their current names in *Septoria*. The recognised species occur on fifty-five plant families, the largest number occurring on the Asteraceae (twenty-two) and the Poaceae (twelve). One un-named species is regarded as a probable saprophyte, occurring on a number of plant families and associated with dead, dying or incubated leaf tissues. *Septoria lagenophorae* is recognised as a hyperparasitic member of the genus, being closely associated mainly with rusts but occasionally other fungi.

Keys to recognised species are presented for the fungi infecting several plant families including the Apiaceae, Asteraceae, Caryophyllaceae, Fabaceae, Mimosaceae and Poaceae. Teleomorphs of the genus *Mycosphaerella* are also described and illustrated where closely associated with an anamorphic *Septoria*. Ten species are described as new and three new combinations are proposed. Considerable variation in conidiogenesis is noted but is regarded as intrinsic to the current concept of the genus. Five groups of species are recognised based on modes of conidiogenesis. The apparent variation in conidiogenesis still affords the possibility of sub-generic segregation using conidiogenesis, conidiomatal structure and teleomorph connection.

Table of Contents

	<i>Page</i>
Preface	ii
Declaration	iii
Acknowledgements	iv
Abstract	v
Table of Contents	vi
 Section 1: <i>General Background</i>	
1.1 Introduction	1
1.2 Conservation and Typification	2
1.3 Generic Definition	4
1.4 Taxonomic Characters	7
1.5 Other Scolecospored Anamorphic Genera	13
1.6 Teleomorphs of <i>Septoria</i>	16
1.7 Biogeography	17
 Section 2: <i>Materials and Methods</i>	39
 Section 3: <i>Descriptions and Taxonomic Studies of Australian Species</i>	43
 Section 4: <i>Discussion and Conclusions</i>	257
 References	267
 Appendix A (Distribution of Australian species of <i>Septoria</i> by Host Family)	292
Appendix B (Australian species of <i>Septoria</i> listed by Host Family)	294
 Fungus Index	300