SOME PRELIMINARY RESULTS FROM COLLECTIONS OF HYGROPHORACEAE FOR THE SEASON 1998

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During the interval April to June 1998, collections of species within the Hygrophoraceae were made in Tasmania, Victoria and New South Wales. Additionally, examination was made of a small number of collections from the Victorian State Herbarium (MEL). Some very preliminary results are now available and species lists recording the occurrence of a particular taxon in one or more of the State locations are given below. Except in special circumstances (*e.g.* where a taxon has previously not been described or listed for Australia), author citations are assumed to be those as for the taxa contained in Young & Wood (1997):

Tasmania (97 collections)
Hygrocybe anomala, H. astatogala, H. aurantiopallens, H. batesii, H. cantharellus, H. chromolimonea, H. erythrocrenata, H. firma, H. graminicolor, H. irrigata (Pers.: Fr.) Bon (new record for Australia), *H. julietae* (Stevenson) Horak (new record for Australia, still to be confirmed), *H. lewellinae, H. lilaceolamellata, H. mavis, H. miniata, H. pseudograminicolor, H. reesiae, H. rodwayi. Hygrophorus involutus.*

There are also approximately 18 new taxa to be described.

Victoria (40 collections)
Hygrocybe astatogala, H. aurantiopallens, H. batesii, H. chromolimonea, H. conica, H. firma, H. hayi, H. leucogloea, H. lewellinae, H. mavis, H. miniata, H. rodwayi.

There are also approximately 3 new taxa to be described.

New South Wales (130 collections)
Hygrocybe astatogala, H. aurantiopallens, H. aurantipes, H. batesii, H. cantharellus, H. cerasinomutata, H. chromolimonea, H. erythrocala, H. graminicolor, H. kula, H. lewellinae, H. lilaceolamellata, H. miniata, H. pseudograminicolor, H. reesiae, H. rodwayi, H. sanguineocrenulata, H. siccitatopapillata, H. stevensoniae, H. sylvaria, H. virginea. Hygrophorus involutus.

There are also approximately 12 new taxa to be described.

RESULTS

Several interesting results are already apparent from these preliminary details. First it was extremely gratifying to find collections that could be assigned to taxa described in the 1997 paper for which only the holotype collection was known. Amongst these are *Hygrocybe siccitatopapillata, H. pseudograminicolor, H. sylvaria, H. hayi* and *H. leucogloea.* Even more useful was the fact that photographic material could at last be stored for some of these species.

A second result is that the distributions and abundance of some of the taxa can for the first time be assessed, although for many species, there are still too few collections. *Hygrocybe pseudograminicolor* was previously known only from its holotype locality of Mt Wilson in the Blue Mountains west of Sydney. It is now known to be widespread and abundant in Tasmania. Another surprise has been *Hygrocybe lewellinae* which for many years has been considered to be one of our rarer fungi. The species is widespread and abundant in Tasmania and is also very widespread and surprisingly abundant on the mainland.

A third and very curious habit of the Hygrophoraceae was to show that a 'cherished concept' may need to be discarded. The collection plans for 1998 were based around the idea of visiting Tasmania in April–May and collecting there before the season became too cold. The aim was then to cross over to the mainland and 'follow the season northwards' as the cold weather also moved northwards with the approach of mid-winter—assuming of course that normal rains fell. This proved to be an incorrect prediction for fruiting behaviour in this family because the present indications are that once the Hygrophoraceae fruiting season starts in Tasmania, it starts simultaneously all up and down the eastern coastline of Australia. It thus becomes a race to find the taxa before they finish their limited fruiting. Some preliminary indications from the Gore Creek flora (Sydney) seem to show that there is a sequence of taxon appearance.

Of intense interest was the Tasmanian component of the Hygrophoraceae which has proven to be 'eye-opening' in a variety of ways. In the Tasmanian forests, the Hygrophoraceae so far documented have almost exclusively been associated with the deep moss beds under *Nothofagus.* This contrasts enormously with the habitats as found so far in

Victoria, central New South Wales and southern Queensland where the Hygrophoraceae are found on soil amongst leaf litter. It would be interesting to examine the heath and eucalypt forests in Tasmania under ideal conditions to see if any species do occur.

The most interesting taxon (at least to me) that emerged in troops in most Tasmanian forests was *Hygrocybe astatogala* where it occurred as very large, black basidiomes. Even after encountering this species on numerous occasions, it was still a shock to see it fruit so prolifically on the moss beds. Another very curious occurrence was to find a small quantity of pure white *Hygrophorus involutus*.

An interesting result concerns the two species *Hygrocybe apricosa* and *Hygrocybe aurantiopallens*. These two taxa are very easily separated on the basis of the spores—*Hygrocybe aurantiopallens* has subglobose to globose spores but *Hygrocybe apricosa* has very distinctly ellipsoidal spores. So far, no collection can be assigned to *Hygrocybe apricosa* but there are plentiful collections of *Hygrocybe aurantiopallens* from Tasmania, Victoria and New South Wales. Although there are numerous collections which appear from their colours to be *H. apricosa*, the defining ellipsoidal spores are so far absent from any Australian material.

There remain enormous gaps in the current knowledge of the Hygrophoraceae. Tasmania's flora is still to be thoroughly covered and there may be as many taxa yet again to describe. During 1999, the intention is to revisit Tasmania with the aim of covering only those taxa which are either new or where only one or two collections exist. The next step will be to visit the wet forests of eastern Victoria where little collecting specifically for the Hygrophoraceae has been done and then (if the season permits) visit the Blue Mountains and the Dorrigo area of New South Wales. This year (1998) proved utterly useless as regards collecting in the Dorrigo National Park area as at the time of visiting, the rainforest was so dry that not a single agaric had emerged and only one old, insect riddled polypore was visible on a log.

There also remain enormous gaps just in collection of the species. Almost no collections exist for the northern tropics and there are most definitely species of the Hygrophoraceae to be found in those regions. I have collections and data from northern coastal Queensland and some written data from Darwin which suggests that there remains some very interesting work to be done in the tropics. Western Australia also is likely to prove fascinating. Some data from Katrina Syme and Neale Bougher suggests that there are quite a few undescribed species in the Western Australian flora.

A number of people assisted me during my ABRS work for 1998 and I should very much like to thank them publicly for the enormous support they provided during my collection trip which made my work not only so much easier but in many instances made it actually possible. For the Tasmanian section, I find it very difficult to find words that allow me to thank Alan Mills of the University of Tasmania sufficiently for his exceptionally generous gift to me of his time, his knowledge of the local forests and the use of his facilities, without which the Tasmanian section of my work would have suffered greatly. It would be accurate to say that Alan's assistance virtually doubled the effectiveness of the Tasmanian section. In Victoria, my thanks to Tom May who enthused the participants of the Wilson's Promontory expedition into making sure I got out to Chinaman's Creek and the lush gully at that point that yielded so many taxa within the family. I should also like to pay thankful and immense tribute to the untiring efforts of Ray and Elma Kearney whose dedication to the Hygrophoraceae of Gore Creek in Sydney have not only produced about 20 taxa in a small area of less than half an acre of ground but have contributed at least three new species. My thanks also to Frank Taeker who assisted with collection trips in the Blue Mountains and Royal National Park. And last but most definitely not least, Bettye Rees who 'Gymnotonised' her way through Tasmania with Alan and myself and who allowed me to impose very extensively on her hospitality while I was in Sydney. To all of these people again, my sincere thanks.

Reference

Young, A.M. & Wood, A.E. (1977) Studies on the Hygrophoraceae (Fungi, Homobasidiomycetes, Agaricales) of Australia. *Australian Systematic Botany* **10(6)**, 911–1030.