©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

The Meliolaceae of Hawaii

By R. D. Goos[1] and J. H. Anderson[2]
Department of Botany, University of Hawaii

The family Meliolaceae includes about 45 genera and well over a thousand species of epiphyllic, parasitic fungi, commonly spoken of as the "dark mildews". They occur on a wide range of host plants and show a high degree of host adaptation and specialization (Ainsworth, 1963). They are widely distributed, but reach their greatest development in the tropics.

The family has been monographed recently in a monumental work by Hansford (1961). This work provides a sound foundation for all future taxonomic work on the family, and represents a tremendous compilation of bibliographic and first-hand observation on these fungi.

In the introduction to his monograph, Hansford points out that rarely does one find that the host range of a single species of the meliolaceous fungi extends over more than a single family of phanerogamic hosts. He states: "it is essential to know at least the family of the host of each specimen before any attempt can be made at accurate determination of the fungus." In his monograph, Hansford has given primary emphasis to host families, and under each family of host plants, he provides a key to the Meliolaceae occurring on the members of that family. To use his keys, therefore, it is necessary that the plant host be identified at least of the family level, before one can proceed to the identification of the fungus.

Hansford discusses somewhat more than 1800 species and varieties of fungi, occurring on over 340 host families. Of these, about 50 species found on 29 host families are known to occur in Hawaii.

Our knowledge of these fungi in Hawaii stems largely from work of Stevens (1925), who has been the only mycologist to have collected these fungi extensively in Hawaii. A number of significant nomenclatural changes have occurred since the publication of Stevens' work, and some additional records have been noted for Hawaii. It is desirable, therefore, that Stevens' treatment be updated and adapted to the system established by Hansford, so that the Hawaiian species can be integrated and readily located in Hans-

[1] Present address: Department of Botany, University of Rhode Island, Kingston, 02881.
[2] Present adress: Department of Botany and Microbiology, University of Oklahoma, Norman, 73069.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

ford's treatment. It is the purpose of this paper to provide such a summation.

In this summation, the host families are listed alphabetically; the host family number, as given by Hansford (who based his system on Hutchinson's "Families of Dicotyledons" and "Families of Monocotyledons") is also included. Host species, and meliolaceous fungi occurring on them are listed undere each family. An alphabetical listing of fungi and the host plants on which they have been found follows; species known only from Hawaii are indicated by an asterisk. Some recent records of meliolaceous fungi collected in Hawaii are also reported.

Recent collections of meliolaceous fungi in Hawaii

The fungi reported here were collected during 1968—70. In addition to some new distribution records within the state, there are among these specimens two collections that appear to be new records for the state; a third appears to represent a new host record. Several of these fungi were collected near their type localities; it is interest that these fungi and their hosts can still be found in these areas nearly fifty years after they were first described by Stevens.

The specimes cited below are deposited in the herbarium of the University of Hawaii. In some cases, duplicate specimens have been deposited in the Commonwealth Mycological Institute, Kew, England; these are so designated.

1. *Asteridiella acervata* (E. & E.) Hansf.
   On *Physalis peruviana,* Upper Ditch Trail, Hawaii, 3/25/70. (J. Anderson No. 10; CMI 149667).
2. *Asteridiella cheirodendronis* (Stev.) Hansf.
   On *Cheirodendron gaudichaudii.* Olinda Pipeline Trail, Maui, 3/28/70. (J. Anderson No. 4; CMI No. 149666). On *Cheirodendron sp.,* Wily Wily Nui Trail,Oahu, 3/6/70. (J. Anderson No. 22). On *Vaccinium reticulatum.* Olinda Pipeline Trail, Maui, 3/28/70. (J. Anderson No. 3).
3. *Meliola alyxiae* Stevens.
   On *Alyxia olivaeformis,* Kaluaa Gulch, Oahu, collected by C. W. Smith, 3/26/70. (J. Anderson No. 19).
4. *Meliola argentina* Speg.
   On *Machaerina angustifolia,* Wily Wily Nui Trail, Oahu, 2500 ft. elevation. Collected by R. Goos, 10/68. (J. Anderson No. 16; CMI 149673).
5. *Meliola heteroseta* Höhnel.
   On *Vaccinium reticulatum,* Olinda Pipeline Trail, Maui, 3/28/70. (J. Anderson No. 3). This appears to be a new record for the state.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

6. *Meliola juddiana* Stev.
On *Pelea clusiaefolia,* Olinda Pipeline Trail, Maui, 3/28/70. Parasitized by *Dimerium piceum* (Berky & Curt.) Theiss. (J. Anderson No. 1; CMI No. 149674). On *Pelea sp.,* Pua Koua, Oahu, 2500 ft. elevation, collected by D. Herbst and E. Bishop, 1/70. (J. Anderson No. 13; CMI No. 149670).
7. *Meliola kaduae* Stev.
On *Gouldia terminalis,* Palolo Vally, Oahu, collected by C. Korn, 6/20/70. (J. Anderson No. 23).
8. *Meliola palmicola* Wint.
On *Pritchardia* (?) *martii,* Wily Wily Nui Trial, Oahu, 2500 ft. elevation, 3/6/70. (J. Anderson No. 15; CMI 149672). Collected on the same host by R. Goos, 11/16/68. This appears to be a new host record.
9. *Meliola vaccinii* Stev.
On *Vaccinium dentatum,* Molokai Forest Reserve, collected by R. Goos, 2/7/69. (J. Anderson No. 12; CMI 149669). On *Vaccinium reticulatum,* Olinda Pipeline Trial, Maui, 3/28/70. (J. Anderson No. 2; CMI 149665).
10. *Meliolina mollis* (B. & Br.) Höhnel.
On *Metrosideros collina,* Molokai Forest Reserve, collected by R. Goos, 2/7/69. (J. Anderson No. 11; CMI 149668).
11. *Meliolina novae-zealandiae* Hansf.
On *Metrosideros collina,* Molokai Forest Reserve, collected by R. Goos, 2/7/69. (J. Anderson No. 11; CMI 149668). On the same host, Lanai, collected by R. Goos and B. Lee, 5/15/69. (J. Anderson No. 14; CMI 14971). This appears to be a new record for the state.

Hawaiian Meliolaceae according to Hansford's treatment

Index to Host Families

1. Agavaceae. Host Family 313.
On *Dracaena aurea.*
Meliola dracaenae Stev.
2. Apocynaceae. Host Family 230.
On *Alyxia olivaeformis.*
Amazonia alyxiae Hansf.
Meliola alyxiae Stev.
(*Amazonia psychotriae* is listed by Stevens, but not included on this host by Hansford).
3. Araliaceae. Host Family 212.
On *Cheirodendron gaudichaudii.*
Asteridiella cheirodendronis (Stev.) Hansf.
4. Campanulaceae. Host Family 243.
On *Clermontia multiflora.*
Amazonia clermontiae Hansf.
On *Clermontia persicaefolia.*
Amazonia clermontiae Hansf.
On *Clermontia sp.*
Amazonia clermontiae Hansf.
Meliola lobeliae Stev.
5. Celastraceae. Host Family 173.
On *Perrottetia sandwicensis.*
Amazonia stevensii Hansf., emend Hansf.
Appendiculella kalalauensis Hansf.
Asteridiella perrottetiae (Stev.) Hansf.
6. Cyperaceae. Host Family 331.
On *Brumea meyeri.*
Meliola argentina Speg.
On *Cladium meyenii.*
Meliola argentina Speg.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

On *Gahnia gaudichaudii.*
Meliola argentina Speg.
On *Gahnia leptostachya.*
Meliola argentina Speg. var. *hawaiiensis* Hansf.
On *Machaerina angustifolia (Vincentia angustifolia).*
Meliola argentina Speg.
On *Rhynchospora thyrsoidea.*
Meliola argentina Speg.
7. Euphorbiaceae. Host Family 136.
On *Claoxylon sandwicense.*
Meliola morbosa Stev.
On *Euphorbia clusiaeformis.*
Amazonia tetrorchidii Hansf.
8. Gesneriaceae. Host Family 256.
On *Cyrtandra cordifolia.*
Asteridiella cyrtandrae (Stev.) Hansf.
On *Cyrtandra lessoniana.*
Asteridiella cyrtandrae (Stev.) Hansf.
9. Goodeniaceae. Host Family 245.
On *Scaevola chamissoniana.*
Meliola scaevolicola (Stev.) Hansf.
On *Scaevola glabra.*
Amazonia scaevolae Hansf.
On *Scaevola mollis.*
Meliola scaevolicala (Stev.) Hansf.
On *Scaevola sp.*
Amazonia scaevolae Hansf.
10. Lauraceae. Host Family 11.
On *Cryptocarya mannii.*
Asteridiella shearianа Hansf.
Meliola praetervisa Gaill. (Listed as *M. peleae* by Stevens).
11. Liliaceae. Host Family 293.
On *Dianella odorata.*
Meliola gregoriana Stev.
12. Lobeliaceae, Host Family 244.
On *Lobelia sp.*
Meliola lobeliae Stev.
(*Amazonia psychotriae* also listed by Stevens).
13. Loganiaceae. Host Family 228.
On *Labordia sp.*
Amazonia psychotriae (P. Henn.) Theiss. var. *labordiae* Hansf.
14. Loranthaceae. Host Family 185.
On *Viscum articulatum.*
Meliola visci Stev.
15. Mimosaceae. Host Family 147.
On *Acacia koa.*
Meliola koae Stev.
On *Acacia confusa.*
Meliola koae Stev.
16. Myrtaceae. Host Family 118
On *Eugenia sandwicensis.*
Meliola hawaiiensis Stev.
On *Eugenia sp.*
Meliola hawaiiensis Stev.
On *Metrosideros collina polymorpha* var. *incana* Rock.
Meliola sydowiana Stev.
On *Metrosideros collina polymorpha?*
Meliolina haplochaeta Syd.
Meliolina mollis (B. & Br.) Höhnel.
Meliolina novae-zealandiae Hansf.
Meliolina sydowiana Stev.
On *Metrosideros macrocarpa.*
Meliolina sydowiana Stev.
On *Metrosideros polymorpha.*
Asteridiella ohiana (Stev.) Hansf.
17. Myrsinaceae. Host Family 223.
On *Suttonia lessertiana.*
Amazonia suttoniae (Stev.) Hansf.
18. Oleaceae. Host Family 229.
On *Osmanthus sandwicensis.*
Meliola osmanthi Syd.
Meliola osmanthicola Hansf.
Meliola osmanthina Hansf.
Meliola osmanthi (Syd.) var. *hawaiiensis* Hansf.
19. Palmae. Host Family 314.
On *Pritchardia martii* (?)
Meliola palmicola Wint.
On undetermined palm.
Meliola palmicola Wint. (Forbes-Stevens No. 678).
20. Rhamnaceae. Host Family 190.
On *Alphitonia excelsa.*
Appendiculella splendens (Stev.) Hansf.
21. Rosaceae. Host Family 143.
On *Rubus hawaiiensis.*
Appendiculella calostroma (Desm.) Höhnel.
(Liste by Stevens as *Irene puiggiarii* (Speg.) Doidge).
22. Rubiaceae. Host Family 232.
On *Coprosma sp.*
Amazonia psychotriae (P. Henn.) Theiss. (Not included by Hansf. on this host).
On *Gouldia coriacea.*
Meliola gouldina Hansf.
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
Meliola sandwicensis E. & E.
Meliola sandwicensis E. & E., var. *major* Hansf.
On *Gouldia elongata.*
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

On *Gouldia lanceolata.*
Meliola kaduae Stevens.
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
Meliola sandwicensis E. & E.
On *Gouldia macrocarpa.*
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
Meliola sandwicensis E. & E.
Meliola sandwicensis E. & E., var. *major* Hansf.
On *Gouldia terminalis.*
Meliola kaduae Stev.
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
On *Gouldia sp.*
Meliola kaduae Stev.
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
Meliola sandwicensis E. & E.
Meliola sandwicensis var. *major.*
On *Kadua sp.*
Meliola kaduae Stev.
Meliola kauaiensis Stev.
Meliola sandwicensis E. & E., var. *gouldiae* Hansf.
Meliola sandwicensis E. & E.
On *Straussia hawaiiensis.*
Amazonia polypoda.
On *Straussia kaduana.*
Amazonia polypoda Syd.
Meliola kaduae Stev.
On *Straussia mariniana.*
Amazonia polypoda Syd.
On *Straussia sp.*
Amazonia polypoda Syd.
Meliola kaduae Stev.
Meliola straussiae Hansf.
23. Sapindaceae. Host Family 198.
On *Dodonaea viscosa.*
Meliola lyoni Stev.
24. Rutaceae. Host Family 194.
On *Pelea barbigera.*
Meliola peleae Stev.
On *Pelea cinerea.*
Meliola juddiana Stev.
Meliola peleae Stev.
On *Pelea clusiaefolia.*
Meliola juddiana Stev.
On *Pelea cinerea.*
Meliola juddiana Stev.
Meliola peleae Stev.
On *Pelea hawaiiensis.*
Meliola juddiana Stev.
Meliola recurvipoda Hansf.
On *Pelea parvifolia.*
Meliola juddiana Stev.
On *Pelea rotundifolia.*
Meliola juddiana Stev.
Meliola peleae Stev.
On *Pelea sandwicensis.*
Meliola juddiana Stev.
Meliola peleae Stev.
On *Pelea sp.*
Meliola juddiana Stev.
Meliola kisubiensis Hansf. var. *peleicola* Hansf.
Meliola peleae Stev.
25. Sapotaceae. Host Family 222.
On *Sideroxylon sandwicensis.*
Meliola sideroxylonis Stev.
26. Solonaceae. Host Family 250.
On *Physalis peruviana.*
Asteridiella acervata (E. & E.) Hansf.
(Listed as *Irene inermis* by Stev.).
27. Thymeleaceae. Host Family 81.
On *Wikstroemia elongata.*
Amazonia wikstroemiae Hansf.
(Listed by Stevens as *A. psychotriae).*
On *Wikstroemia foetida.*
Amazonia wikstroemiae Hansf.
(Listed by Stevens as *A. psychotriae).*
On *Wikstroemia phillyriaefolia.*
Amazonia wikstroemiae Hansf.
(Listed by Stevens as *A. psychotriae).*
On *Wikstroemia sp.*
Amazonia wikstroemiae Hansf.
(Listed by Stevens as *A. psychotriae).*
28. Urticaceae. Host Family 169.
On *Pipturus albidus.*
Asteridiella pipturi Hansf.
(Listed by Stevens as *Irene triloba* (Wint.) Stevens).
29. Vacciniaeae. Host Family 216.
On *Vaccinium reticulatum.*
Asteridiella exilis (Syd.) Hansf.
Meliola alyxiae Stev. (Not listed on this host by Hansford).
Meliola vaccinii Stev.
On *Vaccinium dendatum.*
Meliola vaccinii Stev.

Index of Fungus Species

1. **Amazonia alyxiae* Hansf.
On *Alyxia olivaeformis.*
2. *Amazonia clermontiae* Hansf.
On *Clermontia multiflora.*
On *Clermontia persicaefolia.*
On *Clermontia sp.*
3. **Amazonia polypoda* Syd.
= *Amazonia psychotriae* (P. Henn.) Theiss. var. *straussiae* Hansf.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

On *Straussia hawaiiensis.*
On *Straussia kaduana.*
On *S. mariniana.*
On *S. sp.*
4. *Amazonia psychotriae* (P. Henn.) Theiss.
On *Coprosma sp.*
5. **Amazonia psychotriae* (P. Henn.) Theiss. var. *labordiae* Hansf.
On *Labordia sp.*
6. **Amazonia scaevolae* Hansf.
On *Scaevola glabra.*
On *S. sp.*
7. **Amazonia stevensii* Hansford emend. Hansf.
= *Actinodothis perrottetiae* Stev.
On *Perrottetia sandwicensis.*
8. **Amazonia suttoniae* Stev.
= *Actinodothis suttoniae* Stev.
On *Suttonia lessertiana.*
9. *Amazonia tetrorchidii* Hansf.
On *Euphorbia clusiaeformis.*
10. **Amazonia wikstroemiae* Hansf.
On *Wikstroemia elongata.*
On *W. foetida.*
On *W. phillyriaefolia.*
On *W. sp.*
11. *Appendiculella calostroma* (Desm.) Höhnel.
On *Rubus hawaiiensis.*
12. **Appendiculella kalalauensis* Hansf.
= *Irene perrottetiae* (Stev.) Hansf.
On *Perrottetia sandwicensis.*
13. **Appendiculella splendens* (Stev.) Hansf.
= *Irene splendens* Stev.
On *Alphitonia excelsa.*
14. **Asteridiella acervata* (E. & E.) Hansf.
= *Meliola acervata* E. & E.
= *Irene acervata* (E. & E.) Hansf.
On *Physalis peruviana.*
15. **Asteridiella cheirodendronis* (Stev.) Hansf.
= *Irene cheirodendronis* Stev. (Hansf. cites this as *Meliola cheirondendronis*, but this appears to be an error).
On *Cheirodendronis gaudichaudii.*
16. **Asteridiella coprosmae* Hansf.
On *Coprosma sp.*
17. **Asteridiella cyrtandrae* (Stev.) Hansf.
= *Meliola cyrtandrae* Stev.
= *Irennina cyrtandrae* Stev.
On *Cyrtandra cordifolia.*
On *C. lessoniana.*
18. *Asteridiella exilis* (Syd.) Hansf.
= *Irene exilis* (Syd.) Stev.
On *Vaccinium reticulatum.*
19. **Asteridiella ohiana* (Stev.) Hansf.
= *Amazonia ohiana* Stev.
On *Metrosideros polymorpha.*
20. **Asteridiella perrottetiae* (Stev.) Hansf.
= *Amazonia perrottetiae* Stev.
= *Irene perrottetiae* (Stev.) Hansf., p. p.
On *Perrottetia sandwicensis.*
21. *Asteridiella pipturi* Hansf.
= *Irenina pipturi* Hansf.
On *Pipturus albidus.*
22. **Asteridiella shearianа* Hansf.
On *Cryptocarya mannii.*
23. **Asteridiella waimeana* Hansf.
On *Perrottetia sandwicensis.*
24. **Meliola alyxiae* Stev.
On *Alyxia olivaeformis.*
25. *Meliola argentina* Speg.
On *Brumea meyeri.*
On *Cladium meyenii.*
On *Machaerina angustifolia* (= *Vincentia angustifolia*).
On *Gahnia gaudichaudii.*
On *Rhynchospora thyrsoidea.*
26. **Meliola argentina* Speg. var. *hawaiiensis* Hansf.
On *Gahnia leptostachya.*
27. **Meliola dracenae* Stev.
On *Dracena aurea.*
28. **Meliola gouldiae* Hansf.
On *Gouldia coriacea.*
29. **Meliola gregoriana* Stev.
On *Dianella odorata.*
30. **Meliola hawaiiensis* Stev.
On *Eugenia sandwicensis.*
On *Eugenia sp.*
31. *Meliola heteroseta* Höhnel.
On *Vaccinium reticulatum.*
32. **Meliola juddiana* Stev.
On *Pelea cinerea.*
On *P. clusiaefolia.*
On *P. elliptica.*
On *P. hawaiiensis.*
On *P. parvifolia.*
On *P. rotundifolia.*
On *P. sandwicensis.*
On *P. sp.*
33. **Meliola kaduae* Stev.
On *Gouldia lanceolata.*
On *G. terminalis.*

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

On *G. sp.*
On *Kadua sp.*
On *Straussia kaduana.*
On *S. sp.*
34. **Meliola kauaiensis* Stev.
On *Kadua knudsenii.*
On *Kadua sp.*
35. *Meliola kisubiensis* Hansf. var. *peleicola* Hansf.
On *Pelea sp.*
36. *Meliola koae* Stev.
= *Meliola acaciae-confusa* Sawada
On *Acacia koa.*
On *Acacia confusa.*
37. **Meliola lobeliae* Stev.
On ? *Lobelia sp.*
On *Clermontia sp.*
38. *Meliola lyoni* Stev.
= *Meliola cookeana* Speg. var. *major* Gaill.
On *Dodonaea viscosa.*
39. **Meliola morbosa* Stev.
On *Claoxylon sandwicensis.*
40. *Meliola osmanthi* Syd.
On *Osmanthus sandwicensis.*
41. **Meliola osmanthicola* Hansf.
On *Osmanthus sandwicensis.*
42. **Meliola osmanthina* Hansf.
On *Osmanthus sandwicensis.*
43. **Meliola osmanthi* Syd. var. *hawaiiensis* Hansf.
On *Osmanthus sandwicensis.*
44. *Meliola palmicola* Wint.
On *Pritchardia* (?) *martii.*
On undetermined palm.
45. **Meliola peleae* Stev.
On *Cryptocarya mannii.*
On *Pelea bardigera.*
On *P. cinerea.*
On *P. elliptica.*
On *P. rotundifolia.*
On *P. sandwicensis.*
On *P. sp.*
46. *Meliola praetervisa* Gaill.
On *Cryptocarya mannii.*
47. **Meliola recurvipoda* Hansf.
On *Pelea hawaiiensis.*
48. **Meliola sandwicensis* E. & E.
On *Gouldia coriacea.*
On *G. lanceolata.*
On *G. macrocarpa.*
On *G. terminalis.*
On *G. sp.*
On *Kadua sp.*
49. **Meliola sandwicensis* E. & E. var. *gouldiae* Hansf.
On *Gouldia coriacea.*
On *G. elongata.*
On *G. lanceolata.*
On *G. macrocarpa.*
On *G. terminalis.*
On *G. sp.*
On *Kadua knudsenii.*
On *K. sp.*
50. **Meliola sandwicensis* var. *major* Hansf.
On *Gouldia coriacea.*
On *G. macrocarpa.*
On *G. sp.*
51. **Meliola scaevolicola* (Stev.) Hansf.
= *Irene scaevolicola* Stev.
= *Irenopsis scaevolicola* Stev.
On *Scaevola chamissoniana.*
On *S. mollis.*
52. **Meliola sideroxylonis* Stev.
On *Sideroxylon sandwicense.*
53. **Meliola straussiae* Hansf.
On *Straussia sp.*
54. **Meliola vaccinii* Stev.
On *Vaccinium dentatum.*
On *Vaccinium reticulatum.*
55. **Meliola visci* Stev.
On *Viscum articulatum.*
56. *Meliolina haplochaeta* Syd.
On *Metrosideros collina polymorpha.*
57. *Meliolina mollis* (B. & Br.) Höhnel.
On *Metrosideros collina.*
58. *Meliolina novae-zealandiae* Hansf.
On *Metrosideros collina.*
59. *Meliolina sydowiana* Stev.
On *Metrosideros collina* var. *polymorpha.*
On *Metrosideros macrocarpus.*

Discussion

Because of the high level of endemism that occurs in the native vascular flora of Hawaii, estimated by Stone (1967) to be slightly more than 96%, the question is often raised, "Are there endemic fungi in Hawaii?" The question has never been adequately answered. Fungi,

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.a

by their nature, tend to be fairly cosmopolitan in their distribution, and while it is rare to find endemic fungal species, they do occur (Park, 1968). Substratum is one of the most obvious determinants of fungal distribution (Park, 1968), and in the case of parasitic fungi, their distribution is frequently limited by that of their host species. It is of interest to note that all of the meliolaceous fungi collected in Hawaii by Stevens (1925) were found on plants indigenous to the islands, and that most of the host species were endemic. Of thirty-five species of meliolaceous fungi collected by Stevens, twenty-five were described as new. It is noteworthy, also, that of fifty-six species and varieties report from Hawaii by Hansford, forty-one are known only from the islands. This would seem to be good presumptive evidence that these fungi are endemic. The Meliolaceae thus appear to provide an affirmative answer to the question, "Are there endemic fungi in Hawaii?"

Acknowledgement

It is a pleasure to acknowledge the assistance of Mrs. Pamela Ellis of the Comonwealth Mycological Institute, Kew, in the identification of several specimens. The authors thank Drs. G. E. Baker and N. P. Kefford for encouragement and helpful suggestions, and several of their colleagues for valued specimens. The senior author acknowledges the support provided by PHS Research Grant No. 15198 from the National Institutes of Health. The junior authors thanks the Hawaiian Botanical Gardens Foundation for a travel grant (No. 68F) which permitted collecting on the islands of Maui and Hawaii.

Literature cited

Ainsworth, G. C., 1963 Ainsworth and Bisby's Dictionary of the Fungi. Fifth Ed., Commonwealth Mycological Institute, Kew. Surrey, England. 547 pp.

Hansford, C. G., 1961. The Meliolineae: a monograph. Beihelfe Sydowia (Annales Mycologici, Ser. II) Vol. II, pp. 1—806.

Park, D., 1968. The ecology of terrestrial fungi. Chapter I, In Vol. III, The Fungi: An Advanced Treatise. Ed. by G. C. Ainsworth and A. S. Sussman, Academic Press, New York. 748 pp.

Stevens, F. L., 1925. Hawaiian Fungi. Bernice P. Bishop Museum Bulletin No. 19, pp. 1—189.

Stone, B. C., 1967. A review of the endemic genera of Hawaiian plants. Botanical Review, Vol. 33, pp. 216—259.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Sydowia

Jahr/Year: 1972/1974

Band/Volume: 26

Autor(en)/Author(s): Goos R. D., Anderson J. H.

Artikel/Article: The Meliolaceae of Hawaii. 73-80