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Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

INSTRUCTIONS TO AUTHORS

Publication in MYCOLOGIA is restricted to those who have been members in good standing of the Mycological Society of America for over one year immediately preceding submission of manuscript. Exceptions to this regulation require a favorable vote by a majority of the Editorial Board. When a paper has two or more authors, the person submitting the paper is expected to be a member.

Subject matter should fall into one of the following categories: (1) original research on some phase of mycology; (2) reviews, such as invitational papers or symposium articles, integrating some area of mycology; (3) notes or brief articles reporting techniques or information of mycological interest.

Papers are limited to 10 printed pages, including tables and illustrations, for authors who have published in MYCOLOGIA within one year. Authors who have not published within one year may be allowed 20 printed pages. Those who have not published within two years will be allowed a maximum of 30 printed pages in one paper, providing they have been members of the Society during this period. Should an author wish to publish additional pages in one article he may do so by paying for excess pages at the rate of \$15 per printed page.

Each article will be restricted to two pages of half-tone illustrations or three of zinc line-engravings, the total cost not to exceed \$25. Should the cost of cuts exceed \$25, the author will be billed for the excess.

Regular articles will be published in approximate order of their acceptance. Exceptions will be considered by the Editorial Board. After a manuscript has been accepted, the author will receive with the galley proof a form that gives his the option to pay for pagination; nonacceptance of page charges by the author in no way affects the publication of the article.

Manuscripts. Authors should follow the suggestions of the ~~M~~IBS STYLE MANUAL (Conference of Biological Editors, Committee on Form and Style, 1964. Style manual for biological journals. Second Edition. American Institute of Biological Sciences, Washington, D. C.) Authors are encouraged to have one or more colleagues read and criticize the manuscript prior to submission. *Be as brief as possible.*

Submit manuscripts in duplicate (original on good white bond paper plus one carbon), double-spaced throughout, including title, footnotes, tables, legends, literature cited, etc., with 1 inch margins. Number all pages. They may be mailed to any member of the Editorial Board, but preferably to the Editor-in-Chief. Manuscripts will be reviewed by at least two reviewers, usually a member of the Editorial Board and a specialist. In the event of disagreement between reviewers as to the merits of a paper, the Editor-in-Chief will make the final decision.

Failure to follow the instructions will delay the review of the article. When in doubt about style, refer to recent issues of MYCOLOGIA.

Manuscripts should be typewritten in the following order: title, author's name, author's address, summary, text (with desired headings), acknowledgments, and literature cited.

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Headings. Use only as necessary for clarity. Center major headings; start subheadings at left margin; indent additional subheadings from left margin.

bottom of page where cited. Do not include acknowledgments in 1957, unless required institutional statements on the first page.

Scientific names. Underline only generic, infrageneric, specific, and infraspecific taxa. Cite authors of specific and infraspecific taxa, but only when first used in the text.

New taxa and formal descriptions. Place new taxa at left margin followed by describing author(s) and status (e.g., sp. nov.). Start Latin diagnosis next as a paragraph. Indicate the type specimen and its place of deposit. Living cultures cannot be designated as the type of a fungous taxon, though this is permissible with bacteria. Latin diagnoses are required for all new taxa except bacteria and fossil. Authors are responsible for the Latin, which should be checked by a botanical Latin scholar. The Latin diagnosis should be as brief as possible, yet sufficiently complete to distinguish the taxon. It should not be followed by an English description that is essentially a repetition of the Latin.

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Submit original inked drawings or photographs. Group drawings or photographs to be economical of space and to make best use of the 4¼ inch maximum width. The maximum height of plates is 6¼ inches, but ordinarily this dimension should include space for the legend at the bottom. Eliminate marginal areas, trim square with a cutting board, and fit together without space between. Do not submit loose photographs intended for one plate, nor leave their arrangement to the judgment of the Editor. Do not number or letter figures by hand; use a lettering instrument or printed graphic art aids. Mount photographs on heavy paper or cardboard. Do not include line drawings and photographs in the same plate. Prepare for a reduction to a 4¼ inch width when giving magnifications. Place author, title and figure numbers on back of illustrations.

Original illustrations are not satisfactory for sending to reviewers; mailing more costly and the possibility of damage is increased with each shipment. Authors should submit in addition *one good copy of each original plate*. If authors are unable to supply such copies, review of the article may be delayed until the Editor-in-Chief has copies made following negotiations with the author.

Tables. Keep tables to a minimum. Place each table on a separate sheet. Number consecutively with Roman numerals. Make titles brief. Avoid vertical lines. Use symbols or letters, not Arabic numerals, for table footnotes.

Literature cited. Cite references in the text by number (preferred since it is less costly) or by author-date. Arrange references alphabetically by author regard- less of the system used. For all citations follow the AIBS STYLE MANUAL. Refer to recent issues of MYCOLOGIA. Do not cite personal communications, unpublished data, or manuscripts in Literature Cited; place in the text. Manuscripts are not "in press" unless actually accepted by a journal; if so, cite volume number if possible.

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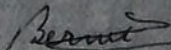
justified in publishing it and that the guidelines you refer to as being used in judging reviews are objective and conducive to the fair treatment of authors.

Every reviewer must use his discretion in his choice of language, but I find nothing even faintly reprehensible in Sutton's review. Where he disagrees with the author's interpretation he indicates the reason for his objection and suggests an alternate view, so that his criticism is constructive. There traditionally have been many differences of opinion on nomenclatural matters and even on the international level, competent mycologists are not infrequently found to be at odds regarding nomenclatural or taxonomic interpretations.

Dr. Sutton opens his review with the remark that "no one can deny the scholarship and attention to detail that have gone into this study..." Is this the statement of an "unreasonable," "irrational" man? Yet, among the adjectives chosen by Dr. von Arx to characterize Sutton's review are: unjustified, insulting, tendentious, ridiculous, meaningless, unreasonable and irrational. These demeaning terms, in my opinion, are hyperbolic and I also agree with you that Dr. von Arx's suggestion that Dr. Sutton "may be unwell" (a thinly disguised expression to indicate that the reviewer may be mentally unbalanced) is quite shocking. The further admonition that the repetition of a "similar incidence" (sic) "will damage the pleasant understanding which exists in the mycological world..." is verbiage. I take the charitable view that Dr. von Arx has probably over-reacted. To paraphrase Pope:

What dire offense from nomenclatural causes springs,
What mighty contents rise from trivial things...

Sincerely yours,



Bernard Lowy

Editorial Board, Mycologia

Consulting Editor, Revista/Review Interamericana,
Puerto Rico

BL/nam

THE MYCOLOGICAL SOCIETY OF AMERICA

FOUNDED DECEMBER, 1931

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Office of the Book Review Editor
MYCOLOGIA
official journal of the Society

1 March 1976

Dr. J. A. von Arx
Centraalbureau voor Schimmelcultures
Oosterstraat 1
Baarn, THE NETHERLANDS

Dear Dr. von Arx:

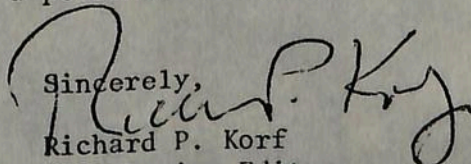
I am in receipt of your mimeographed letter dated January, 1976 sent "mainly [to] publishers of mycological periodicals and to some distinguished mycologists," in which you expressed your dismay concerning the book reviews by Dr. B. C. Sutton which appeared in MYCOLOGIA 66: 732 [as 132]. 1974, and TRANSACTIONS OF THE BRITISH MYCOLOGICAL SOCIETY 65: 349. 1975.

Since therein you state that "We are unable to comprehend why such irrational and unjustified reviews are allowed to appear in periodicals of high repute. Further we feel that the editors would have done well not to release the reviews in order to protect the reputation of their writer," I feel compelled, as Book Review Editor of one of the journals in question, to express myself to you and to the members of the Editorial Board of that journal.

My letter of inquiry to prospective reviewers contains the following paragraph:
"Content of the reviews is solely the prerogative of the reviewer, but I may make suggestions for change should your review be too damaging or too personal. Please avoid interjecting your own contrary conclusions unless these are previously published. Make sure your readers know whether you think the volume is worth their purchasing (or having their library find the money to buy one)."

In the case of Sutton's review of van der Aa's "Studies in Phyllosticta I," I did not consider the review too personal nor damaging. I felt that Sutton had a right to his nomenclatural conclusion that it would have been preferable to take up Phyllostictina, and that required much explanation. Sutton noted that "for many this will be the standard work on Phyllosticta (or Phyllostictina..." which to me means that he knows well that everyone will need to buy it who wants to know their way around this group of fungi. I did think the review a bit testy, but that seems to be Sutton's style. I feel I had no reason to reject this review, either to protect the reputation of Sutton or of van der Aa. Reviewers need as wide a leeway in expressing opinions as editors can offer them, within the limits of libel. The reader, after all, judges not only the book but the reviewer!

On the other hand, I must confess that I am shocked by the statement in your letter that "the reviews have further given us the impression that the author may be unwell and somewhat highly strung." To my mind that is a personal attack on a person, not on what he has written.

Sincerely,

Richard P. Korf
Book Review Editor
MYCOLOGIA

rpk/me
xc: Members, Editorial Board, MYCOLOGIA
Dr. B. C. Sutton
Dr. A. G. Morton, Editor, TBMS

This is written in response to two book reviews by B.C. Sutton which were published in Mycologia 66: 132. 1974 and in Trans. Br. Mycol. Soc. 65: 349. 1975. Our first reaction was that they were unjustified, insulting and tendentious. In the intervening period we have discussed the matter with both Dutch and foreign colleagues and with staff members of CBS. We are now of the opinion that the reviews are so ridiculous and meaningless as not to warrant serious consideration. The reviews have further given us the impression that the author may be unwell and somewhat highly strung.

More unreasonable reviews of this nature will damage the pleasant understanding which exists in the mycological world and hence every measure must be taken to prevent the occurrence of a similar incidence. We are unable to comprehend why such irrational and unjustified reviews are allowed to appear in periodicals of high repute. Further we feel that the editors would have done well not to release the reviews in order to protect the reputation of their writer. For the various reasons mentioned above we are sending copies of this mimeographed letter to mainly publishers of mycological periodicals and to some distinguished mycologists.

Baarn, January 1976.

J.A. von Arx

Dr. B. Lowy Ed. Board
Mycological Herbarium
Louisiana State Univ.
Baton Rouge, LA 70803

MYCOLOGIA

Office of the Editor
Department of Botany
University of Massachusetts
Amherst, Massachusetts 01002

24 March 1976

Dear Bernie,
Would you be willing to review the enclosed manuscript for MYCOLOGIA?

Psychotropic mycoflora of Washington, Idaho, Oregon, California, and British Columbia
by G. Guzman, J. Ott, S.H. Pollock and J. Boydston

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal.) Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered:

1. Is the material new and worthy of publication in MYCOLOGIA?
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6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated.

Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer.

Thank you for your assistance.

Sincerely,

Margaret

M.E. Barr Bigelow
Editor

Thank you for the review of the Oso paper also.

Comments on "Psychotropic mycoflora...." by G.Guzmán et al

The authors state (p.2, 1.1) that "P. semilanceata var. microspora Sing. described from Chile(14) is synonymous with P. pelliculosa. This synonymy is reported here for the first time." This would seem to require justification beyond a simple statement of opinion, particularly since it is made without qualification. Was Singer's or other herbarium material examined, or is this based on descriptions in the literature ? Synonymy is not generally established by dictum, but as a result of careful study, so the authors should either give their reasons or qualify their statement in some manner, indicating that evidence will be forthcoming to support their contention.

Also on p.2, Amanita muscaria var. flavivolvata Sing. is referred to, but in both ed. 2 and ed. 3 of "Agaricales..." Singer has indicated that this is a subspecies. Although this is not a nomenclatural paper, these small deviations indicate a certain carelessness. This is evident also in the citation on p.2 of Amanita muscaria (Fr. ex L.) Hooker, instead of (L. ex Fr.) and on p. 4, Panaeolus campanulatus (Fr. ex L.) Quél. appears, instead of (L. ex Fr.).

The paper is certainly worthy of publication.

PSYCHOTROPIC MYCOFLORA OF WASHINGTON, IDAHO,
OREGON, CALIFORNIA AND BRITISH COLUMBIA

by

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Classic ethnobotanical studies in Mexico (5,6,13) have stimulated modern interest in psychotropic fungi. In recent years, recreational use of psychoactive mushrooms has become popular in the United States and other countries (10,11,18). The Pacific Northwest abounds in psychotropic species of at least four genera, Psilocybe, Panaeolus, Conocybe and Amanita (1-3,6-9, 12, 17), and recreational use of these mushrooms seems to be as widespread there as in any other area.

During the fall of 1975, Pollock, Boydston and Ott collected hallucinogenic mushrooms in Washington and British Columbia. Specimens of hallucinogenic mushrooms were also obtained from Oregon, Idaho and California. All of this material was deposited in the herbarium of Escuela Nacional de Ciencias Biológicas (ENCB) in Mexico City, and identified by Guzmán and Ott. Valuable specimens were obtained on loan from the herbaria of San Francisco State University (SFSU), the University of Washington (UW) and Oregon State University (OSU). Psychoactive species studied are listed by state in Table 1. This paper is a preliminary communication. A world monograph of the genus Psilocybe is currently being prepared by Guzmán with the collaboration of Ott and Pollock.

Washington - Two of the most common hallucinogenic mushroom species, widely consumed throughout western Washington, are called "Liberty Caps" by recreational users. This vulgar name refers to both Psilocybe semilanceata (Fr.) Kumm. and P. pelliculosa (Smith) Sing. & Smith, which are generally indistinguishable by macroscopic features. P. semilanceata has spores measuring 12-16 x 7.5-8 μ .

abdominal cramps sometimes occur, and are generally well managed with supportive therapy. Atropine is contraindicated in the management of any mycetism resulting solely from psychoactive species. Field and laboratory studies strongly indicate that psychoactive mushroom use as it normally occurs does not constitute a drug abuse problem or a public health hazard.

Acknowledgements - We are indebted to J. Halpern, P. Stamets, P. Vergeer, G. Rafanelli, R. Knights, R. Gerrish, R. Haard, B. Duncan, W.S. Chilton, K. Scates, A. Weil, P. Herning, and L. Robson for assistance in collecting material, and to H.D. Thiers of the San Francisco State University, D.E. Stuntz of the University of Washington, E.E. Tylutki of the University of Idaho, and F. Rhoades and A. Rossman of Oregon State University, for the loan of herbarium material. Ott is indebted to Centro Mexicano de Estudios en Farmacodependencia, for financial support of his studies, and Guzmán is indebted to COFAA of the Polytechnic Institute for his research fellowship.

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Comptes Rend.
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Table 1 - Material Studied

A. Washington

1. Amanita muscaria ^{L.} (Fr. ex L.) ^{Fr.} Hooker ^{SSP} var. flavivolvata Sing. - Pollock 76-1 (ENCB) -
2. Conocybe smithii Watling - Ott 75-18 (ENCB)
3. Panaeolus subbalteatus (Berk. & Br.) Sacc. - Ott 75-6 (ENCB)
4. Psilocybe cyanescens Wakefield - Ott 75-1, Ott/Pollock 75-2, Ott 75-4, Benedict/Brady 1962 (ENCB)
5. Psilocybe pelliculosa (Smith) Sing. & Smith - Gerrish 01, Ott 75-3, Ott 75-5, Ott 75-7, Ott 75-9, Ott 75-12, Ott 75-13 (ENCB), Stuntz 12194, Stuntz 12253 (UW), Thiers 24014 (SFSU), Tylutki 4085 (ENCB)
6. Psilocybe semilanceata (Fr.) Kummer - Pollock 10/26/75, Haard 10/30/75, Haard 11/25/74 (ENCB)
7. Psilocybe sp. - Ott 01, Ott 75-8, Ott 75-14, Ott 75-15, Pollock 10/26/75, Benedict/Brady 1962 (ENCB), Stuntz Aut 73 (UW)

B. Idaho

1. Psilocybe pelliculosa (Smith) Sing. & Smith - KS 2465 (ENCB)

C. Oregon

1. Panaeolus castaneifolius (Murr.) Smith - RHO 205 (ENCB)
2. Panaeolus foeniseccii ^{Pers. ex} (Fr.) Kühner - Ott/Pollock 10/31/75 (ENCB)

3. Panaeolus sphinctrinus (Fr.) Qué. - Dunham 01 (ENCB)
4. Panaeolus subbalteatus (Berk. & Br.) Sacc. - Ott/Pollock
10/31/75. RHO 183 (ENCB)
5. Psilocybe baeocystis Sing. & Smith - RHO 209 (ENCB)
6. Psilocybe pelliculosa (Smith) Sing. & Smith - Ott 75-19
(ENCB)
7. Psilocybe semilanceata (Fr.) Kummer - Weil 11/74, RHO 182,
RHO 227 (ENCB)

D. California

1. Panaeolus campanulatus (Fr.)^{exl. ex Fr.} Qué. sensu Hora - Herning
11/75 (ENCB)
2. Psilocybe baeocystis Sing. & Smith - Thiers 24723 (SFSU)
3. Psilocybe cyanescens Wakefield - Vergeer 11/74 (ENCB),
Thiers 26886, Thiers 32138 (SFSU)
4. Psilocybe sp. - Ott 75-21 (ENCB)

E. British Columbia

1. Psilocybe baeocystis Sing. & Smith - Haard/Pollock 76-2
(ENCB)
2. Psilocybe pelliculosa (Smith) Sing. & Smith - Haard/Pollock
10/28/75 (ENCB)
3. Psilocybe semilanceata (Fr.) Kummer - Pollock 10/21/75
(ENCB)
4. Psilocybe strictipes Sing. & Smith - Haard/Pollock 76-1
(ENCB)
5. Psilocybe sp. - Haard/Pollock 10/28/75 (ENCB)

Dr. B. Lowy Ed. Board
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Louisiana State Univ. Office of the Editor
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University of Massachusetts
Amherst, Massachusetts 01002

8 March 1976

Dear Bernie,
Would you be willing to review the enclosed manuscript for *MYCOLOGIA*?

Phallus aurantiacus from Nigeria by B.A. Oso

If so, please prepare two copies of your criticisms, one on unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal.) Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

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Any other comments or criticisms will be appreciated.

Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer.

Thank you for your assistance.

Sincerely,

Margaret

M.E. Barr Bigelow
Editor

I acknowledge receipt of your ms. & information about your absence - M.

Comments on "Phallus aurantiacus from Nigeria" by B.A. Oso

Choice of the name Phallus aurantiacus Montagne (not Montague) is questionable. Most authors cited in this paper (including Dring) recognize P. rubicundus (Bosc) Fries and indicate P. aurantiacus Mont. is a synonym. It is curious that the author did not consult A.M. Bottomley's excellent "Gasteromycetes of South Africa" (in Bothalia 4, Pt. 3, 1948) where P. aurantiacus is also given as a synonym of P. rubicundus, or Lloyd's "Synopsis of the known phalloids," yet he finds it appropriate to cite Goos on the phalloids of Hawaii.

Anomalies in the phalloids (comment p.5, par.2, last sentence), though infrequently reported are not entirely unknown. For example, a note on anomalous specimens of Mutinus ravenelii appeared in Mycologia 50: 792-794. 1958.

The author (p.8, last par.), after citing the occurrence of several phalloids on sugar cane roots states that "the Stinkhorns have not been said to be of any other economic use." In C.M. McIlvaine & R.K. Macadam's (1902) "One thousand American fungi" (Dover Publication reprint 1973) is found the following interesting comment under Phalloideae (p. 570): "There are but few edible species within this family, and those edible only when very young."

Data relating to developmental aspects, uses of some Nigerian Phallales by "traditional doctors" and folkloric beliefs associated with the group as a whole are of great interest.

Publication of this paper is strongly recommended.

B. Lowy

16-III, 1976

PHALLUS AURANTIACUS FROM NIGERIA

BY

B. A. OSO,
DEPARTMENT OF BOTANY,
UNIVERSITY OF IBADAN,
IBADAN, NIGERIA.

Fruiting body development in Phallus aurantiacus

Montague has been carefully followed in the natural habitat on a lawn in the Department of Botany, University of Ibadan, Nigeria. Even though fruiting bodies appeared one or two at a time, the pattern of growth was observed to describe a ring about 2 metres in diameter. In a number of cases two fruiting bodies were found developed within an "egg". The structure of the fruiting bodies as observed in the laboratory are described. The traditional beliefs concerning the origin of the Stinkhorns and their usefulness to the Nigerian people in the preparation of native medicines and charms are discussed.

approximately 2 metres in diameter. Fruiting bodies appeared at random on the ring, i.e., fruiting body formation did not start at a point and proceed in order until a ring was described.

After some time (early June) it stopped raining abruptly for about three weeks, and this put an end to further fruiting. On the subsequent resumption of the rains, however, no more fruiting bodies were produced.

It was of particular interest in this study to observe the development of two fruiting bodies within one "egg". Three of such cases were observed. In one the stipes of the two fruiting bodies were separate while their caps were joined. (FIG. 6). In the other two, both the caps and the stipes were fused together almost down to the base (FIG. 7). This is an occurrence which has, perhaps, not been reported before in this group of fungi.

Economic Importance of the Stinkhorns

The Stinkhorns are generally recognised by the Nigerian people to be poisonous. Many keep away from them partly because of this and partly because of the bad odour emanating from them. The fungi are, however, generally used in the preparation of bad charms by the traditional doctors.

The Yoruba people of the Western State of Nigeria ~~call~~ call these fungi Akufodewa (Yor ku = die + fun = for + gde = hunter + wa = search) (Oso, 1975). A Yoruba mythical story connects the origin of the Stinkhorns with the millipede. This story tells us that many years ago the millipede, who was then a hunter, went to the forest to hunt. As soon as

"his" enemies knew that "he" was in the forest they surrounded "him" with fire, and "he" was eventually burnt to death. When "he" failed to turn up at home, "his" relations organized a search party into the forest. When they got to the spot where "he" was burnt to death they discovered that a fungus (Stinkhorn) had already grown there. They therefore named this fungus Akufodewa, in memory of the hunter millipede "who" had died in the forest. The Yoruba hunters today still pay tribute to the memory of the millipede during their annual festival.

Because of the above incident, the Stinkhorns are now used in the preparation of a charm known in Yoruba as Egbe, a charm which has the power of making one invisible in the face of any danger. It is mostly used by hunters. To prepare this charm, fruiting bodies of any of the Stinkhorns are pulverised by roasting in a pot together with a bull-roarer and leaves which have fallen off a tree but have not touched the ground. The powder is collected in a piece of cotton wool and tied into a small ball with white and black threads. This is then sewn onto a leather strap which is worn as a belt by the hunter when he goes game hunting. In the face of any danger in the forest, either from wild animals or from any other source, the hunter simply recites some verses and then calls on the charm to make him invisible.

The Stinkhorns are also used by the Yoruba traditional doctors in a medicinal preparation for curing leprosy. This preparation is obtained by pounding the fruiting bodies of any of the Stinkhorns with some other

herbal ingredients and mixing properly with indigo. A portion of this is mixed with the African black soap for washing the affected part, while the other portion is mixed with cream and rubbed regularly on the affected part.

Apart from the above, the Yoruba use the Stinkhorns in the preparation of a number of harmful charms including those capable of making people go insane.

The Urhobo people of the Mid-Western State and the Ibibio people of the South-Eastern State of Nigeria also associate the Stinkhorns with the millipede and use them in the preparation of harmful charms. The Urhobo name for the fungi is Uwovwi-rerivwi (Urhobo Uwovwi = house + re = of + rivwi = millipede). In folklore, the Urhobo believe these fungi to be houses built by the millipede and claim that these creatures are often found under them. The Ibibio call the fungi Efoketin (Ibibio efok = house + etim = millipede).

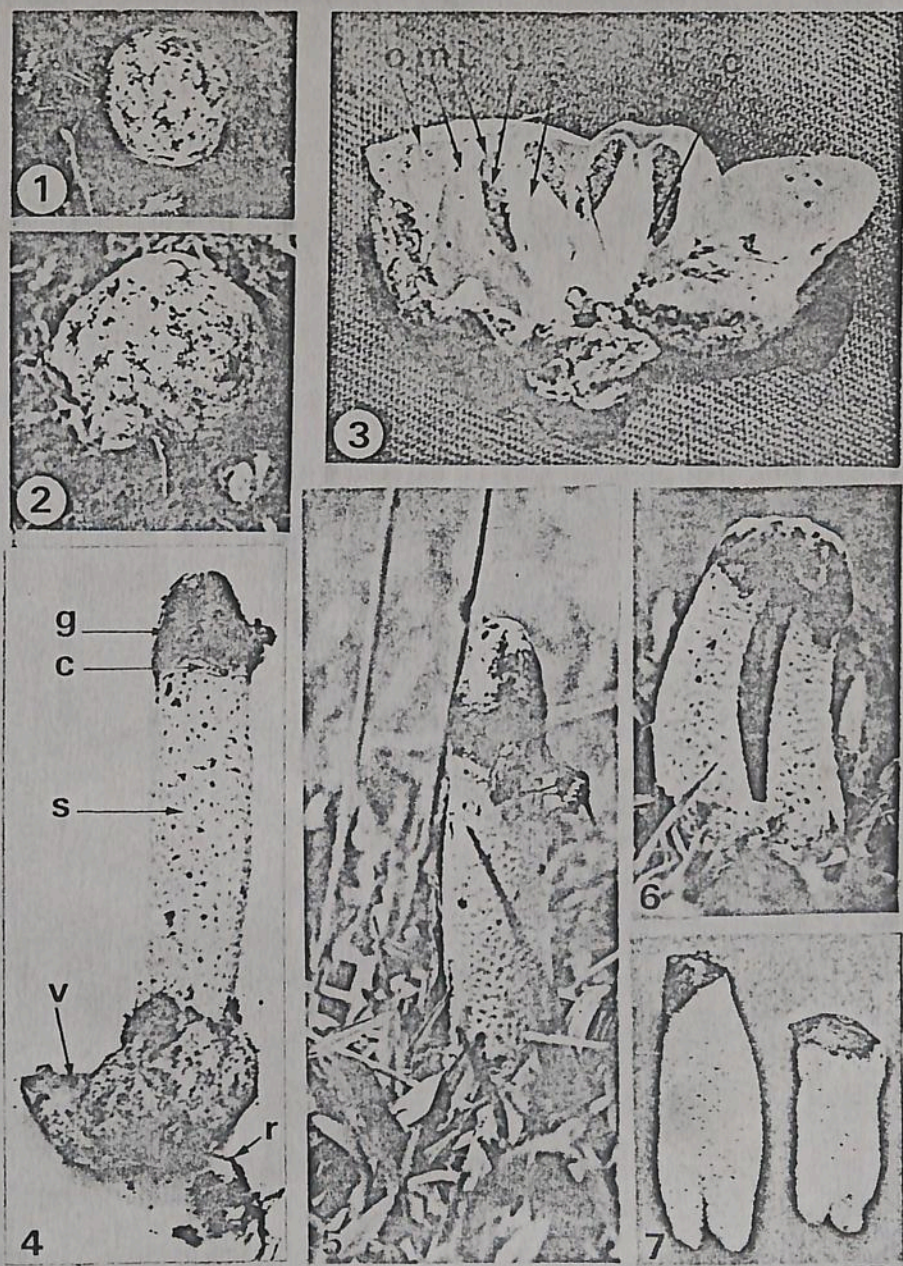
In parts of Asaba and Ishan Divisions of the Mid-Western State these fungi are connected with death because of their smell and their supposed poisonous nature and they are used both in the preparation of harmful charms and charms which confer immunity against evil attacks. In Ukwu-Nzu area of Asaba Division the fungi are known as Oga-egungun (Ukwu-Nzu oga = net, fence + egungun = dead person, i.e., the fence between life and death), while in Ishan Division they are called Ogenlinen (Ishan oga = net, fence + enlinen = the other world, i.e., heaven).

In parts of the East-Central State the Ibo people associate the Stinkhorns with the devil and use them in the preparation of harmful charms and poisonous medicines. The name given to the fungi is Ere-mma (Ibo ere = mushroom + mma = devil).

DISCUSSION

Stinkhorns have been reported in many parts of the world and in almost all cases attention has been drawn to the occurrence, fruiting body production and structure, and spore dissemination (Dring, 1964; Alexopoulos, 1962; Grainger, 1962; Ingold, 1965; Goos, 1970; Webster, 1970; Jackson and Webster, 1972; Zeberl, 1972). No mention has, however, been made of ring formation by the fruiting bodies and only one fruiting body has been shown to be produced within an "egg". While it has been observed in the present study that P. aurantiacus could produce its fruiting bodies in a ring, it has also been shown that more than one fruiting body could develop within an "egg" of this same fungus.

Certain Stinkhorns, including Linderiella columnata and Phallus rubicundus have been reported as occurring on all the principal islands of Hawaii associated with root disease of sugar cane (Cobb, 1906), while Dictyophora has also been mentioned as the cause of root disease in sugar cane in Australia (Martin et al., 1961). Apart from these, the Stinkhorns have not been said to be of any other economic importance. It is therefore of particular interest to discover in this study that Nigerians use these fungi economically in the field of traditional medicine.



PHALLUS AURANTIACUS
 B. A. O. S. O.
 FIGS. 1-7

O. S. O. did not include a review copy of illustrations,
 so this is only a poor sample -

Bernie Lowy

Received: 20-V-'74.

This is a revision of a paper you reviewed earlier.

The error in your name had been discovered and will be corrected in the May-June issue. Sorry.

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 17 May, 1974
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA? Mushrooms and the Yoruba people of Nigeria.

by B. A. Oso

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered.

1. Is the material new and worthy of publication in MYCOLOGIA?
2. Is the presentation clear and logical?
3. Are the conclusions justified by the evidence?
4. Could the paper be shortened substantially without interfering with its value?
5. Have the tables been prepared as clearly and concisely as possible?
6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated. Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer. Many thanks.

Sincerely,

Dick

R. K. Benjamin
Editor

Have noted
your departure on
May 28 for the
summer.

Comments on "Mushrooms and the Yoruba people of Nigeria," by
B.A.Oso

p.2, par. 2 - "Where possible, the botanical names of the fungi are given. Further research will be carried out on the identification of the others later on."

If identification will eventually be possible, this would be much more desirable now rather than later. Every effort should be made toward this end, even if it means a slight delay in publication. Of the 15 fungi (in 8 genera) listed as "edible," 7 have been identified to species and of the 6 genera of "poisonous and non-edible mushrooms," only Daldinia concentrica is fully identified.

p.5, par. 4 - "Auricularia auricula-Judae Fr." should be cited as Auricularia auricula-judae (Fr.) Schroet., but in any case it is a synonym of A. auricula (Hook.) Underw. It is very doubtful that this species occurs in equatorial Africa and more likely that A. fuscosuccinea (Mont.) Farl., with which it may be confused, is found there. The latter is common throughout the tropics, where it is known to be edible. (See Mycologia 44. 1952.)

p.7, par.1 - "AJEGB'ARUWO" - It would be especially important to have this species of Amanita correctly identified. The translation "eat and hear the noise of heaven," is highly suggestive of an hallucinogenic species rather than of a deadly poisonous one. The author says nothing about its morphology, yet a mushroom regarded "as the most deadly," deserves exact identification and leaving this for a "later" publication is really unsatisfactory. At the bottom of the same page, "OLU-OPOLO" is listed as another Amanita with "a large scaly pileus resembling the body of a toad." Here too, exact identification is needed.

I believe that the following points are also pertinent.

- 1) Were voucher specimens collected and are they on deposit in a herbarium? If so, the author should mention this.
- 2) Since this investigation is based upon specimens seen by the author, in the interest of greater precision at least the macromorphology of the genera and species identified should be given.
- 3) I question the necessity of fig. 1, but on a more detailed and sophisticated map than is shown in fig. 2, the author might well indicate localities where specimens were seen or collected. For better orientation, some important place names of cities and rivers, latitude and longitude as well as a scale in kilometers should be included.
- 4) The "Literature Cited" is not such in the usual sense, since none of the 5 sources is referred to in the paper. Either appropriate references to these sources should appear in the text or the list should be omitted. It is surprising not to find Heim's (1942) work on "Les agarics termitophiles d'Afrique tropical" mentioned, since the author includes 7 species of Termitomyces, 4 of which are unidentified. (also Heim 1952 and 1958)

This paper is of exceptional interest, being the first of its kind on ethnomycology in Nigeria and is certainly worthy of publication, though perhaps not in its present form. I would implore the author to make a few alterations along the lines suggested, then resubmit his paper to the editor.

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

5 Feb., 1974

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?
Mushrooms and the Yoruba people of Nigeria.

by B. A. Oso

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

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Sincerely,

Dick

R. K. Benjamin
Editor

*Hope you had a
very good sleep!*

MUSHROOMS AND THE YORUBA PEOPLE OF NIGERIA

BY

B.A. OSO,

Department of Botany,

University of Ibadan,

Ibadan, Nigeria.

The Yoruba people, with a population of about 11 million occupy both the Western and the Lagos states as well as parts of the Kwara State of Nigeria (Figs. 1 and 2). They speak the Yoruba language, which is very rich in expressions and terminologies reflecting their interesting and distinctive culture. To my knowledge, nothing has previously been published on the subject of how the Yorubas relate to, and use mushrooms in their daily lives. This is intended as the first in a series on mushrooms and the various groups of Nigerian people.

The Yorubas have recognized mushrooms for many years, inasmuch as they have always played an important role in their everyday life. The present research was carried out in the Western State - the largest of the Yoruba speaking States with a population of about 9.5 million people - by undertaking a tour of the towns and villages and interviewing the people in order to determine their knowledge of fungi and also by examining some fungal specimens with them. The market women who sell vegetables and mushrooms in stalls and the elderly people were most helpful in supplying information. What is reported below is a collection of facts obtained from different parts of the State. While some of this information is local to certain parts, much of it is common to all areas of the

Western State. The people have names in Yoruba language for the different species of mushroom. These names are descriptive, giving an indication either of their habitat, morphology, texture, or of their growth habit. They go mushroom hunting during the rainy season and collect the edible mushroom both for personal consumption as well as for sale. It was, therefore, no surprise to learn that there are local sayings and beliefs connected with fungi. These beliefs sometimes play a role in determining whether certain mushrooms are edible. They may also help determine which fungi may be used for medicinal purposes by the Yoruba native doctors.

This article gives, among other things, a list of some of the Yoruba names for the different fungi and a translation of these into English, a brief description of the activities of the people during fungus forays and their beliefs about fungi. Where possible, the botanical names of the fungi are given. Further research will be carried out on the identification of the others later on.

The usefulness of fungi to the Yoruba people in local medicinal practices will be dealt with in another paper.

In certain parts of the State the Yoruba name for a fungus or mushroom is "Olu", while in other parts it is known as "Osun". The separate Yoruba names for the different species of fungi are given in capital letters below and each is followed by the English translation showing how it is derived. For convenience of description, the fungi have been grouped into the edible and those believed to be poisonous ones.

THE EDIBLE MUSHROOMS

The edible mushrooms have been placed into five categories by me

according to the derivation of their names, viz. those named according to the taste, morphology, growth habit, texture, and the habitat of the mushroom.

(a) Mushrooms named according to tastes:

OGIRIAGBE (Yor. OGIRI = a Spice made locally from melon and used for seasoning soup + AGBE = farmer, i.e. the farmer's spice). This mushroom is commonly used by farmers for seasoning soup on the farm. It is known as OGIRIOBUN in some parts of the State. This is Volvariella sp.

TAKELE (Yor. TA = distinguish + OKELE = morsel, i.e., a mushroom which makes a delicious meal). This is Termitomyces sp. It grows on soil in contact with termite nests. It is also known as OLU-ESUNSUN (Yor. OLU = mushroom + ESUNSUN = winged termite). It makes its appearance at the beginning of the rainy season, i.e. around April, and because of this it is also called OLU-ABOJOSE (Yor. OLU = mushroom + BA = with + OJO = rain + SE = begin). This is a period before the ripening of the early maize and when the Yams (Dioscorea spp) of the previous year are rare and very expensive. The people have a local saying connecting this scarcity of yams with the appearance of the mushroom:

"Omode ki ini isu l'oko nigbati Takele nhu;
agbalagba ti o ni isu l'oko ni akoko yen,
oju ni o nro."

This means that at this period of the year when the mushroom makes its appearance, yams are so scarce that they can only be found on the farms of old experienced farmers who can afford to economize food. The appearance of this mushroom is an indication that new yams should be

ready in another two months or so.

(b) Morphology:

EWE (Yor. WE = expand, i.e., the mushroom with expanding pileus).

It has a pileus which is gæobular at first (the button stage), but later expands gradually until it becomes almost flat. The fungus is Termitomyces robustus, (Beeli) Heim.

It grows in large numbers in contact with termite nests on forest soils from August to October and it is much sought after by the people who consider it the sweetest of all the mushrooms. The heaviest rains in this area occur around August to September and the people simply call the rains "EJI EWE" (Yor. EJI = rains; EWE = Termitomyces robustus), i.e., the "T. robustus rains."

RORO (Yor. RORO = tiny, narrow, fine), a mushroom with a long tapering rhizomorph and a small pileus. The mushroom is Termitomyces ^{Heim,} mammiformis, growing on soil in contact with termite nests.

ABURUKORO (Yor. IRU = tail + KORO = long). This mushroom also has a long rhizomorph, but the pileus is larger than that of RORO. It is known as SORO (Yor. SORO = long) in some parts of the Western State. The fungus is a Termitomyces sp. growing between September and November.

GUNNUGUN: This grows on soil. It has a narrow stipe and a dull colour, hence the name. It is Agrocybe broadwayi (Murr.) Dennis.

(c) Growth habit:

OLUREJE (Yor. OLU = mushroom + IBI = place, spot + MEJE = seven, i.e., a mushroom growing in seven different spots). The mushrooms grow in large groups on soil and the people have been able to count at least

seven groups produced within short distances of each other. This is another Termitomyces sp. which also grows around September - November.

OLUORAN (Yor. OLU = mushroom + RAN = spread) The sporophores are very small and they appear in groups spreading over a large area of soil. They usually make their appearance after heavy rains. This mushroom is Termitomyces microcarpus (Berk. & Br.) Heim.

OHU (Yor. HU = grow). This fungus produces a big, more or less spherical, white, subterranean sclerotium, sometimes up to 25 centimetres or more in diameter. If the sclerotium is kept in a cool moist place it continues to produce (grow) white sporophores over a long period of time, hence the name. A farmer coming across the sclerotium while cultivating his farm usually takes it home and obtains his mushrooms from it in this manner. The fungus is Pleurotus tuber-regium (Fr.) Sing.

(d) Texture:

OLU-AWO (Yor. OLU = mushroom + AWO = leather). This mushroom has a tough texture and it is also known as ERIROKIRO (Yor. RO = tough). It is Pleurotus squarrosulus (Mont.) Sing. growing on wood.

ETIOLOGBO (Yor. ETI = ear + OLOGBO = cat, i.e., cat's ear), This fungus has a gelatinous texture and it is thrown into folds resembling the shape of an ear. It is found on wood. This is Auricularia auricula-judae (Fr.) Schrot.

WOWO (Yor. WO = break). The fruiting bodies of this fungus are very small in size and brittle. They are produced in large clusters at the base of dead trees. The fungus is probably Pseudocoprinus sp.

(e) Habitat:

ISOAPARO (Yor. ISO = effluvium + APARO = bush-fowl (Francolinus

bicalcaratus)7. The native people usually pick the fruiting bodies of this fungus among grasses and on cultivated farms where the bush-fowls are commonly found. They associate the appearance of the fungus with these birds and they have the belief that the fruiting bodies of the fungus are produced by them. This is Calvatia sp. (a puff-ball).

OLU-IHA (Yor. OLU = mushroom + IHA = palm fruit pericarp left in heaps to decay after the palm oil has been extracted from it). The mushroom is also known as SEPETE, a name which describes the decaying habitat. It is Collybia sp.

OLU-OKITI (Yor. OLU = mushroom + OKITI = termite mound). It has a very stout stipe and grows on the termite hill. The mushroom is a Termitomyces sp.

The native people have been able to observe the growth of many fungi on different kinds of dead wood and they have named each fungus after the wood on which it grows. There are many species of these and work is still going on over their identification.

The above represent only some of the mushrooms recognized by the Yoruba people to be edible. Out of these the Termitomyces species, are the most popular with the people.

THE POISONOUS AND NON-EDIBLE

MUSHROOMS

Apart from the edible mushrooms, the native people have also been able to recognize some poisonous or non-edible fungi, a few of which are listed below:

AJEGB'ARUWO (Yor. JE = eat + GBO = hear + ARUWO = noise, i.e., "Eat and hear the noise of heaven"). This name implies death for anybody who eats the mushroom. The people regard it as the most deadly of all mushrooms. This is Amanita sp.

AJEIMUTIN (Yor. JE = eat + IMU = without drinking + OTIN = alcohol, i.e., "Eat without drinking alcohol"). The people have learnt that it is safe to eat this mushroom provided it is not immediately followed by alcohol. Drinking alcohol at the same time it is eaten, however, makes it poisonous. This is Coprinus sp.

AKUFODEWA (Yor. KU = die + FUN = for + ODE = hunter + WA = search). This name is derived from the odour given off by this fungus which resembles that of a dead animal and also from the fact that, like a dead animal, it is usually covered by flies. A hunter smelling this in the forest will mistake the odour for that of a dead animal and start searching for it. The people observe the presence of a veil on some and its absence on others. These are the Stinkhorns, Phallus, Mutinus, Dicotyophora etc.

ASA-ITA (Yor. ASA = snuff + ITA = Celtis zenkeri (a big tree) (Bolt. ex Fr.) Ces. v de Not. i.e., the C. zenkeri snuff). This is Daldinia concentrica growing on the dead wood of C. zenkeri. There is a heavy deposit of ascospores on the surface and the surrounding of the stroma which resembles a snuff; the Yoruba name is derived from this.

OLU-GBONGAGA: The people describe this as growing on the dung-hill; they observe that the sporophore develops in the morning and deliquesces before evening. The fungus is Coprinus sp.

OLU-OPOLO (Yor. OLU = mushroom + OPOLO = toad; i.e., the Toad mushroom). The native people describe the mushroom as having a large

scaly pileus resembling the body of a toad. This is Amanita sp.

All the Yoruba people interviewed are of the opinion that any fungus growing on a living tree is poisonous.

Certain mushrooms present a problem of identification to the people and they find it difficult to tell whether they are edible or poisonous. One way they try to find out is by feeding them to chickens. They believe that any mushroom eaten by chickens is edible. Unfortunately this is not one-hundred per cent trustworthy.

Hunting, Selling, and Cooking Edible Mushrooms

The most popular edible mushroom with the people is "EWE", Termitomyces robustus. As mentioned earlier on, this grows around the month of August during the heavy rains and when it grows it is usually more abundant than any of the others. Mushroom hunting is done by women. They usually leave home very early in the morning to hunt for the mushrooms in the forests, and experience has shown them where the mushrooms could be found in abundance. Mushroom hunting is not necessarily a team work and it is done either for personal consumption or for sale or both.

During mushroom hunting, the people usually observe that Termitomyces robustus commonly grows scattered on the soil, but occasionally they find them growing in rings or crowded together in large clusters. In the latter case the natives refer to the mushrooms as congregating in a "market".

Another mushroom which has been observed by the people to grow in clusters is "OLUBEJE" (Termitomyces sp.). As mentioned earlier on, the natives have been able to count at least seven large clusters of

this mushroom growing within short distances of each other. The women, on coming across one cluster, usually throw around handfuls of soil and call out to the other groups to appear. A little search then reveals the other groups. The soil, presumably, is to expose the mushrooms by disturbing the weeds and the leaf liter that may be covering them.

The women collect the mushrooms from the forests and bring them in large baskets to the main road and display them by the road side for passers-by to buy. In most cases the women carry the mushrooms into their village or town for sale. Some women even trade in mushrooms by going to buy in large quantities at retailer's prices from the road-side sellers. They carry these into the town for sale to consumers, thereby making their own profits. The mushrooms collected in a day are usually cooked the same day. However, a few of the old women maintain their regular supply over a long period of time by smoking and storing large quantities of the T. robustus collected during the growing season. At present no mushroom growing farm has been established in Nigeria.

In general, prior to cooking, the pileus and stipe are cut into pieces and suspended for some time in cold water to which some table salt has been added. This is to kill any foreign bodies, such as maggots, which might have been deposited among the gills of the mushroom. It is afterwards well rinsed in cold water and boiled with enough salt to sweeten it. It may then be made directly into a soup by adding all the other essential ingredients like pepper, tomatoes, onions, oil, etc., and cooking, or it may be added to an okro soup

or a vegetable soup in which all the essential ingredients are already present.

Why some Yoruba people don't eat mushrooms

The people of Efon Alaye - a town in Ekiti Division in the Western State of Nigeria - traditionally do not eat "EWE" (Termitomyces robustus). In the last century there was a tribal war between the Ekiti people and the Ibadan people, both of whom are in separate Provinces in the Western State. As the news reached Efon Alaye that the Ibadan warriors were in pursuit of the Ekitis, the people of Efon Alaye deserted the town. They all fled through a common path, and by the time the Ibadan warriors reached Efon Alaye, "EWE" (T. robustus) had already grown over this escape path and covered their footprints. When the Ibadan warriors saw the mushrooms they thought among themselves that if the people had fled through that path the mushrooms could have been crushed. They then turned back and went another way. That was how the Efon Alaye people were saved from being taken prisoners or killed during the war. For this reason the Efon Alaye people had since considered the "EWE" (T. robustus) sacred and had forbidden the eating of this mushroom in the town. There is even a popular saying in the town condemning the eating of T. robustus by the people:

"Omo Olobalu ko gbodo je EWE

Ng ko fi igba se EWE

Ng ko fi awo se EWE

Ng ko duro galata ki ng da omi

EWE si ita ni Obalu."

In Yoruba land every town or village has a traditional head known as

the "Oba" (King) to whom all the subjects are responsible. The market place in each town is usually situated in front of the Oba's palace and the Oba is referred to as the owner of the market. At Efon Alaye, "Obalu" (in the above saying) is the name of the market and "Olobalu" means the owner of the market, that is, the Oba. The above saying simply means: "The Oba's subject must not eat T. robustus, hence I don't cook it."

The Yorubas have extended families and each family has a family name by which the members are commonly identified. Among such family names is "Olu". Hence, apart from being a name for the mushroom, "Olu" is also a family name as well as a name for individual people. Simply because of this similarity in names, members of those families with "Olu" as the family name don't eat mushrooms. It is not that it would have any adverse effect on them if they ate mushrooms, but they just hate to be called "Olu" and at the same time be eating "Olu" (the mushroom).

Other reasons given for not eating mushrooms are much less interesting. Some people claim that mushrooms give them stomach pains or rheumatism, while others are irritated by the fact that they are associated with decaying matters and also by the presence of maggots among the gills of some of them, e.g. Termitomyces robustus. The occasional news of people dying of mushroom poisoning has created so much fear in the minds of many as to make them decide to keep away from mushrooms for good.

Traditional beliefs as to the Origin of the Mushrooms

In the olden days some of the natives had the belief that the growth

of Termitomyces robustus was controlled by a god. Hence, in many of the villages, the people used to make an annual offering of a white hen to appease this god. This was usually carried out in a forest near the village by an aged woman. The people were convinced that there was always a poor growth of the mushroom any year the offering was not made.

Another belief, and one which is still held by many of the natives today, is that T. robustus drops from the skies along with the rains. As said earlier on, this mushroom grows around August when we have the heaviest rains. The rains at this period of the year are referred to as "EJI EWE", i.e. the "T. robustus Rains", and whenever it rains heavily it is common for the people to say:

"EWE nja lati Orun,"

meaning that the T. robustus is falling from the skies.

In Ekiti Division the people have a fable associating the origin of mushrooms with decay. It was customary among the Yorubas in the olden days for a bride to be accompanied by a maid to her marital home after the wedding and continue to live with her and run errands for her. The maid could either be the bride's younger sister, a younger relation, or a slave. After the wedding ceremonies it was customary for the bridegroom to return to his house without the bride. Later on in the evening the bride, accompanied by the maid, would then join him. In this fable it happened that the bride's maid was a slave and they had to cross a river on their way to the bridegroom's house. As they were about to cross, however, the slave pushed the bride into the river and

then disguised as the bride and went to the bridegroom's house. Luckily for the lawful bride, she was saved by the goddess of the river as she was drowning. The goddess brought her to the surface and left her by the river-side where the bridegroom's relations who later came to fetch water found her and took her home to the bridegroom. As a punishment for the wicked slave, a pin was dropped into a big pot of boiling water and she was asked to bring it out with her bare hand. In the process the slave fell into the pot and died. In those days corpses of wicked people were never buried; hence the slave's corpse was dumped on a dunghill. On visiting the dunghill a few days later, the people observed mushrooms growing on the body. As this was their first time of seeing mushrooms, the people therefore attributed the origin of mushrooms to the decaying corpse.

This is the first in a series on mushrooms and the various ethnical groups in Nigeria. Work is also in progress on the identification of the other mushrooms known to the Yoruba people as well as on the usefulness of fungi to them in local medicinal practices.

ACKNOWLEDGEMENTS

To all those who supplied information on this subject, I extend warm thanks. I am also grateful to Mr. R.O. Alabi for useful discussions during the course of the investigation and I wish to thank Professor O.R. Collins and Dr. S.O. Alascadura for reading through the manuscript.

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FIGURE LEGENDS

Fig. 1. A map of Africa showing the position of Nigeria (shaded area).

Fig. 2. A map of Nigeria showing the Yoruba speaking area (shaded area).

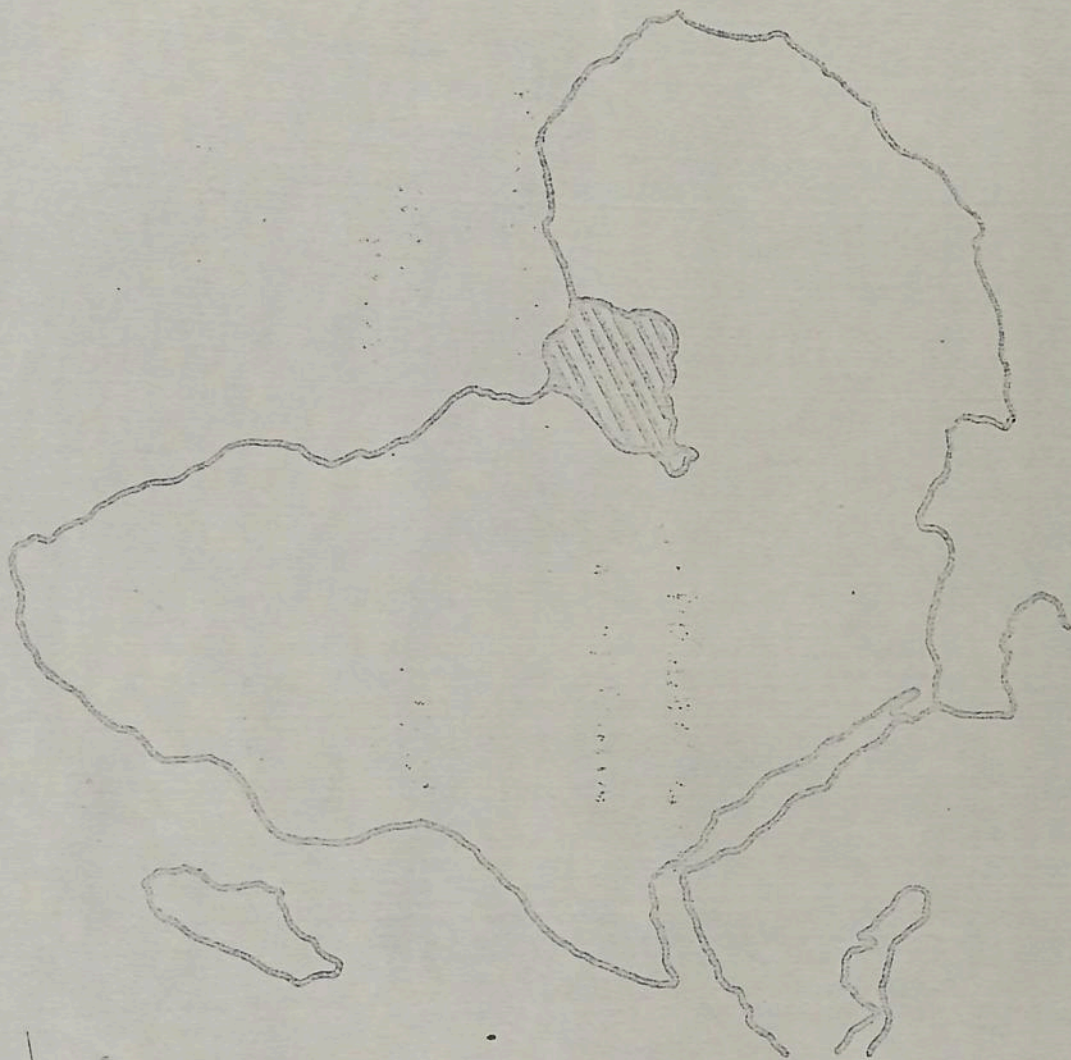


FIG. 1

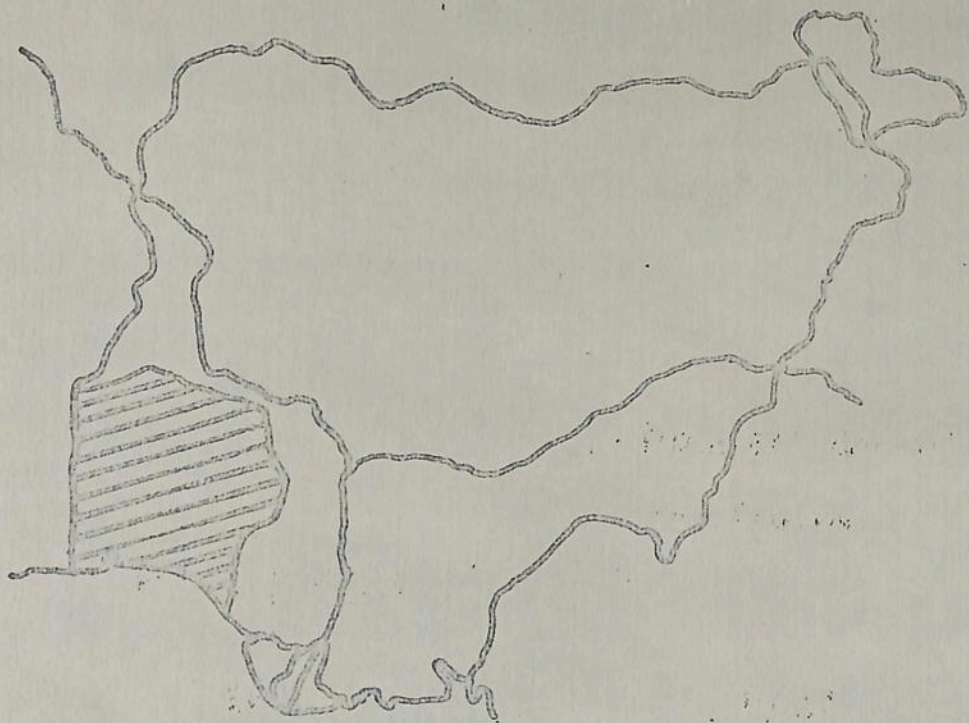


FIG. 2

Dr. B. Lowy
Mycological Herbarium
Louisiana State Univ.
Baton Rouge, LA 70803

Edit. Board

MYCOLOGIA

Office of the Editor
Department of Botany
University of Massachusetts
Amherst, Massachusetts 01002

19 January 1976

Dear Bernie,

Would you be willing to review the enclosed manuscript for MYCOLOGIA?

Cultural and other morphological studies of Sparassis radicata and
related species by K.J. Martin and R.L. Gilbertson

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal.) Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered:

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6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated.

Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer.

Thank you for your assistance.

Sincerely,

Margaret

M.E. Barr Bigelow
Editor

*No special comments on this solid contribution.
Recommended publication.*

Digitized by the Hunt Institute for Botanical Documentation

Received: 23-I-'76

Returned: 26-I-'76

1 CULTURAL AND OTHER MORPHOLOGICAL STUDIES OF
2 SPARASSIS RADICATA AND RELATED SPECIES¹

3 K. J. Martin and R. L. Gilbertson

4 Department of Plant Pathology, University of Arizona, Tucson 85721

5 SUMMARY

6 Sparassis radicata Weir was found to be heterothallic with a
7 bipolar type of mating system. Multiple alleles for incompatibility
8 occur at the locus for heterothallism. Tests were negative for the
9 production of extracellular oxidases on gallic or tannic acid media
10 and with gum guaiac solution. The optimum temperature for growth on
11 3.0% malt extract agar medium was 23-25 C.

12 Studies of some basidiocarps and cultures labeled Sparassis
13 crispa Wulf. ex Fr. from Europe and Japan show they are conspecific
14 with S. radicata. Specimens and isolates labeled S. crispa from
15 southeastern United States differed from the European and Japanese
16 specimens and isolates labeled S. crispa. Apparent dikaryotization
17 of single basidiospore isolates of S. radicata from Arizona by di-
18 karyotic isolates labeled S. crispa from Europe and Japan offers
19 additional evidence for the conspecificity of these fungi. Descrip-
20 tions of basidiocarps and cultural characters are given for S. radi-
21 cata and for specimens and cultures labeled S. crispa.

23
24 ¹ University of Arizona Agricultural Experiment Station Journal
25 Article No. 2360. This paper is based on part of a dissertation sub-
26 mitted by the senior author in partial fulfillment of the requirements
27 for the Ph.D. degree at the University of Arizona.

Dr. B. Lowy Ed. Board
Mycological Herbarium
Louisiana State Univ.
Baton Rouge, LA 70803

MYCOLOGIA

Office of the Editor
Department of Botany
University of Massachusetts
Amherst, Massachusetts 01002

19 December 1975

Dear Bernie,

Would you be willing to review the enclosed manuscript for MYCOLOGIA?

A neotype specimen for Amanita muscaria by D.T. Jenkins and R.H. Petersen

The authors disagree with the reviewer of this revised ms., so I would like your opinion on whether any changes should be made, or published as is. Thanks.

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal.) Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

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Any other comments or criticisms will be appreciated.

Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer.

Thank you for your assistance.

Sincerely,

Margaret
M.E. Barr Bigelow
Editor

David T. Jenkins

Department of Biology, University of Alabama at Birmingham,

Birmingham, Alabama 35294

Ronald H. Petersen

Department of Botany, University of Tennessee,

Knoxville, Tennessee 37916

SUMMARY

Taxonomically, Amanita muscaria has long been one of the more easily recognized taxa within the genus Amanita. Nomenclaturally, however, the name has been unstable due to the lack of a type specimen. In this paper a neotype specimen is designated and clarification is given to the reasons for the selection of the neotype locality. Jr / reasons are

Among the common problems encountered in fungus taxonomy is the lack of type specimens for well-known and often apparently well-understood names. Such is the case in Amanita, a large genus including many classic taxa and the source of a rich literature in ethnomycology and pharmacology. The type species of Amanita, without dispute, is A. muscaria (Linnaeus per Fries) Hooker, surely one of the best known and most easily recognized agaric taxa in Scandinavia whence the name came. This species' name, however, has never been furnished with a type specimen (Jenkins, 1974) and, although the margin for error in the identity of the taxon has always been thought small, the use of microscopic characters in fungus taxonomy has shown that type paintings, type descriptions and the like, especially those

¹This paper represents contribution no. from the Botanical

Laboratories, University of Tennessee, and was supported, in part, by

National Science Grant GB 32104 to the junior author.

Comments on "A neotype specimen for Amanita muscaria" by Jenkins & Peterson.

An ambiguity needs clarification. The sentence on p.2, par.2, 1.8 reads as follows: "Such is surely the case with Amanita muscaria, which received names, according to Wasson (1969), long before the Common Era." What "names" are being referred to? I interpret this to mean the names given by "pre-Linnaean authors," mentioned in the sentence previous to the one quoted. The context seems to rule out the possibility of reference to common names. If this is the case, Wasson's "Soma," while it contains a wealth of ethnomycological information about Amanita muscaria, it certainly has no pretensions of serving as an arbiter for the correctness of scientific names. For example, on p.10 of that work is found the citation "Amanita muscaria (Fr. ex L.) Quél," as the definitive one for this species. The combination is not adopted by the authors of this paper for a very good reason, namely, that it is not acceptable. Wasson is not and has never claimed to be a mycologist, so it is quite inappropriate to quote him on a nomenclatural matter. A more meaningful reference to this problem would be Donk's paper on "Typification and later starting points," (Taxon 6(9):245-256. 1957) in which the correct citation (as given by the authors of this paper) is briefly discussed.

In the same paragraph cited above, the authors state: "We consider that taxonomists are under no obligation to reach into pre-Linnaean literature for selection of type material, type locality etc., unless specifically directed to do so by Linnaeus." The first part of this statement regarding the obligations of mycologists is self evident. Article 13(f) of the Code is unequivocal on this point and gives us the valid starting point date (for Agaricales) as the "Systema," 1821. The last part of the statement is less clear. I do not understand how Linnaeus could "specifically direct" us to search the literature of his predecessors. But if he were somehow successful in this, mycologists would still be obliged to disregard such findings since the Code holds them to be invalid.

P.4, par.1: The authors say: "It would appear to us that because Linnaeus first cited the taxon from Lapponia and because Fries only enlarged the understood range of the taxon, a type gathering might well originate from north-central or northern Sweden . . ." Technically, the authors cannot be faulted for selecting a neotype within the range indicated by Linnaeus, but it is surely a matter of preference. A neotype chosen from Femsjö or from some other Friesian locality would of course be equally valid. I only question the validity of the authors' statement that ". . . Fries only enlarged the understood range of the taxon." Can there be any doubt that Fries had a better understanding of the taxon than Linnaeus? Linnaeus's general indifference to fungi need hardly be stressed. According to Wasson, "Linnaeus was a mycophobe." This is trivial, but if one must choose either a Linnaean or a Friesian locality, one known to Fries, the mycologist, would seem to be at least as fitting a choice as one known to Linnaeus, the mycophobe.

B. Lowy

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

24-XII-1975

Dear Margaret,

Since I am not a nomenclaturist, these animadversions may not be of much help to you in reaching a decision, but it seems to me that the question of the nomenclatural type for Amanita muscaria was decided and agreed upon previously. For example, I find Singer's citation (in his "Agaricales") as follows: "Type species: A. muscaria (L. ex Fr.) Pers. ex Hooker." The authors' descriptions seem excellent (Singer and Smith have done as much) but this has little bearing on the nomenclatural issue which is stressed.

I would suggest revisions along the lines indicated in the enclosed comments. A few additional suggestions and corrections are on the ms. For a definitive opinion on nomenclatural questions, I know of no mills that grind finer than those of Don Rogers and Luella Weresub.

Cordially,

Bernie
B. Lowy

All best wishes to you and Howard
for a happy new year.

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

15-VII-1975

Dear Margaret,

Congratulations on your courage in taking on the job of Editor!

Enclosed is Fidalgo & Ponce's ms which was sent to me by Dick Benjamin. I have appended my comments. If Clark Rogerson is willing to redo it, this would save you a lot of work.

With all best wishes,

Bernis Honey

MYCOLOGIA

OFFICIAL JOURNAL OF THE

MYCOLOGICAL SOCIETY OF AMERICA

PUBLISHED BY

THE NEW YORK BOTANICAL GARDEN

RICHARD K. BENJAMIN
Editor-in-Chief
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

CLARK T. ROGERSON
Managing Editor
The New York Botanical Garden
Bronx, New York 10458

Dear Bernie:

Clark Rogerson forwarded this to me and I told him I would have you look it over.

No attempt was made to prepare it according Mycologia rules-- or any other rules as far as I can see.

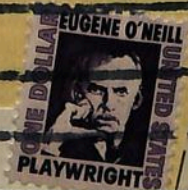
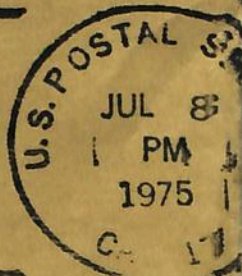
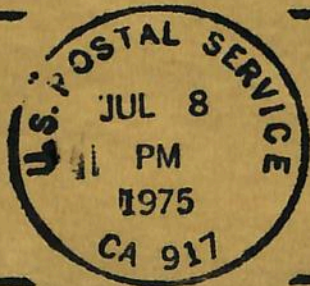
Clark said that if it is acceptable, they at the NYBG would redo it for Mycologia.

Only one set of figs was included with the ms.

You will note that I am addressing the return of your review to Margaret Bigelow, the new Ed.-in-Chief.

Best regards,

Dick



MYCOLOGIA

Editor-in-Chief R. K. Benjamin

RANCHO SANTA ANA BOTANIC GARDEN
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B. Lowy
Ed. Board

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 7 July, 1975
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Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?
The ethnomycology of the Sanama Indians.

by O. Fidalgo and G. T. France

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

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4. Could the paper be shortened substantially without interfering with its value?
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Any other comments or criticisms will be appreciated. Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer. Many thanks.

Sincerely,

Dick

R. K. Benjamin
Editor

Comments on "Ethnomycology ..." by Fidalgo & Prance

This paper has been carelessly prepared but it has data that merit publication. It should be rewritten as a brief article in conformance with Mycologia guidelines, including deletion of the summary.

With few exceptions (figs. 5,6,7,8) the photographs are of unacceptable quality and in any case must be trimmed to appropriate size and mounted. No reference to the figures is made in the text although figs. 1-8 are noted in table 1. Figures 9 and 10 are not referred to either in text or tables. What is the purpose of fig. 9? A legend of figures is omitted.

In the tables, some binomials are without citations, others are incomplete. Since all indigenous names in the tables are of Sanama origin, the abbreviation "San." in the etymology list is superfluous.

The last sentence in paragraph 1, p.4 is at variance with the assertion made in the opening sentence of the same paragraph.

BC

OSWALDO FIDALGO²
GHILLEAN T. PRANCE³

SUMMARY

Fungi are an important source of protein in the diet of the Sanama Indians. Seventeen species of fungi are eaten, mostly species of the sub-families POLYPOROIDEAE and LENTINOIDEAE, and some of the order AGARICALES. A list of Indian names for some other non-edible fungi ^{is given} with some comments on the Indian system of nomenclature.

INTRODUCTION

Fidalgo (1965, 1968) made a basic survey of the ethnomycology of Brazilian Indian tribes. He reached the conclusion that fungi were not of any great importance in their culture. No further studies or findings were published until Prance (1972, 1973) reported that the Yanomanö Indians, unlike the majority of Indian tribes, used fungi extensively in their diet.

This fact was discovered by Prance in 1971, when he was visiting several Indian villages in the north west ^{on part} of the Territory of Roraima, Brazil. Initially, he found that the Waiká tribe in that area was using four species of fungi as food. The four species identified and recognized were: Favolus brasiliensis (Fr.) Fr., Favolus tessellatus Mont., Polyporus stipitarius Berk. & Curt. and Neoclitocybe bissiseda (Bres.) Sing. At that time the village of the Sanama group (of the Yanomanö tribe) was also visited by Prance, and he heard that these Indians recognized and ate a large number of fungi. In order to

1. The field work for this study was supported by the National Science Foundation, Grant GB-32575X and by the Fundação de Amparo à Pesquisa do Estado de São Paulo, Brazil, Grant 74/334
2. Instituto de Botânica, Caixa Postal 4005, São Paulo, Brazil.
3. B.A. Krukoff Curator, The New York Botanical Garden, Bronx, New York 10458.

Received for review 11-VII-'75

confirm this, and in order to make scientific collections and identifications, Fidalgo and Prance revisited the Sanama village from August 23-September 1, 1974. Specimens collected were distributed to the herbaria of the Instituto de Botânica, São Paulo (SP), The New York Botanical Garden (NY), and the Instituto Nacional de Pesquisas da Amazonia, (INPA).

The Yanomam tribe (commonly known as Waiká) is an Indian tribe which is widely distributed throughout the north western region of the Territory of Roraima and the Rio Negro area of Amazonas, Brazil, and also in Amazoniaⁿ Venezuela. The tribe has split into many small villages, and although^{they} are still part of the main Yanomam tribe, many village groups have their own name, and have developed their own variations in language, cultur^e and diet. This study was made among the Sanama group of Indians, of the the Yanomam tribe, who live in the village of Uauaris. Uauaris is located 250 miles from Boa Vista (Roraima), lat. 04° 06' N: long. 64° 25' W, at an altitude of 2500 feet (= 820m) in the Parima Mountains, beside the Uauaris River.

CULTIVATION AND PREPARATION OF FUNGI

In the area surrounding Uauaris fish and game are scarce as a result of over-hunting and over-fishing. The Sanama have resorted to using caterpillars, larvae and fungi to provide protein in their diet. Fungi are especially important because as well as occurring naturally in the area, they are being accidentally, or incidentally, cultivated by the Indians in their cassava (Manihot) plantations.

This "Incidental" or "Accidental" cultivation is the result of various contributing climatic and cultural factors. The Manihot plantations are prepared by the ancient, typical slash-and-burn methods. After the area has been burnt over, no clearing is done by the Indians, but the field remains full of stumps, fallen trunks, pieces of half-burnt and rotting wood. This debris, combined with the local weather conditions, forms an ideal habitat for spontaneous development of wood-rotting fungi. We walked extensively in the Manihot plantations which were at various stages of development, and we observed that when the Manihot was at an early stage of its growth the fungi were most

plentiful. This indicates that the charred, decomposing logs have their peak fungi production less than a year after being cut and burned. This peak, however, lasts for several months and occurs well before the time when the Manihot is harvested.

The Indians gather the fungi as needed for food, but do not appear to be making any conscious effort to cultivate them further for added food supply.

The edible species used in the Sanama's diet belong mainly to the subfamilies POLYPOROIDAE and LENTINOIDAE in the genera Favolus, Polyporus (sensu stricto), Lentinus and Pleurotus. In addition they also eat a few AGARICALES. The majority of the fungi are boiled in water before eating, but a few species are eaten raw or roasted in banana leaves (see table¹).

Three of the edible species were tasted by us. Uaicassamo (Favolus brasiliensis) is tough, ~~and~~ leathery and rather tasteless even after boiling for about 30 minutes. Sama-sama-iamo (Polyporus aquosus) is eaten raw and is much softer and bread-like, but does not have a distinctive taste. Hamimamo (Lentinus or Pleurotus) is hot, like pepper. This species is also boiled before it is eaten. Hamimamo is the only fungus which reflects the taste in its Indian name (hami = to burn like pepper). It is also the only fungus which the Indians taste to identify. The other fungi are more frequently named for the^{ir} resemblance to something familiar, e.g. deer, porcupine, sting ray etc; see the etymology given in the tables below.

FUNGI IN THE SANAMA LANGUAGE

The Sanama call the edible fungi "anamo" or simply "amo". They use also the word amo for the edible apical shoot of a species of MUSACEAE (Prance 20027) which resembles palm-heart in taste and appearance.

When the Sanama refer to an edible fungus the suffixes amo or amo-ghe are added to the root-word. Such root-words are applied to one or several species, which may have some characteristic in common. The fungi which are not eaten by the Sanama receive different names without the suffixes. The ^ffungi names_^ are ^{of fungi}indicated below showing, in some cases, their probable meaning in Sanama language, as well as some spelling variation, according to the different ways names are pronounced. (Sometimes it is very difficult to make a distinction between r, t and d or between b and p.).

FUNGI AND THE SANAMA'S TAXONOMIC INSTINCT

Some Brazilian Indian tribes show no sign of taxonomic instinct; they merely associate fungi with other things they know and the names they apply do not reveal any recognition of possible inter-connections. Most "Tupi" tribes use "urupê" as the basic word for fungi to which one or more words are added as the specific attribute. The Mundurucú tribe use a different system in which fungi are indicated by a suffix rô'p after one or more words. It seems that in this tribe the r and t is represented also ^{by} an intermediate sound. The Carajá Indians use a similar system with different suffixes which may be dorrô or dorrô-ni. Although the Sanama also associate fungi with objects and animals, they recognize the edible ones by using the suffixes amo or amo-qûê in a linguistic structure equivalent to that employed by Mundurucús and Carajás. It is also interesting to point out that the Sanamas, knowing that we were interested in fungi, brought us representatives of different taxonomic groups with distinct morphology. The name parolih, for instance, is used for some POLYPORACEAE, STEREACEAE, CLAVARIACEAE, PEZIZACEAE and XYLARIACEAE; this may be an indication that they recognize that these fungi are related.

WAIKÁ AND MAYONGONG FUNGUS NAMES

We learned two fungus names from a Waiká Indian who came from a different Yanomamö village (actually called Waiká): ADMASSA (= Lentinus crinitus, Panus rudis and Favolus sp.) and HO - PÊ (Polyporus tricholoma). We were unable to confirm such names with other Indians. It is interesting that Prance (1973) reported the name ADMASIK applied to a Favolus from the Yanomamö village at Surucucús Mountains.

The Mayongong Indians belong to the Carib group of Indians, while the Yanomamös are "Tupi" Indians. The Mayongongs although living side by side with the Sanamas at Uauaris, have a completely different language and way of living. They just have one word for fungi: CA-HÔ-CA. This name is mainly used to refer to the one species which they eat, a species which seems to be completely different from the ones eaten by the Sanama, but of which we were unable to get any specimen. The Mayongongs stressed the fact that ca-hô-ca was something to be eaten

only in the case of extreme hunger and food shortage, and they look down on the Sanama for eating so many fungi.

ACKNOWLEDGMENTS

We are extremely grateful to Dr. Rolf Singer for the identification of ~~some of~~ the AGARICALES. We thank the Unevangelized Fields Mission, northwest Amazon for permission to use their mission station; the Missionary Aviation Fellowship for air transport; and Pastor Donald Borgman for much information about the Sanama Indians. We are grateful to the Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil, for support for this study, ^which was made while the junior author was working for the Instituto.

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Table 1.

SANAMA'S EDIBLE FUNGI

SANAMA'S FUNGUS (Portuguese phonetics in brackets)	ETYMOLOGY	HOW EATEN B- boiled R- roasted C- raw	SCIENTIFIC NAMES	COLLECTOR'S NUMBERS (P. ... F. ... et al.)	HABITAT OBSERVATIONS MA MP= Manihot plantation F = Forest SF= Secondary forest
ADABAMO } ATAPA-AMO }			<u>Favolus brunneolus</u> Berk. & Curt.	21318	Fig.
COINI-AMO	San. <u>coini</u> =hairy+ <u>amo</u>	B	<u>Favolus subcaperatus</u> (Murr)	20082, 21329	MP
COROBAMO } CODOBAMO } COROBÔ-AMO } COTOPO-AMO }	San. <u>corob</u> =chest+ <u>amo</u>	B	<u>Lentinus crinitus</u> (Ld) ex Fr.	20024, 21315, 21355	MP
		B	<u>Polyporus tricholoma</u>	21313	MP Fig.
HAMIMAMO	San. <u>hami</u> =pepper, which burns like pepper+ <u>amo</u>	B	<u>Lentinus</u> <u>Pleurotus</u>	20085, 21326	MP
HAMIMAMO-AMWAI (HAMIMAMO-AMUAI)	San. <u>hami</u> =pepper which burns like pepper + <u>amo</u> + <u>wai</u> =small	B	<u>Lactocollybia aequatorialis</u> Singer	21414	MP Fig.
HASSAMO	San. <u>hassa</u> =deer + <u>amo</u>	B	<u>Polyporus</u> sp <u>Favolus striatulus</u> Ellis & Ev.	21332, 21447 21501	
HIWALAMO	San. <u>hiwala</u> =porcupine + <u>amo</u>	B	<u>Pleurotus</u> sp.	21330, 21510 (v. HASSAMO-HOLICHI)	
I-NISHI-AMO	San. <u>nichi</u> =small+ <u>amo</u>	B	<u>Pholiota bicolor</u> (Speg.) Singer	21322	SF Fig.

AI-KAI-AMO		B,C	<u>Lentinus glabratus</u> Mont. in R. de la Sagra	20084, 21328	
PIDA-PIDA-LHAMO			<u>Gymnopilus hispidellus</u> Murr.	21550	MP
(uncertain whether eaten; some, Indians said yes, others no)					
PLO-PLO-LEMO-AMO	San. <u>plo-plo</u> =	B	<u>Pleurotus concavus</u> (Berk.) Sing	20088, 21331	
PLO-PLO-LE-AMO	=toad				
PO-PO-LEMO-AMO	(onomatopeia)+ <u>amo</u>				
PO-PO-LE-AMO					
SAMA-SAMA-IAMO	San. <u>sama-sama</u> =sting ray+ <u>amo</u>	C	<u>Polyporus aquosus</u>	21316	F
SHI-KIMÓ-AMO	San. <u>shi-kimá</u> =a small parrot+ <u>amo</u>	B	<u>Coriolus zonatus</u>	21398, 21415	MP
(chi-quimó-amo)					
SHI-KIMÓ-AMO-QUE	San. <u>shi-kimá</u> =a small parrot+ <u>amo-qtê</u>	B	<u>Hydnopolyporus palmatus</u>	20083, 21397, 21576	MP Fig.5
(chi-quimó-amo-qtê)			(Hook. in Kunth.) O. Fid.		
SHI-KEMA-AMO-QUÊ					
(chi-quemá-amo-qtê)					
SHIO-KONI-AMO	San. <u>shio</u> =anus + <u>coini</u> -hairy + <u>amo</u>	B B B	<u>Panus rudis</u> Fr. <u>Lentinus crinitus</u> (L.) ex Fr. <u>Lentinus velutinus</u> Fr.	20016, 21327, 21333 20015, 21334 20016, 21392	MP MP Fig.6 MP Fig.7
WAIKASSAMO	San. <u>waiká</u> =waiká+ <u>amo</u>	B,R	<u>Favolus brasiliensis</u> (Fr.) Fr.	20014, 21314, 21317	MP, F Fig.8
(waicassamo)					

HASSAMO-HOLISHI (hassamo-holichi)	San. <u>hassa</u> =deer+ <u>amo</u> edible fungus+ <u>holichi</u> lie, false.	<u>Pleurotus</u> sp.	21510
I-NISHI-MAI-DAH (i-nichi-mai-dah)	San. <u>nishi</u> =smell+ <u>ma</u> =no	CLAVARIACEAE	21325
KOMI-KOMI-CA (come-come-ca)	San. <u>komi-komi</u> =full	<u>Xylaria</u> sp. (the same as <u>parolih-dê-ossuai</u>)	21435
PAROLIH-DÊ PATOLIH-DE	San. <u>patolih</u> = covered + <u>dê</u> =which (is)	<u>Amauroderma</u> sp. (species with thin pilei), <u>Daedalea elegans</u> <u>Gloeophyllum striatum</u> , <u>Hymenochaete damaecornis</u>	21323 21324, 21433 21363, 21479, 21570
		PEZIZACEAE	21367
		<u>Pycnoporus sanguineus</u>	21320
		<u>Stereum australe</u> , etc.	21319
PAROLIH-DÊ-OSSWAI PATOLIH-DÊ-OSSWAI	San. <u>parolih</u> =covered+ <u>dê</u> =which(is)+ <u>os</u> =tender, young+ <u>wai</u> =small, yes	<u>Xylaria</u> sp. (the same as <u>come-come-ca</u>)	21435
PAROLIH-DIGOSTÊ	San. <u>parolih</u> =covered+ <u>di</u> = always	CLAVARIACEAE	21393
PELI-POLI-ÁH	San. <u>pele-poli</u> =moon; in the shape of half-moon	<u>Fomes marmoratus</u> , <u>Amauroderma</u> sp. (species with thick woody pilei)	21389; 21406

WAINI-SE-RAH

San.wai=small, yes+ni=

Daedalea elegans

21324, 21433

(uaini-se-rah)

bad, ugly

WONSHELÁ-AMO-QUÊ

San.wonshelá=no good +

Psilocybe? plutonia(Berk. & Curt.) 21399

(uonchelá-amo-qtê)

amo-qtê = edible fungus

Psilocybe sp. Sacc.

WONSHELÁ -DÊ

San.wonshelá=no good+dê

Auricularia sp.

21383, 21404,

(uonchelá-dê)

which (is)

Tremella sp. and

21405, 21434,

other jelly fungi

21517

WONSHELÁ-DÊ-AMO-ANI

San.wonshelá=no good+dê

Gymnopilus depressus Murr.

21470¹

(uonchelá-dê-amo-ani)

=which (is) + amo=edible

fungus +ani=bad, ugly

1. According to Dr. Rolf Singer (pers. com.) this species is eaten in Peru and is called callampas del arbol. The Sanama, however, do not eat this species.

Dr. B. Lowy Edit. Board
Mycological Herbarium
Louisiana State Univ.
Baton Rouge, LA 70803

MYCOLOGIA

Office of the Editor
Department of Botany
University of Massachusetts
Amherst, Massachusetts 01002

20 September 1975

Dear Bernie,

Would you be willing to review the enclosed manuscript for **MYCOLOGIA**?

Basidiocarp formation by Laccaria laccata in agar culture
by E.E. Davis & S.C. Jong

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal.) Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered:

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Any other comments or criticisms will be appreciated.

Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer.

Thank you for your assistance.

Sincerely,

Margaret

M.E. Barr Bigelow
Editor

BASIDIOCARP FORMATION BY *LACCARIA LACCATA* IN AGAR CULTURE

E. E. DAVIS and S. C. JONG

Mycology Department, American Type Culture Collection
12301 Parklawn Drive, Rockville, Maryland 20852

Many Basidiomycetes have been known to be inhabitants of both fields and woodland soils, but the direct isolation from soils of these fungi that fruit on common mycological media has been infrequently reported. Goos (1960) reported the formation of fruit-bodies in culture by four Basidiomycetes that were isolated from soil. In exploring the microflora of Maryland soils, we obtained a single isolate which produces well-formed fertile basidiocarps in agar culture. It was identified as *Laccaria laccata* (Scop. ex. Fr.) Berk. & Broome according to Singer (1967) and Singer & Moser (1965). Since the production of fruit-bodies on agar media is a significant contribution toward study of the nutritional requirements, morphogenesis and genetics of this fungus, it is reported herein.

A garden soil sample was collected in College Park, Maryland, in August 1972. The sample was taken to the laboratory and heat treated for 30 minutes at 65 C. A dilution plate series was set up using lactose-peptone agar and the plates were incubated at 24 C. After several weeks a stroma-like structure was formed in one plate and it was transferred to a rabbit food agar plate. Mature basidiocarps were later observed on inoculation blocks transferred from the rabbit food agar plate to the same medium in flasks and incubated in diurnal alternation darkness and light at room temperature.

Davis and Jong on *Laccaria laccata*

Margaret

No special comments are needed on this brief article; certainly nothing to forward to the authors.

The few corrections in the ms include striking "vegetative" from a sentence on p.4, par.2. Although the word offends only those who may have phylogenetic sensitivities, I thought it has long been on the "verboten" list for fungi. Or is this just an idiosyncrasy of mine?

Bennis

MYCOLOGIA

OFFICIAL JOURNAL OF THE

MYCOLOGICAL SOCIETY OF AMERICA

PUBLISHED BY

THE NEW YORK BOTANICAL GARDEN

RICHARD K. BENJAMIN
Editor-in-Chief
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

CLARK T. ROGERSON
Managing Editor
The New York Botanical Garden
Bronx, New York 10458

14 Apr., 1975

Dear Bernie:

Your paper on additional neotropical Tremellales has been reviewed by two of your peers. Neither signed his review, but both are friends of yours. Both have somewhat similar ideas about how you could reduce the length of the paper, which, of course, would be desirable in view of publication costs.

I leave it up to you to decide which criticisms to accept and which to reject.

Best regards,

Sincerely,

Dick

R.K. Benjamin

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE • LOUISIANA • 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

21-IV-1975

Dear Dick,

I have adopted the principal helpful suggestions of the reviewers and the rewritten paper together with a copy of the one previously submitted are enclosed.

The collection entries have been reduced by 250 percent, the maximum I believe possible concomitant with retaining meaningful data. A further saving in space could be achieved by setting these data in smaller type, as is done in "Trans. Brit. Mycol. Soc."

Cordially,

Bernie

24 Apr., 1975

Dear Bernie:

The revision of your paper on neotropical Tremellales has been received. It probably will make the Sept.-Oct. issue; if not I'll let you know.

Guess Salomon Bartnicki-Garcia is not too happy with my choice for Ed. Guess I have been a bit too arbitrary and independent in selecting for the Ed. Bd.--that's how I got you, Ken Wells, T. Johnson, and S. B.-G. Seems to have worked out. I do think that Margaret, with Howard and Emory Simmons standing by to give her a boost if needed, could do the job.

Regards,

Sincerely,

Dick

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

25-IV-1975

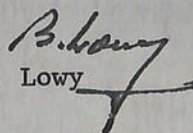
Dr. Salomon Bartnicki-Garcia
Department of Plant Pathology
University of California
Riverside, California 92502

Dear Dr. Bartnicki-Garcia:

Thank you for the copy of your letter addressed to Dick Benjamin concerning the selection of a new Editor-in-Chief for *Mycologia*. The point you raise about the method of selection certainly has some validity. The job is not only vitally important to the survival of the journal and the maintenance of its high standards but it is by far the most exacting, difficult and burdensome position that a member of our Society can accept - or have foisted upon him. So the existence of a selection committee would not seem inappropriate.

My feeling in the matter is that the editor, who is intimately acquainted with the kinds of problems his successor will face, is in the best position to judge the qualifications of a candidate. A committee composed perhaps of some members (past and present) of the editorial board might well serve in an advisory capacity, actively assist in the search and scrutinize and evaluate the qualifications of candidates, but under normal circumstances I believe that the editor, having solicited the best available advise, should bear the chief responsibility for making the final decision.* In any case, I do not think that Dick should at this late date be required to appoint a search committee. Since he has successfully located a qualified professional faultfinder (which every editor must be) in Margaret Bigelow, I support his decision, an astute one incidentally, in view of the fact that the proposed editor's husband may presumably serve her on occasion at least as a knowledgeable amanuensis.

Sincerely yours,


B. Lowy

cc: R.K. Benjamin

* — with the advice and consent of the Board



COLLEGE OF NATURAL AND
AGRICULTURAL SCIENCES
CITRUS RESEARCH CENTER AND
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF PLANT PATHOLOGY

RIVERSIDE, CALIFORNIA 92502

April 22, 1975

Dr. Richard K. Benjamin
Editor-in-Chief
Mycologia
Rancho Santa Ana Botanic Garden
Claremont, California 91711

Dear Dick:

I was surprised to receive your letter of April 16, 1975, asking my opinion about your choice for editor of Mycologia. I was not surprised at the name; in fact, I know too little about her personally to give you an opinion on her qualifications for this post. I am surprised that no search committee was created to find a new editor and that we are asked for an opinion so late in the process.

I do not know how the present selection process originated (tradition?) but I feel that the Society should not burden the Editor of Mycologia with the enormous task of finding his/her own successor. (Good heavens, you have already sacrificed several years of your life making sure Mycologia stays healthy.) The selection ought to be made by a search committee with representatives from major subdisciplines, and at some point members of the executive council or the editorial board should be asked to vote on a panel of candidates.

I am sure the task of finding a replacement has been quite demanding on your time and effort and perhaps you have come up with the right person; yet, I am afraid I cannot endorse your choice simply because I disagree with the selection process. So much, that I am taking the liberty of sending copies of this letter to other members of the editorial board as well as the current President and the President-Elect in the hope that something is done to rectify the selection process for Editor-in-Chief, and that this is done soon enough to apply to your replacement.

Since I am making this letter "public," to avoid any misunderstandings, I wish to stress that there is no criticism of you or Margaret Bigelow, implicit or explicit, in this letter. On the contrary, I have been quite pleased to serve as member of the editorial board under your leadership

Dr. Richard K. Benjamin

-2-

April 22, 1975

and I am happy to say that I fully appreciate the excellent work you have done for the Journal.

Sincerely,

Salomon Bartnicki-Garcia
Professor
Plant Pathology

SBG:ma

cc: Stanley J. Hughes
Melvin S. Fuller
Terry W. Johnson, Jr.
Thomas Sproston
Clark T. Rogerson
Henry C. Aldrich
✓ Bernard Lowy
Kenneth Wells

MYCOLOGIA

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1500 North College Avenue
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CLARK T. ROGERSON

Managing Editor

The New York Botanical Garden
Bronx, New York 10458

16 April, 1975

Dr. B. Lowy
Dept. of Botany
Louisiana State Univ.
Baton Rouge, La. 70830

Dear Bernie:

As you know, my term as Editor-in-Chief of Mycologia ends with completion of the 1975 volume. Selection of my successor should be confirmed as soon as possible so that manuscripts not needed for the current volume can be forwarded to the new editor and work on the first issue of the 1976 volume can begin without too much delay. The Jan.-Feb., 1976, issue should be in the hands of the printer no later than Sept. 1.

I began my search for a new editor last summer. Knowing the demands of the job, I sought someone who would not only be willing to take on the task but who would be qualified by background to do the work and also be in a position to give up a goodly part of their time during the next five years to an effort that often is nothing but sheer drudgery.

My choice is Margaret Bigelow, and she has indicated that she is willing to accept the editorship if appointed.

I should like to have your opinion, pro or con, on this appointment as soon as possible, certainly within the next week or so.

Best regards,

Sincerely,

Dick

R. K. Benjamin

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE • LOUISIANA • 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

21-IV-1975

Dear Dick,

You are in the best position to judge
who should be your successor as Editor-
in-Chief and if you think that Margaret
Bigelow can and will do the job, I'll
gladly second the motion.

Whoever assumes this responsibility
must have a broad streak of altruism — and
anyone who completes the term with distinction,
as you have, deserves not only the Society's
gratitude, but a medal!

With best wishes, as ever,

Bernie Lowry

B. Lowy
Ed. Board

Received = 27-IV-1975
Returned: 1-IV-75

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 24 Mar., 1975
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?

A new homobasidiomycete with anomalous basidia.

by D. E. Cox

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered.

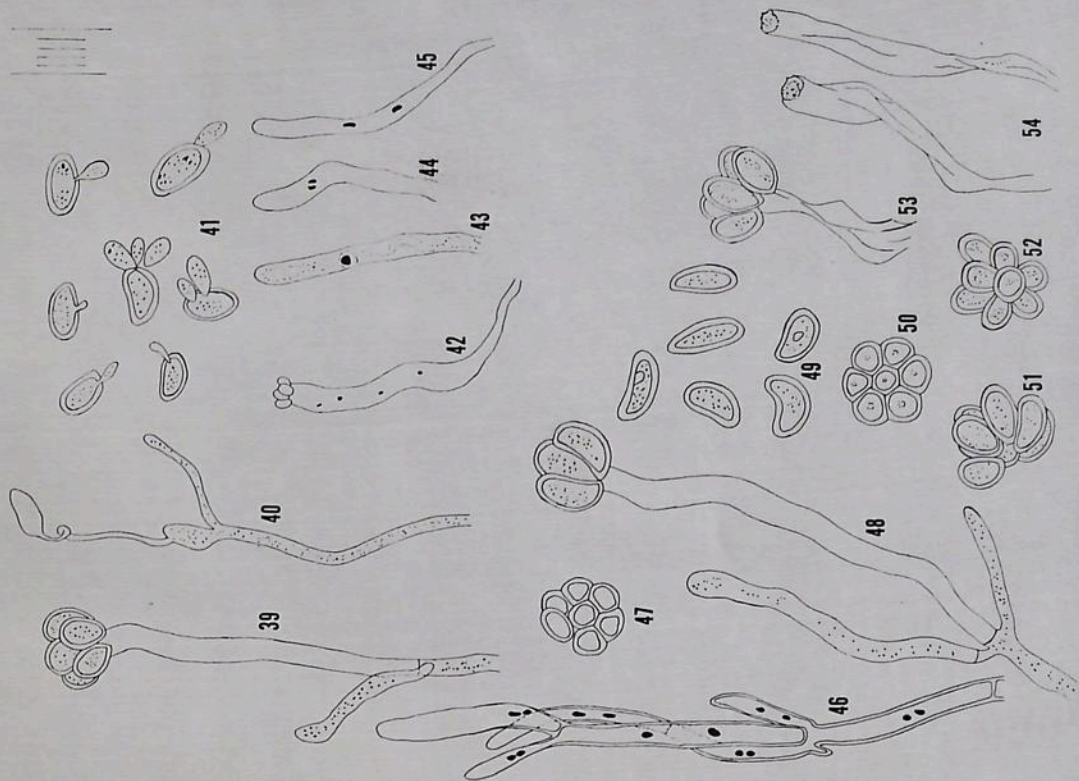
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6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated. Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer. Many thanks.

Sincerely,

Dick
R. K. Benjamin
Editor





copy 2

A NEW HOMOBASIDIOMYCETE WITH

ANOMALOUS BASIDIA¹

Darrell E. Cox

Urbana, Illinois 61801

SUMMARY

The new homobasidiomycete Chionosphaera apobasidialis is named and described. Its basidiocarps are tiny white capitate synnemata, occurring on the bark of dead limbs of Quercus macrocarpa Michx. and Q. stellata Wang.; it has also been collected on Carpinus caroliniana Walt. It bears a superficial resemblance to some synnematous imperfects and to some basidiomycetes.

The fungus completes its life cycle in culture on a variety of media. Its basidiospores germinate by budding, and it is heterothallic, producing mycelium when opposite mating strains are mixed, but single-spore isolates continue to be maintained as budding colonies. The production of conjugation tubes seems to be initiated by a diffusible substance produced by the opposite strain. Fruiting bodies are produced in culture only when Chionosphaera is grown in association with a Cladosporium

¹Portion of a dissertation submitted to the Graduate College of the University of Illinois at Urbana-Champaign in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

or another appropriate hyphomycete. The nature of this association is not known at this time, but it is probable either that the hyphomycete is producing something for which the basidiomycete is deficient or that the basidiomycete is parasitizing the hyphomycete. A mixture of both strains of this fungus will grow in pure culture, but without the hyphomycete it produces only a meager resupinate hymenium at the surface of the agar. Synergism, mycoparasitism, and dimorphism are reviewed. It is noted that dimorphism is a rare occurrence in the Homobasidiomycetidae.

The basidia of Chionosphaera are apobasidia, common among gasteromycetes but unique among hymenomycetes. It is most closely related to Filobasidium floriforme Olive. The Filobasidiaceae is emended to allow the inclusion of Chionosphaera.

INTRODUCTION

On November 27, 1970, a short section of a limb of bur oak, Quercus macrocarpa Michx., collected in Effingham County in southern Illinois, was placed in a moist chamber; after a few days tiny white fungus fruiting bodies emerged from cracks in the bark of the dead areas. The fungus was subsequently found to be unknown and is here described as Chionosphaera apobasidialis. Its fruiting bodies are capitate synnemata usually having subglobose to abruptly bulbous heads covered with a hymenium (Fig. 1, 2, 3). They are solitary to gregarious and

I question the propriety of describing the basidiocarp of this fungus as a true synnema. If the fructification remained asexual and composed essentially of uninucleate hyphae the term would be applicable, but it produces basidia, so it can only be synnema-like. The basidiocarps are not "...capitate synnemata" (p. 1, l.2-3) but only resemble them, as the author clearly states in the last sentence of his introductory paragraph and again in the first sentence on p. 33. On p. 2, third line from the bottom, the fruiting bodies are also described as "...capitate synnemata ...". The Latin diagnosis (p. 40) correctly recognizes the resemblance of the basidiocarp to a synnema ("Basidiocarpi instar synnematum capitatorum") but in English translation, the critical word "instar" is overlooked and the fructification becomes "...a capitate glistening white synnema" (p. 40, par. 2). This ambiguity should be corrected.

If PDA was the only agar medium used in the culture work, a statement to this effect should be made early in the paper. It might, for example, conveniently be included in a brief sentence at the end of par. 1, p.6. Alternatively, it could be inserted into one of the two paragraphs under the heading "Culture Media" on p. 19. These two paragraphs, by the way, seem to me to be a trifle displaced, but I would not argue the point too strongly. They might more logically, perhaps, precede the section on "Reproduction By Budding" (p.6), since other paragraphs such as those on "Mating Experiments" (p.13), "Fusion Of Budding Cells" (p.16) and "Evidence For a Sexual Hormone" (p.17) all deal with cultural studies.

On p.34, par.2, Fig. 31 and Fig. 29 might at first glance be construed as referring to illustrations in Cox's paper. To avoid possible ambiguity, emend to read: (Möller's Fig.-) as the author has done in reference to Emmon's figure on p.15.

Footnotes 2(p.14) and 3(p.43) could easily be included within the body of the text.

I recommend publication of this paper with the least possible delay.

B. Lowy

Comments on "A new homobasidiomycete....." by Darrell E. Cox

I question the propriety of describing the basidiocarp of this fungus as a true synnema. If the fructification remained asexual and composed essentially of uninucleate hyphae the term would be applicable, but it produces basidia, so it can only be synnema-like. The basidiocarps are not "...capitate synnemata" (p. 1, l. 2-3) but only resemble them, as the author clearly states in the last sentence of his introductory paragraph and again in the first sentence on p. 33. On p. 2, third line from the bottom, the fruiting bodies are also described as "...capitate synnemata ...". The Latin diagnosis (p. 40) correctly recognizes the resemblance of the basidiocarp to a synnema ("Basidiocarpi instar synnematum capitatorum") but in English translation, the critical word "instar" is overlooked and the fructification becomes "...a capitate glistening white synnema" (p. 40, par. 2). This ambiguity should be corrected.

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B. Lowy

from the Ustilaginales and placed in the Polyporales.

Filobasidiaceae Olive, Jour. Elish. Mitch. Soc. 84:261-266,
1968, emend. Cox.

Fructifications resupinate hymenia or gymnocarpous basidiocarps; basidia simple; basidiospores sessile or borne on minute pegs, not forcibly discharged; mycelium with or without clamp connections; thick-walled probasidia lacking.

Chionosphaera gen. nov.

Basidiocarpi exigui, stipitati, pileati, parte superiore expansa, hymenio basidiali induta; basidia clavata, ex apice sporas in fulcris minutis suffultas producentia; sporae nec apiculatae nec abjectae, germinatione blastosporas producentes.

Fruiting body small, stalked with an enlarged upper portion covered with a hymenium of basidia; basidia clavate, producing spores terminally on minute pegs; spores non-apiculate, not forcibly discharged, germinating by budding; typically on dead corticated branches.

Type: C. apobasidialis

Etymology: Greek chion, -os=snow, and
sphaira=ball

19 Feb., 1975

Dear Bernie:

Your paper on additional neotropical Tremellales arrived this morning and is off for review.

Best regards,

Sincerely,

Dick

R. K. Benjamin

B. Lowy
Ed. Bd.

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 16 Nov., 1974
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?
The species of Bourdotia and Basidiodendron (Tremellaceae) of
the U.S.S.R.

by K. Wells and A. Raitviir

If so, please prepare two copies of your criticisms, one an un-
signed carbon that can be sent to the author (reviewers who prefer not
to remain anonymous may sign both copies of their appraisal). Minor
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three weeks, or if you prefer not to review it at all, please
return the manuscript without delay so that it can be sent to
another reviewer. Many thanks.

Sincerely,

Dick

R. K. Benjamin
Editor

I would like to comment on two points in this excellent, handsomely illustrated paper.

The authors object to what they consider to be inaccurate common usage of the term "apiculus" but I have some misgivings about their proposed reinterpretation. Their reference (pp. 19-20) to the "apiculus or hilar appendix" (the latter is generally referred to as the 'hilar appendage') as "the peg-like base of the basidiospore" is I believe in need of further refinement. In view of the distinctions the authors wish to make, it would seem more precise to refer to the apiculus as a peg-like projection from the base of the basidiospore and to define the apex of that projection as the "hilar appendix proper" (p. 20). This distinction might easily be made in spores having relatively large apiculi but would not some difficulty be encountered in spores having small and inconspicuous ones? In such spores the "rounded tip of the projection" i.e. the "hilar appendix proper" could scarcely be distinguished from the "main portion of the projection" which is referred to as "merely the base of the basidiospore" (p. 20). Also, in the statement (p. 20) that "since the sterigma is attached between the globose body of the spore and the tip of the projection....." since there are spores that do not have a globose body, deleting the adjective would be more exact. The suggestions may be quite valid but some clarification, perhaps using an appropriate sketch or two, might be in order.

Concerning basidial terminology, it is evident to those who have followed the debate over the last decade or so, that there is still considerable confusion in the use of such terms as "epibasidium," "sterigma," "spicule" and "metabasidium," each of them defined according to one's favorite interpretation. Since the authors clearly state that they are following Martin's 1957 terminology, those familiar with it should have no problem. But the authors deviate, if only parenthetically, (2, p. 20) from Martin's terminology by using Donk's term "protosterigmata," which is the equivalent of Martin's "epibasidium". The last phrase in the same paragraph seems ambiguous. It reads: "however, some basidia do not develop apparent epibasidia." This does not seem very clear. Does it mean that the epibasidia are formed but are inconspicuous or that apparently, epibasidia do not develop? The difficulty may be inherent in the terminology itself. For example, the expression "epibasidia not clearly defined" (p. 22, line 8 from bottom) underscores the same problem. Talbot may have the best solution yet proposed in *Trans. Br. mycol. Soc.* 61(3): 497-512. 1973.

B. Lowy

27-x1-'74

Herms 25-XI-1974

THE SPECIES OF BOURDOTIA AND BASIDIODENDRON
(TREMELLACEAE) OF THE U.S.S.R.

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Running Head: Wells and Raitviir: Bourdotia and Basidiodendron

SUMMARY

The species of Bourdotia and Basidiodendron known from the U.S.S.R. are described and illustrated. The genus Bourdotia (Bres.) Bres. et Torrend is emended to include B. galzinii and an unnamed species. B. galzinii is shown to have petiolate basidia and to be cospecific with Sebacina petiolata Rogers. B. galzinii, which seems to be a common species in the Transcaucasia of the U.S.S.R., is widely distributed in Western Europe, but the most northern known American collection site is New Orleans, Louisiana. Sebacina cremea McNabb is transferred to Basidiodendron, and the second known collection is identified from the Stanovoy Mountains. Basidiodendron cinereum, B. caesiocinereum, and B. eyrei are shown to be widely distributed in the U.S.S.R. and to occur on both coniferous and angiosperm wood. The concept of B. cinereum is redefined to exclude Sebacina stratosa (Viégas) Olive and Basidiodendron rimosum (Jacks. et Martin) Luck-Allen. The available studies indicate that Basidiodendron cinereum and B. eyrei are probably cosmopolitan, whereas B. caesiocinereum is seemingly restricted to the temperate zones of the northern hemisphere.

During the past several years we have been collaborating on studies of specimens of the resupinate species of the Tremellaceae collected in the U.S.S.R. The objectives of these studies have been to describe the resupinate Tremellaceae in Eurasia, to determine their distribution in this region, and to attempt to interrelate European and American species concepts in this group.

The technique of study has been described (Wells, 1969). The terminology of the basidium as defined by Martin (1957) is used here. The names of collection sites of the specimens examined follow, as closely as possible, those proposed by the U.S. Board on Geographic Names (Bloom, 1970). All drawings were made with the aid of a Zeiss Drawing Apparatus. The configurations of some flexible structures were not always recorded as they existed within the intact basidiocarps.

Bourdotia (Bres.) Bres et Torrend

in Torrend, *Brotéria sér. bot.* 11: 88. 1913.

Sebacina subgen. Bourdotia Bres., *Ann. Mycol.* 6: 46. 1908.

Basidiocarps resupinate, waxy, gelatinous, margins adnate, indeterminate, drying to an invisible film or a distinct vernicose crust; in section consisting of a narrow, basal layer of prostrate hyphae giving rise to an ascending layer of fertile hyphae, gloeocystidia, and dikaryophyses, clamp connections

P.119 - The peg-like base of the basidiospore has often been described as an apiculus or hilar appendix (Boudot & Boalzig, 1928, etc)

1928; Rogers, 1933; McGuire, 1941; Martin, 1952; Christiansen, 1959; Wells, 1960; Luck-Allen, 1963). Since the sterigma is attached between the globose body of the spore and the tip of the projection, we believe that only the rounded tip of the projection is the hilar appendix proper and that the main portion of the projection is merely the base of the basidiospore. When the basidiospore wall becomes thickened, the wall of the peg-like projection seems to remain thin walled (Fig. 4, J, K). Also, this projection is not always symmetrically attached as reported by Wells (1960) but is sometimes slightly asymmetrical (Fig. 4, J, K). Whether the base appears symmetrical or asymmetrical may be due to the angle of observation.

Although some authors (e.g., Oberwinkler, 1963; Wells, 1960) have reported that epibasidia (=protosterigmata) are not formed in this species, we agree with Rogers (1933), McGuire (1941), and Martin (1952) that epibasidia are differentiated on some basidia (Fig. 4, D, E); however, some basidia do not develop apparent epibasidia (Fig. 4, C).

B. caesiocinereum, which seems to be restricted to the temperate regions of the northern hemisphere is a relatively common and widely distributed species in the U.S.S.R. It occurs with approximately equal frequency on angiosperm and gymnosperm substrata, which are often in an advanced stage of decay. Eriksson (1958) reported that Sebacina caesiocinerea was the "most frequent" species of the genus Sebacina in Sweden.

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Legends to Figures

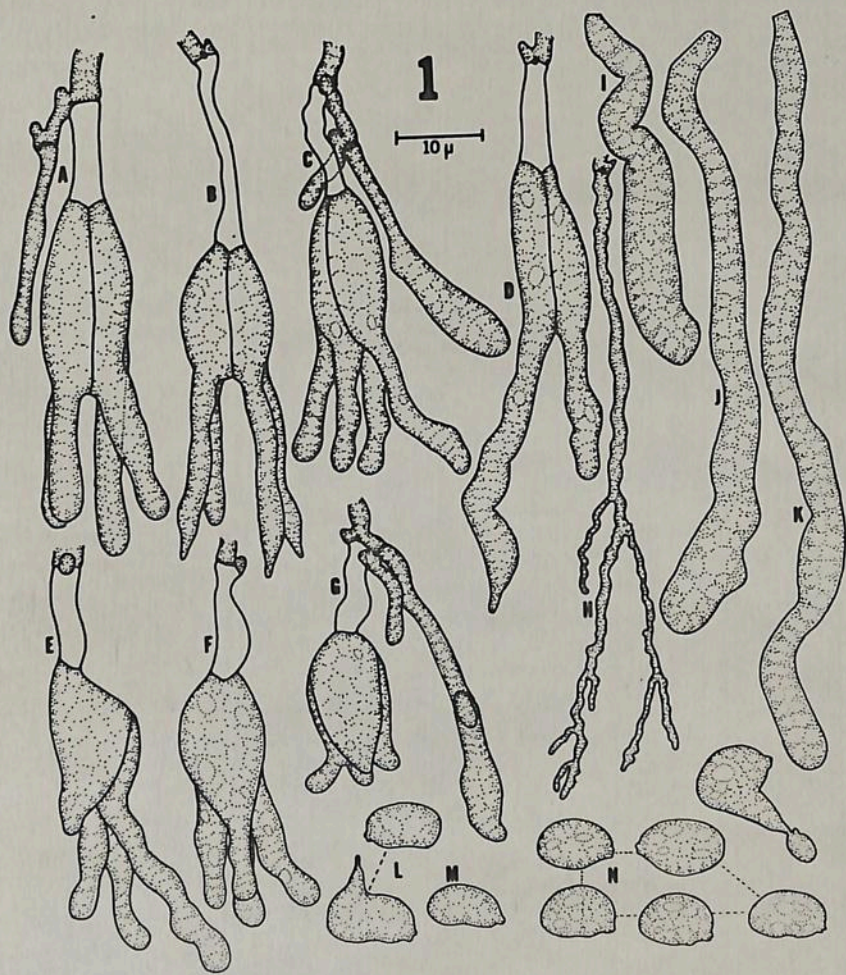
Fig. 1. Bourdotia galzinii. A,B. Basidia (Galzin 3832). C-G. Basidia (TAA 43011). H. Dikaryophyses (TAA 43011). I-K. Gloeocystidia (I,K from Galzin 3759; J from Galzin 3832). L. Basidiospores (Galzin 3832). M. Basidiospore (Galzin 3759). N. Basidiospores, one germinating by repetition (TAA 43011).

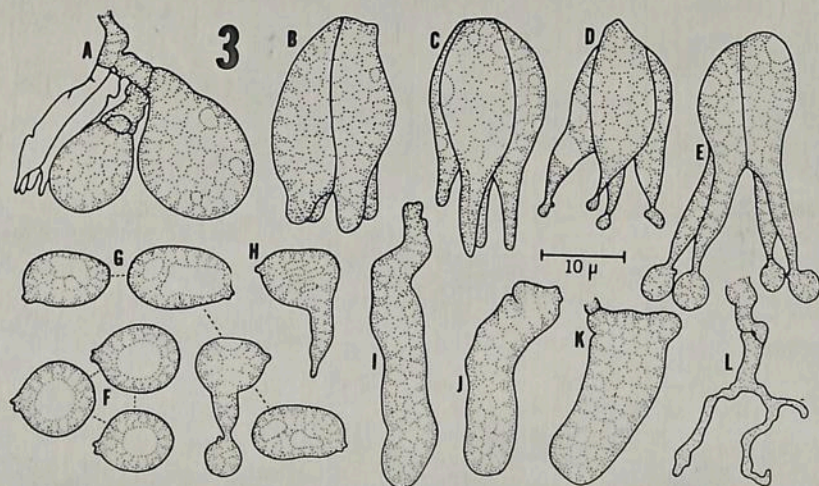
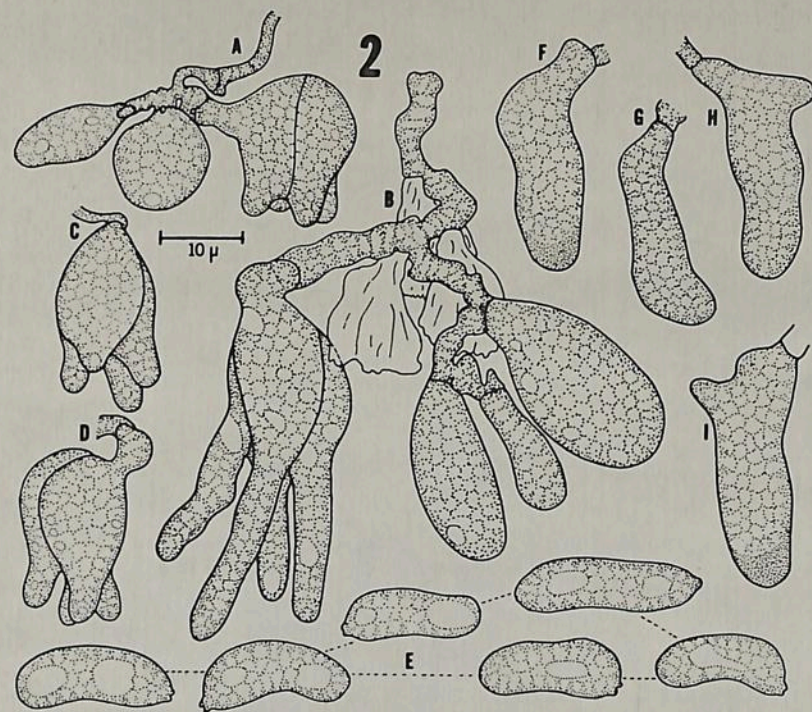
Fig. 2. Basidioidendron cremeum. A. B. Segments of fertile hyphae. C,D. Basidia. E. Basidiospores. F-I. Gloeocystidia. All drawings from TAA 7148.

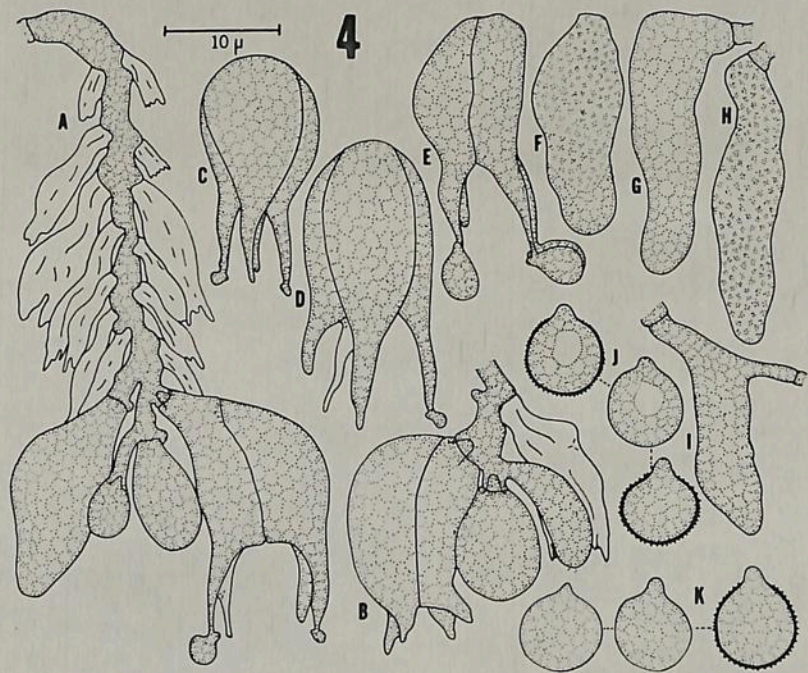
Fig. 3. Basidioidendron cinereum. A. Segment of fertile hypha (TAA 12100). B-E. Basidia (B,C,E from TAA 12100; D from TAA 19559). F. Basidiospores (TAA 5162). G. Basidiospores, one germinating by repetition (TAA 8837). H. Basidiospore germinating by repetition (TAA 12100). I-K. Gloeocystidia (TAA 12100). L. Dikaryophysis (TAA 12100).

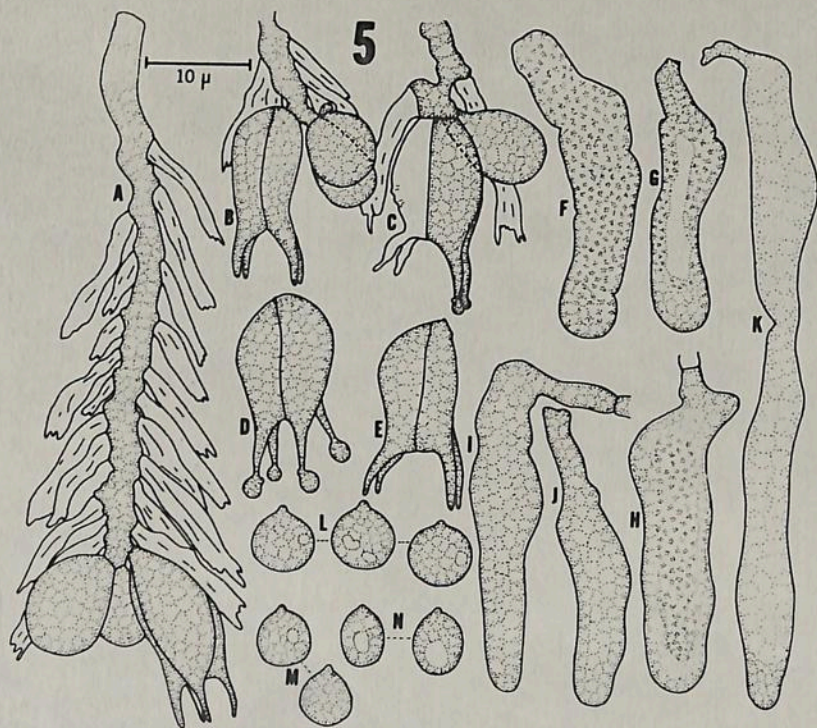
Fig. 4. Basidioidendron caesiocinereum. A. Fertile hypha (TAA 17122). B. Fertile hypha (TAA 12434). C-E. Basidia (TAA 17122). F-I. Gloeocystidia (TAA 17122). J. Basidiospores (TAA 17122). K. Basidiospores (TAA 12434).

Fig. 5. Basidioidendron eyrei. A. Fertile hypha (TAA 15865). B. Fertile hypha (TAA 32047). C. Fertile hypha (TAA 66005). D. Basidium (TAA 66005). E. Basidium (TAA 15865). F. Gloeocystidium (TAA 32047). G-K. Gloeocystidia (G,H from TAA 15023; I,J from TAA 66005; K from TAA 15865). L-N. Basidiospores (L from TAA 66005; M from TAA 15865; N from TAA 32047).









21-V-1974

Comment on "Mushrooms and the Yoruba people of Nigeria" by B. A. Oso.

This version has been substantially modified and I recommend its acceptance for publication. I question the need for the last paragraph on p. 14, since it is essentially a repetition of the statement made in the last sentence on p.1, paragraph 1.

B. Lowy

MUSHROOMS AND THE YORUBA PEOPLE

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20-V-1979.

OF NIGERIA

BY

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The Yoruba, about 11 million people, occupy both the Western and the Lagos States as well as parts of the Kwara State of Nigeria (Fig. 1). They speak the Yoruba language which is very rich in expressions and terminologies reflecting their culture. To my knowledge, nothing has previously been published on how the Yoruba relate to, and use mushrooms in their daily lives. This is intended as the first in a series on mushrooms and the various groups of Nigerian people.

The Yoruba have recognized mushrooms for many years, inasmuch as such fungi have always played an important role in their everyday life. The present research was carried out in the Western State with a Yoruba-speaking population of about 9.5 million by touring towns and villages and interviewing people and examining specimens with them to determine their knowledge of fungi. Women who market vegetables and mushrooms and elderly people were most helpful in supplying information.

Reported below are data obtained from different parts of the State. While some of this information is local, much of it is common to all areas of the Western State. The people have Yoruba names for the different species of mushroom, which usually are descriptive and give an indication either of the habitat, morphology, and texture, or of the growth habit of the fungi. Mushrooms are hunted during the rainy season and the edible forms collected both for personal consumption as well as for sale. It was, therefore, not surprising to learn that there are local sayings and beliefs connected with fungi. These beliefs sometimes play a role in determining whether certain mushrooms are edible and may also help in determining which fungi may be used for medicinal purposes by the Yoruba native doctors. d/

This article, among other things, lists some of the Yoruba names for the different fungi, translates these names into English, briefly describes activities of the people during fungus forays, and gives their beliefs about fungi. ^{The} ~~Where possible,~~ botanical names of the ^{also} fungi are given. L/

In certain parts of the State the Yoruba name for a fungus or mushroom is "OLU" (Yor. OLU = anything that is more prominent or which rises higher than any other thing in its environment). The Yoruba people give this name to the mushroom because mushrooms are easily distinguished from all other plants in their surrounding. In other parts of the State the mushroom is known as "OSUN" (Yor. SUN = sprout). The mushroom are so named because of the more-or-less sudden and rapid manner in which they make their appearance in the field. d/d/

THE EDIBLE MUSHROOMS

The edible mushrooms have been placed into five categories by me according to the derivation of their names, viz. those named according to the taste, morphology, growth habit, texture, and the habitat of the mushroom.

(a) Mushrooms named according to tastes:

OGIRIAGBE (Yor. OGIRI = a spice made locally from melon and used for seasoning soup + AGBE = farmer, i.e., the farmer's spice). This is the Yoruba name for both Volvariella volvacea (Bull. ex Fr.) Singer and Volvariella esculenta (Mass.) Fries. These mushrooms are commonly used by farmers for seasoning soup on the farm. Sung

TAKELE (Yor. TA = distinguish + OKELE = morsel, i.e., a mushroom which makes a delicious meal). This is Termitomyces clypeatus Heim. It grows on soil in contact with termite nests. It is also known as OLU-ESUNSUN (Yor. OLU = mushroom + ESUNSUN = winged termite). It makes its appearance at the beginning of the rainy season, i.e., around April, and because of this it is also called OLU-ABOJOSE (Yor. OLU = mushroom + BA = with + OJO = rain + SE = begin). This is a period before the ripening of the early maize and when the yams (Dioscorea spp.) of the previous year are rare and very expensive. The people have a local saying connecting this scarcity of yams with the appearance of the mushrooms:

"Omode ki i ni isu 1'oko nighati takele nuu;

agbalagba ti o ni isu 1'oko ni akoko yen,

oju ni o nro."

This means that at this period of the year when the mushroom makes its appearance, yams are so scarce that they can only be found on the farms of old experienced farmers who can afford to economize food. The appearance of this mushroom is an indication that new yams should be available in another two months or so.

(b) Morphology:

EWE (Yor. WE = expand, i.e., the mushroom with expanding pileus). It has a pileus which is globose at first (the button stage), but later expands gradually until it becomes almost flat, sometimes reaching about 18 cm. in diameter. The fungus is Termitomyces robustus (Beeli) Heim.

It grows in large numbers in contact with termite nests on forest soils from August to October and it is much sought after by the people who consider it the sweetest of all the mushrooms. The heaviest rains in this area occur around August to September and the people simply call the rains "Eji EWE" (Yor. Eji = rains; EWE = Termitomyces robustus), i.e., the "T. robustus rains."

ROBO (Yor. ROBO = tiny, narrow, fine), a mushroom with a long tapering rhizomorph and a small pileus. The mushroom is Termitomyces

Termitomyces Heim, growing on soil in contact with termite nests. A

small annulus is present on the stipe.

ESE-ADIE (Yor. ESE = leg, foot + ADIE = chicken, i.e. chicken's foot). This mushroom grows on dead wood and its shape resembles that of the foot of a chicken. It is Schizophyllum commune Fries.

GUNNUGUN (Yor. GUNNUGUNNU = lean, dull, unattractive). The fungus grows on soil. It has a narrow stipe and a dull colour, hence the name. This is Agrocybe broadwayi (Murr.) Dennis.

(c) Growth habit:

OLUBEJE (Yor. OLU = mushroom + IBI = Place, spot + MEJE = seven, i.e., a mushroom growing in seven different spots). The mushrooms grow in large groups on soil and the people have been able to count at least seven groups produced within short distances of each other. This is Termitomyces globulus Heim & Goossens.

OLUORAN (Yor. OLU = mushroom + RAN = spread) The sporophores are very small and they appear in groups spreading over a large area of soil. They usually make their appearance after heavy rains. This mushroom is Termitomyces microcarpus (Berk & Br.) Heim.

OHU (Yor. HU = grow). This fungus produces a big, more-or-less spherical, white, subterranean sclerotium, sometimes up to 25 centimetres or more in diameter. If the sclerotium is kept in a cool moist place it continues to produce (grow) white sporophores over a long period of time, hence the name. A farmer coming across the sclerotium while cultivating his farm usually takes it home and obtains his mushrooms

from it in this manner. The fungus is Pleurotus tuber-regium (Fr.)
(Sing.)

(d) Texture:

OLU-AWO (Yor. OLU = mushroom + AWO=leather). This mushroom has a tough texture and it is also known as ERIROKIRO (Yor. ERI = that which + ROKIRO = very tough). It is Pleurotus squarrosulus (Mont.) Sing., growing on wood.

ETIOLOGBO (Yor. ETI = ear + OLOGBO = cat, i.e., cat's ear). This is the Yoruba name for both Auricularia auricula (Hook.) Underwood and Auricularia polytricha (Mont.) Saccardo. These fungi, which are also found on wood, have a gelatinous texture and they are thrown into folds resembling the shape of an ear.

WOWO (Yor. WO = break). The fruiting bodies of this fungus are very small in size and brittle. They are produced in large clusters at the base of dead trees. The fungus is Psathyrella atroumbonata Pegler.

(e) Habitat:

ISGAPARO (Yor. ISO = effluvium + APARO = bush-fowl (Francolinus bicalcaratus)). The native people usually pick the fruiting bodies of this fungus among grasses and on cultivated farms where the bush-fowls are commonly found. They associate the appearance of the fungus with these birds and they have the belief that the fruiting bodies of the fungus are produced by them. This is Calvatia cyathiformis

(Bose) Morgan.

In addition to the above, the native people have been able to observe the growth of many fungi on different kinds of dead wood and they have named each fungus after the wood on which it grows.

The species reported above represent only some of the mushrooms recognized by the Yoruba to be edible. Out of these the Termitomyces species are the most popular with the people. Twelve species of Termitomyces, all of which are edible, have been described as occurring in Nigeria, but only six of these have been fully identified (Alasoadura, 1966, 1967; Zoberi, 1972, 1973). Some Termitomyces species have also been reported from Congo and the Camerouns (Heim, 1951, 1952, 1958).

THE POISONOUS AND NON-EDIBLE MUSHROOMS

Besides the edible mushrooms, the native people have also been able to recognize some poisonous or non-edible fungi, a few of which are listed below:

AJEIMUTIN (Yor. JE = eat + IMU = without drinking + OTIN = alcohol, i.e., "Eat without drinking alcohol"). The people have learnt that it is safe to eat this mushroom provided it is not immediately followed by alcohol. Drinking alcohol at the same time it is eaten, however, makes it poisonous. This is Coprinus africanus Pegler.

AKUFODEWA (Yor. KU = die + FUN = for + ODE = hunter + WA = search). This name is derived from the odour given off by this fungus which resembles that of a dead animal and also from the fact that, like a

dead animal, it is usually covered by flies. A hunter smelling this in the forest will mistake the odour for that of a dead animal and start searching for it. The people observe the presence of a veil on some and its absence on others. This is the Yoruba name for Phallus aurantiacus Montague, Phallus indusiatus Vent. ex Persoon, Phallus rubicundus (Bose) Fries, and Mutinus bambusinus (Zollinger) Fischer.

ASA-ITA (Yor. ASA = snuff + ITA = Celtis zenkeri (a big tree), i.e., the C. zenkeri snuff). This is Daldinia concentrica (Bolt. ex Fr.) Ces. & de Notaris, growing on the dead wood of C. zenkeri. There is a heavy deposit of ascospores on the surface and the surrounding of the stroma which resembles a snuff; the Yoruba name is derived from this.

OLU-GBONGAGA (Yor. OLU = mushroom + GBONGAGBONGA = spread, expanded). This mushroom appears at night or early in the morning and within a very short time the pileus is fully expanded (hence the Yoruba name). As soon as the sun's rays touch it, however, it deliquesces. Because of this characteristic the people consider it poisonous and the Yoruba native doctors use it in the preparation of some charms. The fungus is Coprinus ephemerus Fr. It grows on dung-hill. A/

All the Yoruba people interviewed are of the opinion that any fungus growing on a living tree is poisonous.

Certain mushrooms present a problem of identification to the people and they find it difficult to tell whether they are edible or

poisonous. One way they try to find out is by feeding them to chickens. They believe that any mushroom eaten by chickens is edible. Unfortunately this is not onehundred per cent trustworthy.

HUNTING, SELLING, AND COOKING EDIBLE MUSHROOMS

The most popular edible mushroom with the people is "EWE", Termitomyces robustus. As mentioned earlier on, this grows around the month of August during the heavy rains and when it grows it is usually more abundant than any of the others. Mushroom hunting is done by women. They usually leave home very early in the morning to hunt for the mushrooms in the forests, and experience has shown them where the mushrooms could be found in abundance. Mushroom hunting is not necessarily team work and it is done either for personal consumption or for sale or both.

During mushroom hunting, the people usually observe that Termitomyces robustus commonly grows scattered on the soil, but occasionally they find them growing in rings or crowded together in large clusters. In the latter case the natives refer to the mushrooms as congregating in a "market".

Another mushroom which has been observed by the people to grow in clusters is "OLUBEJE" (Termitomyces globulus). As mentioned earlier on, the natives have been able to count at least seven large clusters of this mushroom growing within short distances of each other. The women, on coming across one cluster, usually throw around handfuls of soil and call out to the other groups to appear. A little search then

reveals the other groups. The soil, presumably, is to expose the mushrooms by disturbing the weeds and the leaf litter that may be covering them. t /

The women collect the mushrooms from the forests and bring them in large baskets to the main road and display them by the road side for passers-by to buy. In most cases the women carry the mushrooms into their village or town for sale. Some women even trade in mushrooms by going to buy in large quantities at retailer's prices from the road-side sellers. They carry these into the town for sale to consumers, thereby making their own profits. The mushrooms collected in a day are usually cooked the same day. However, a few of the old women maintain their regular supply over a long period of time by smoking and storing large quantities of the T. robustus collected during the growing season. At present no mushroom growing farm has been established in Nigeria.

In general, prior to cooking, the pileus and stipe are cut into pieces and suspended for some time in cold water to which some table salt has been added. This is to kill any foreign bodies, such as maggots, which might have been deposited among the gills of the mushroom. It is afterwards well rinsed in cold water and boiled with enough salt to sweeten it. It may then be made directly into a soup by adding all the other essential ingredients like pepper, tomatoes, onions, oil, etc., and cooking, or it may be added to an okro soup

or a vegetable soup in which all the essential ingredients are already present. 2 /

WHY SOME YORUBA PEOPLE DON'T EAT MUSHROOMS

The people of Efon Alaye - a town in Ekiti Division in the Western State of Nigeria - traditionally do not eat "EWE" (Termitomyces robustus). In the last century there was a tribal war between the Ekiti people and the Ibadan people, both of whom are in separate Provinces in the Western State. As the news reached Efon Alaye that the Ibadan warriors were in pursuit of the Ekitis, the people of Efon Alaye deserted the town. They all fled through a common path, and by the time the Ibadan warriors reached Efon Alaye, "EWE" (T. robustus) had already grown over this escape path and covered their footprints. When the Ibadan warriors saw the mushrooms they thought among themselves that if the people had fled through that path the mushrooms could have been crushed. They then turned back and went another way. That was how the Efon Alaye people were saved from being taken prisoners or killed during the war. For this reason the Efon Alaye people had since considered the "EWE" (T. robustus) sacred and had forbidden the eating of this mushroom in the town. There is even a popular saying in the town condemning the eating of T. robustus by the people: 2 /

"Omo Olobalu ko gbodo je EWE

Ng ko fi igba se EWE

Ng ko fi awo se EWE

Ng ko duro galata ki ng da oni

EWE si ita ni Obalu."

In Yorubaland every town or village has a traditional head known as the "Oba" (King) to whom all the subjects are responsible. The market place in each town is usually situated in front of the Oba's palace and the Oba is referred to as the owner of the market. At Efon Alaye, "Obalu" (in the above saying) is the name of the market and "Olobalu" means the owner of the market, that is the Oba. The above saying simply means: "The Oba's subject must not eat T. robustus, hence I don't cook it."

The Yorubas have extended families and each family has a family name by which the members are commonly identified. Among such family names is "Olu". Hence, apart from being a name for the mushroom, "Olu" is also a family name as well as a name for individual people. Simply because of this similarity in names, members of those families with "Olu" as the family name don't eat mushrooms. It is not that it would have any adverse effect on them if they ate mushrooms, but they just hate to be called "Olu" and at the same time be eating "Olu" (the mushroom).

Other reasons given for not eating mushrooms are much less interesting. Some people claim that mushrooms give them stomach pains or

rheumatism, while others are irritated by the fact that they are associated with decaying matters and also by the presence of maggots among the gills of some of them, e.g. Termitomyces robustus. The occasional news of people dying of mushroom poisoning has created so much fear in the minds of many as to make them decide to keep away from mushrooms for good.

TRADITIONAL BELIEFS AS TO THE ORIGIN OF THE MUSHROOMS

In the olden days some of the natives had the belief that the growth of Termitomyces robustus was controlled by a god. Hence, in many of the villages, the people used to make an annual offering of a white hen to appease this god. This was usually carried out in a forest near the village by an aged woman. The people were convinced that there was always a poor growth of the mushroom any year the offering was not made.

Another belief, and one which is still held by many of the natives today, is that T. robustus drops from the skies along with the rains. As said earlier on, this mushroom grows around August when we have the heaviest rains. The rains at this period of the year are referred to as "EJI EWE", i.e., the "T. robustus Rains", and whenever it rains heavily it is common for the people to say: "Ewe nja lati Orun," meaning that the T. robustus is falling from the skies.

In Ekiti Division the people have a fable associating the origin of mushrooms with decay. It was customary among the Yoruba in the olden days for a bride to be accompanied by a maid to her marital home after the wedding and continue to live with her and run errands for her.

The maid could either be the bride's younger sister, a younger relation, or a slave. After the wedding ceremonies it was customary for the bridegroom to return to his house without the bride. Later on in the evening the bride, accompanied by the maid, would then join him. In this fable it happened that the bride's maid was a slave and they had to cross a river on their way to the bridegroom's house. As they were about to cross, however, the slave pushed the bride into the river and then disguised as the bride and went to the bridegroom's house. Luckily for the lawful bride, she was saved by the goddess of the river as she was drowning. The goddess brought her to the surface and left her by the river-side where the bridegroom's relations who later came to fetch water found her and took her home to the bridegroom. As a punishment for the wicked slave, a pin was dropped into a big pot of boiling water and she was asked to bring it out with her bare hand. In the process the slave fell into the pot and died. In those days corpses of wicked people were never buried; hence the slave's corpse was dumped on a dunghill. On visiting the dunghill a few days later, the people observed mushrooms growing on the body. As this was their first time of seeing mushrooms, the people therefore attributed the origin of mushrooms to the decaying corpse.

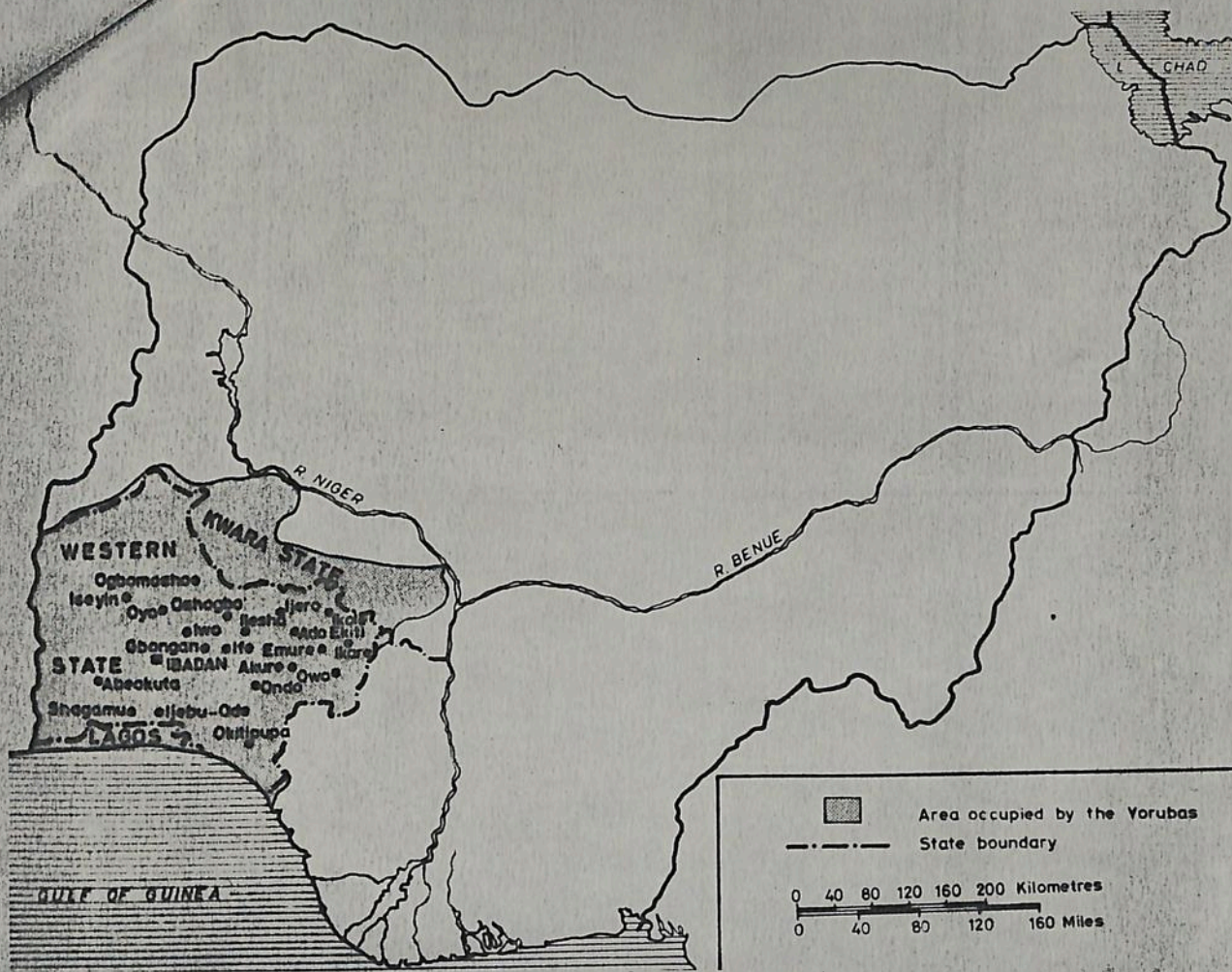
This is the first in a series on mushrooms and the various ethnical groups in Nigeria. Further work is in progress particularly on the usefulness of fungi to the Yoruba people in local medicinal practices.

ACKNOWLEDGEMENTS

To all those who supplied information on this subject, I extend warm thanks. I am also grateful to Mr. R.O. Alabi, Dr. A.O. Fajola, and Dr. M.H. Zoberi for useful discussions during the course of the investigation and I wish to thank Professor O.R. Collins and Dr. S.O. Alasoadura for reading through the manuscript.

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LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

6-V-1974

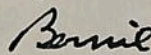
Dear Dick:

In anticipation of a trip to Guatemala and Mexico, I would like to let you know the approximate dates of my departure and return. I plan to leave on 28 May and to return on or about 17 August, so I'll ask you not to send manuscripts during this interval of my absence, but I'll gladly work on anything you care to send me now.

I have occasionally worked with archeologists but this is the first time I've been invited to join their staff in the field. We'll be at Yaxha, Guatemala where I expect to stay for at least 2 weeks as resident mycologist-ethnomycologist.

With best regards,

as ever,



B. Lowy



PLANT PATHOLOGY HERBARIUM
 CORNELL UNIVERSITY

ITHACA, NEW YORK 14850

NEW YORK STATE COLLEGE OF AGRICULTURE
 A CONTRACT COLLEGE OF THE STATE UNIVERSITY

15 April 1974

Professor Bernard Lowy
 Department of Botany
 Louisiana State University
 Baton Rouge, LA 70803

Dear Bernie:

R. K. Benjamin was good enough to include with your review of the paper by Hennebert & Korf the copy of the letter to you from my good friend, Irma Gamundi, in re the problem of Peziza vs. Galactinia. Gosh, I thought I had already written enough on the subject that there would be no doubt in your mind about why I must reject Galactinia, but your turning to Irma (one of the few remaining who insist on using Galactinia in a sense they must know is wrong) makes me aware that I have not gotten the message across.

Irma's letter to you does not clear up the problem you face. For if you read it correctly, the genus that I want to name cannot under the Code be called Galactinia!

First, there is a taxonomic problem: does one want a genus with both round and oval spores? Answer: Le Gal (in recent years) and I both want such a genus; Irma does not. That alone makes for different names. Note, therefore, the following synonymies:

BROAD GENUS, INCLUDING ROUND AND OVAL-SPORED IODINE POSITIVE PEZIZACEAE (GALACTINIACEAE)

- Peziza L. ex St. Amans 1821
- ? Sphaerosoma Klotzsch in Dietr. 1839
- Plicaria Fuckel 1870
- Leptopezia Otth 1871
- Phaeopezia Sacc. in Vido 1879
- Galactinia (Cooke) Boud. 1885
- Lepidotia Boud. 1885
- (etc. later)

NARROW GENUS FOR OVAL-SPORED ONLY

- Peziza L. ex St. Amans 1821
- Phaeopezia Sacc. in Vido 1879
- Galactinia (Cooke) Boud. 1885
- Lepidotia Boud. 1885
- (etc. later)

Now, then, for Irma to choose to use Galactinia for this second concept she must throw out Peziza as a "nomen confusum," a provision of the Code that I do not know has ever successfully been employed. (The French school has always tried to get rid of Agaricus on exactly these grounds - it was too broad in Fries's treatment, just as they hold Peziza is too broad in Fries's treatment. Poppycock!). But let's say she is strong-willed, and that she just wants to try to apply that article of the Code that nobody else has ever been able to enforce. Next she wants to get rid of Phaeopezia. Why? She says the "original circumscription" does not agree with that of Galactinia. Agreed, but the monotype species, Peziza apiculata Cooke, is one that Le Gal, I, (and maybe Irma?) agree belong in the genus we want to name! My feeling is that the correct name for Irma to use, IF she does away with Peziza!, would be

Phaeopezia. To use Galactinia correctly she would have to conserve it against Phaeopezia, or at least admit that she does not still include Galactinia apiculata in the genus! She has no other options, it seems to me.

But let us look at the other side of the coin. Can Le Gal or I use Galactinia as the name for the genus ~~which we circumscribe~~ to include spherical-spored species? Absolutely not! List one above applies here. Again, I assume that Irma is successful in convincing me that Peziza can be discarded. Now she will have to contend with still more names. Sphaerosoma just may enter in, depending on whether its type species has iodine-positive asci or not. The position I took in my presidential address is that it does. Then we have to decide if it is different enough from other round-spored iodine positive species now placed in Plicaria to warrant its separation. Let's not cross that bridge, but rather let's just forget that Sphaerosoma might be a problem. Plicaria Fuckel cannot be brushed aside; though it was erected for both spherical and oval-spored species, the lectotype is a spherical-spored species. If both Peziza and Sphaerosoma are out, the oldest available name for the genus that both Le Gal (recently) and I want to name is Plicaria. Neither of us could use Galactinia without conserving it against Plicaria, Leptopezia, and Phaeopezia! And I'd suggest also conserving it against Lepidotia from Boudier's same paper, since otherwise someone might just come along and put Galactinia in synonymy with Lepidotia (I might even do it myself, just out of spite!), and that would be the end of Galactinia again.


No, Irma is quite wrong in leading you to think that I can in any way adopt Galactinia as a legitimate name for the genus as Le Gal and I delimit it. I am also convinced she is absolutely contrary to the Code in not adopting Phaeopezia, if I understand her taxonomy.

It is a great pity that the French become so enamoured of generic names that they refuse to give them up despite the Code; it is also unfortunate that some of us (Irma in this case) follow their errors without fully investigating the problem.

At least now you will know what to call your Louisiana specimens. Depending on your taxonomic opinion, the oval-spored ones can be Peziza, Plicaria, or Phaeopezia. The spherical-spored ones can be Peziza or Plicaria. Using Irma's taxonomy, the correct names will be Phaeopezia and Plicaria once Peziza is dead; using Le Gal's (and my) taxonomy, all would be Plicaria when Peziza dies. But believe me, Peziza isn't dead, and won't be till it is conserved against. And I doubt if there are more than one or two votes around to kill it!

I'm sending a copy of this letter to Irma, and also to Dr. Hennebert.

Warm personal regards, and thanks for your thoughtful comments on the MS,



Richard P. Korf
Professor of Mycology

rpk/rpk

cc: Irma Gamundi, G. L. Hennebert

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

18-IV-1974

Professor Richard P. Korf
Plant Pathology Herbarium
Cornell University
Ithaca, New York 14850

Dear Dick:

Thanks very much for taking the trouble to clarify some taxonomic and nomenclatural points on Peziza vs Galactinia, concerning which I have freely admitted my ignorance - the chief reason for my consulting Irma Gamundí in the first place. Her explanation, I should add, does not seem to me to carry great conviction, but I thought it fair to consult her since I knew that a minority view on this matter existed and that she was probably the leading exponent of that view. There was, however, another motive for that consultation, which had little to do with nomenclatural practices. It was a courtesy that I thought she would appreciate. I'm very glad to have your comments which certainly appear to fully justify your position.

I don't want to seem too irrelevant (hardly a greater crime exists these days) but the pursuit of an appropriate name (and I can say the same about my struggle with "Metabasidiomycetidae") has reminded me of the search for that memorable but elusive beast the snark:

"They sought it with thimbles, they sought it with care;
They pursued it with forks and hope;
They threatened its life with a railway-share;
They charmed it with smiles and soap."

I can add with some assurance, that the outcome of your hunt has been rather more felicitous than mine, since you did not have to resort to invention to track down your particular prey.

With sincere thanks and all best wishes,

Cordially,

Bernie
B. Lowy

PS. The enclosed is one among many packets sent to me by Dumont as a putative 'jelly' - but which looks more like a member of the *Sphaerostoma*. The cover tip is curious (to me). Would you please examine it and let me have your diagnosis? Keep half or more if it is of any interest.

B. Lowy

16 April 1974

Dr. Richard K. Benjamin, Editor-in-Chief
MYCOLOGIA
Rancho Santa Ana Botanic Garden
1500 N. College Avenue
Claremont, CA 91711

In re: Ms by Hennebert & Korf

Dear Dick:

I am returning herewith the appropriate changed pages of the MS as per your request in your letter to me of April 10th. A copy is going to Dr. Hennebert, to see if he disagrees with any of the points I accepted or rejected from the reviewers' comments.

I have written to Bernie Lowy about the Galactinia vs. Peziza problem and Irma Gamundi's quite unsatisfactory response to him just to straighten him out. Given our taxonomic opinion that both round and oval-spored species belong in one genus, we could not possibly adopt Galactinia even if we believed it were possible to do away with Peziza. I thought I had flogged that dead horse often enough in print, but Bernie turning to Irma (one of the last holdouts for Galactinia) I found amusing.

His other point, equally raised by Don Rogers, is understandable, and both Hennebert and I surely expected howls of discontent at our intentional use of a name (Chromelosporium ollare) which we know under the present code is wrong. But Bernie is wrong to say that our proposal of C. fulvum is a nomen provisiorum -- to the contrary, that is the name we do and must accept under the Code. The provisional name is C. ollare (Pers.) Hennebert 1973. That name will only be acceptable when the Code is changed. We are surely not the only people who continue to follow Hughes' proposal for 1801 for Hyphomycetes - see the recent THE FUNGI IVA where 1801 is adopted for the Hyphomycetes. Our best guess is that the Code will be revised, and that Hyphomycetes will have either an 1801 or 1753 starting point. We would like this paper to read correctly after the fact; it does read correctly before the fact: we accept and propose the necessary new combination C. fulvum until such time as the Code is changed (if ever). Thus clearly neither Hennebert nor I wish to use C. fulvum in the body of the paper. sp-1

In re the matter on pp. 5-6 for which opinion was solicited as to whether to include in the text matter or place in a footnote: you will note one vote each way from Lowy and Rogers. It appears that the matter now lies directly in the hands of the Editor-in-Chief to decide!

I really appreciate the many detailed comments by Don Rogers. I am accepting his comments on the use of such possessives as Fries'e and Sturgis's instead of Fries' and Sturgis' after his kindness in acquainting me with Strunk & White's THE ELEMENTS OF STYLE (now on my student lab bookshelf and required reading for my graduate students!). I also deeply appreciate his checking the original spelling, punctuation, etc. of the Persoon and other works which I had wrong. I plead responsible, for though I followed Hennebert's text exactly, I should not have relied upon its correctness but checked the original myself. That just isn't like me. Now on to his specific comments that are not merely textual corrections:

p. 1 et seq. "Mould" vs "mold." I agree that "mold" is the usual American custom, but we intentionally followed Illman, Mycologia 62: 1214. 1970 [1971]. Our only use of "mold" was on pg. 2, where we are quoting the US version of Kneebone's publications (the English versions are, of course, "mould").

p. 3, 1.18 I also argued with Hennebert that Schweinitz and not von Schweinitz was correct. Maybe in French usage he is right, but with Don's position supporting mine, I agree to strike out the "von."

1.3 from below It is not superfluous in the sense of the Code's later starting point provisions; it is superfluous in the usual sense of that word and if the starting point is changed would then indeed be superfluous. No intention was here to mean "superfluous as defined by the current Code" and I vote for retention of "superfluous." We could have written, instead, "to be an unnecessary new name."

1. 2 from below I fully intended to check the first edition of Chevallier's work, which is here at Cornell, and just plain forgot. My guess is that Hennebert does not have that edition available to him. Thanks for the correction!

p. 4, 1. 12 I agree that a name cannot be "devalidated" unless it has been earlier validated. A herbarium name is not a validated name. But a published name becomes validated by the act of publishing; later starting points devalidate such validly published names. Hence, "ollare" was validated by publication in 1801. Because it was a Hyphomycete and not a rust, smut, or gasteromycete, the epithet was then devalidated by virtue of a special later starting point. We'll keep "devalidated."

p 1. 14-16 Don is as confused as I was when I first saw this. S. fulvum Link ex Link 1824 is a different fungus than S. fulvum (Link) Fries 1832, i.e., they are homonyms, based on different types! Fries's name is a transfer of Botrytis fulva Link 1824 (\equiv Dematium ollare Pers.), while Link's is a republication of S. fulvum Link 1809 in 1824. Fries's use of S. fulvum in the Systema thereby devalidates (another use!) Link's earlier, post-starting-point homonym. * (see below)

footnote 2: discussed above.

1. 2 from below discussed above under p.3, 1. 3 from below.

p. 5, 1. 1 Chevallier again to be corrected, "von" to be deleted.

1. 12 Even if S. fulvum (Link) Fr. is not a later homonym of S. fulvum Link 1809 (not validly published), it surely is of S. fulvum Link ex Link 1824, as noted above under p. 4, 1. 14-16. * (See below)

p. 11, 1. 7-8 I approve of Don's revised translation. To avoid the [] problem, I propose the following wording: "... it creeps far on moist soil which it covers like a spiderweb."

p 1. 3-7 I really do not know the validating authors for many of these genera. They are written with 1753 as a starting point. Since most early discomycete names in all of the literature at my disposal are uniformly given incorrect validating authors (a real reason why I am working hard to abolish 1821 as a starting point!), I see no objection to our citing what are technically "incorrect" citations, i.e., citations where we fail to indicate the validating author. I found that merely to cite correctly the validating author for the common Helotium citrinum took me over 4 hours of library work; no wonder everybody cites it wrong! I have little enthusiasm to spend more library hours tracing down which post-1.I.1821 author first used the first 5 names in that list. The work will be obviated by a change to 1753, and partly so by a change to 1801. I vote to retain the author citations as given.

p. 12, 1.2 I must ask Hennebert to make the correction and forward it to RKB.

* My error. Link transferred S. fulvum to Alytosporium in 1824, and did not retain it in Sporotrichum. So Fries' use is not superfluous under the current Code.

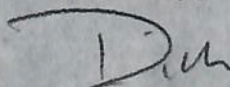
p. 12, l. 12-13 Since this is unclear to Don, I think amplification is necessary. It should now read: "... Link [= B. cinerea Pers. fide Hennebert (1973)], and ..." which will make it clear that this is a taxonomic opinion expressed elsewhere.

p. 32, Schweinitz I did not know of the covers existing at NYBG, and since most of us know only the 1834 volume cover date and (hopefully) Don's paper establishing the 1832 date, I assumed the "('1834')" was necessary. We delete as suggested.

I see I have missed commenting upon Don's suggestion for shortening the citation of specimens to reduce space. Our attempt was to make it clear in visiting a herbarium which specimens we had examined. The "s.n." could be eliminated, but it saves little. That the specimens have something to do with Discina cinerophila is clear, and I agree that nomina nuda scarcely have syntypes. I have shorted the material accordingly to his suggestions, but choose not to eliminate the citation of the duplicate slides, etc. on deposit elsewhere, as such information is very valuable should the original specimens be lost or mislaid.

The kind of insight and detailed reviewing provided by both Lowy and Rogers are valuable contributions, for which we are deeply indebted.

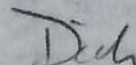
Sincerely,



Richard P. Korf
Professor of Mycology

cc: G. L. Hennebert
Bernard Lowy
Donald P. Rogers

P.S. I see I also forgot to comment on your editorial decision that beginning with the Sept-Oct 1974 issue of MYCOLOGIA you will now restrict small measurements to the capacity of the observer to make, i.e., 0.2 μ m for light microscope data. I can certainly see your point. My mathematician consultant here (Prof. Kiefer of the MSA) is not happy with your decision; he contends that depending upon the model it is certainly possible that even given values (e.g., 0.2, 0.4, 0.6, etc.) around which observations vary, mathematically it is possible to get valid averages that go not only to 0.1 but even to the next order of magnitude. I don't want to enter into the argument, and am certainly content to have you change measurements from 13.1-15.5 to read 13.2- 15.6, but I see from your notation that you are not yet sure enough of yourself to be certain if you are going to round all figures up, or some up and some down, when they end in 9's, 1's, etc. If you are determined to go this course, I'd say round them all up. Maybe you have better mathematical advice.





FACULTAD DE CIENCIAS NATURALES
Y MUSEO DE LA PLATA

INSTITUTO DE BOTANICA "SPEGAZZINI"
53 No. 477

LA PLATA, March 21, 1974.-

Dr. Bernard Lowy
Louisiana State University
and Agricultural and Mechanical College
BATON ROUGE - LOUISIANA, U.S.A.

Dear Dr. Lowy,

Thank very much for your letter of 4-III-74, which arrived when I was in a collecting trip to Tierra del Fuego.

I do think that the case Peziza -- versus Galactinia is still an open question. There are long arguments -- pro- and against Peziza. For references you can consult; Le Gal, Disc.-Madagascar, 1953: 27-30 and Bull.Soc.Myc.Fr.1962: 204-206; Rifai, Austral. Pezizales, 1968: 217-226 where the two positions are fully discussed.

I agree with Mme. Le Gal who considered Peziza (Dill.) L. a "nomen confusum" because Seaver's typification is based in a doubtful species: Peziza cochleata L.

To give you an idea of the complexity of the matter, I will make some comments.

The following lectotypification of Peziza have been made:

1st, typif.: Boudier (1885) of Peziza Dill. ex Fr.: Aleuria aurantia Fuckel This is Peziza sensu Boudier and has been rejected because A. aurantia is type species of an early genus: Aleuria Fuckel (1869).

2d. typif.: Seaver (1928) of Peziza (Dill.) L.: Peziza cochleata L. rejected because is a doubtful species.

3d. typif.: Clements & Shear (1931) of Peziza (Dill.) L.: Peziza vesiculosa Bull., generally approved by those authors who wish to maintain Peziza.

But although these authors actually conceive the genus as characterized by cup-shaped, glabrous or furfuraceous apothecia with iodine-positive reaction of the asci nobody specifically (that is according with the Code) emended the old genus to restrict its sense. In that connection, Clements and Shear did not give a description of his Peziza; this one comes from the key. In that ample sense Peziza is not a concise, well delimited genus and is taxonomically inadmissible. Something synonyme of "cup-fungi".

What happens with Peziza (Dill.) L. in a modern sense? Some of the recent authors (Korf, 1961, Denison, 1963) use it in a sense that includes both ellipsoidal and rounded-spore species. Others (Batra, 1963; Eckblad, 1968; Dennis, 1960; Rifai, 1968) segregate the rounded-spore species in the genus Plicaria Fuckel emend. Boud. You see, still there is no agreement in the scope of the genus nor

LOUISIANA STATE UNIVERSITY
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BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

March 4, 1974

Dra. Irma J. Gamundí de Amos
Instituto Botánico "Spegazzini"
Calle 53, 477
La Plata, Argentina

Dear Dra. Gamundí:

I am writing to ask your assistance concerning the status of the generic names Galactinia (Cooke) Boud. vs Peziza Dill. ex Fr. As I understand it, some authors, including yourself and Mme Le Gal prefer to treat Peziza as a nomen confusum and consider it as a synonym of Galactinia (pro parte). At least I have this impression from your paper on "Discomycetes operculdos ..." in Darwiniana 13, a copy of which you kindly sent to me some years ago.

The reason I am troubling you with this question now is that I have been asked to review a paper submitted to Mycologia by Hennebert and Korf in which the following paragraph appears:

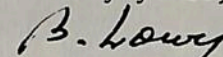
The correct generic assignment for apothecial peat mould —

Peziza is the genus to which most authors today would assign apothecial peat mould. *Discina*, where Sturgis referred his material, is taxonomically far removed. *Plicaria*, when accepted by some modern authors for a generic name, is then restricted to species with spherical ascospores, so that Schneider's choice of a genus is inappropriate. If species with biguttulate ascospores (such as peat mould) are to be placed in a separate genus from those species of *Peziza* with non-guttulate ascospores, then and only then would *Galactinia* perhaps provide a good generic name. This distinction, once championed by Boudier (1885, 1904-1911, 1907) who called the two genera *Aleuria* and *Galactinia*, is not accepted by any modern worker. The few who use *Galactinia* in a broad sense to include both spore types, and who abandon *Peziza*, do so in violation of the Code of Nomenclature. The junior author treats both *Plicaria* and *Galactinia* as taxonomic synonyms of *Peziza* (Korf 1972, 1973a, 1973b).

Since I have not studied this nomenclatural matter, I would greatly appreciate your comments which only with your permission will I include in my review. If you prefer that I not include them, I shall be grateful to you nevertheless, for clarifying some points which I am not competent to judge.

With kindest regards, as ever,

Cordially yours,

A handwritten signature in cursive script that reads "B. Lowy". The signature is written in dark ink and is positioned above a horizontal line.

Bernard Lowy

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

March 27, 1974

Dear Dick:

In my comments on Korf's paper on the peat mould, I had intended to add a note concerning the use of Peziza vs Galactinia and wrote to Dr. Irma Gamundi in La Plata to get her interpretation, knowing that she had worked with the problem some years ago. But I was beginning to feel guilty about holding the paper too long and since I had not received a reply from Dr. Gamundi, I returned the paper to you without her comments.

Enclosed is a xerox copy of her letter which I have just received. If you wish, you may forward it to Dick Korf. Of course Dick is under no obligation to respond, but at least this expresses the minority opinion of another contemporary worker. Dr. Gamundi's statement is a commentary on Dick's paragraph bearing the title: "The correct generic assignment for apothecial peat mould" which I sent to her.

Cordially,


B. Lowy

B. Lowy
Ed. Board

Bernie: see p. 34a first.

Received: 4-III-74

Returned: 22-IV-74

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 27 Feb., 1974
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA? The peat mould, Chromelosporium ollara, conidial state of Peziza ostracoderma, etc.

by G. L. Hennebert and R. P. Korf

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

The following points should be considered.

1. Is the material new and worthy of publication in MYCOLOGIA?
2. Is the presentation clear and logical?
3. Are the conclusions justified by the evidence?
4. Could the paper be shortened substantially without interfering with its value?
5. Have the tables been prepared as clearly and concisely as possible?
6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated. Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer. Many thanks.

Sincerely,

Dick

R. K. Benjamin
Editor

Bernie: see p. 34 & first
} Received = 4-III-79
} Returned = 22-III-79

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 27 Feb., 1974
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?
The peat mould, Chromelosporium ollare, conidial state of Peziza
ostracoderma, etc.

by G. L. Hennebert and R. P. Korf

If so, please prepare two copies of your criticisms, one an un-
signed carbon that can be sent to the author (reviewers who prefer not
to remain anonymous may sign both copies of their appraisal). Minor
corrections and suggestions may be placed directly on the manuscript
using a soft lead pencil. Kindly return the paper with your comments
promptly.

The following points should be considered.

1. Is the material new and worthy of publication in MYCOLOGIA?
2. Is the presentation clear and logical?
3. Are the conclusions justified by the evidence?
4. Could the paper be shortened substantially without interfering
with its value?
5. Have the tables been prepared as clearly and concisely as
possible?
6. Are the illustrations adequate? Excessive? Properly grouped?
Properly explained? Worthy of publication?

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you anticipate not being able to review this paper within two or
three weeks, or if you prefer not to review it at all, please
return the manuscript without delay so that it can be sent to
another reviewer. Many thanks.

Sincerely,

Dick

R. K. Benjamin
Editor

Comments on "The peat mould ..." by G.N. Hennebert & R.P. Korf

This paper is notable for its fastidious approach to taxonomic and nomenclatural problems, yet it is paradoxical that the authors have deliberately chosen a name for the conidial state of a fungus, which they consider to be invalid. They plead that "we are caught on the horns of a dilemma" but it is of their own making and could have been avoided by following an option that they themselves suggest but reject. The critical sentence is: "We could have written this paper using C. fulvum throughout." (p. 19) But instead of adopting a correct name under the present rules, they have proposed a nomen provisorium which has no legal status according to the Code (Art. 34, par. 1 (2)). The authors' justification for this procedure is given in the first sentence of footnote 2 (p. 4). It is apparently based "on the assumption that sooner or later we shall return to l.V.1753 (Linnaeus) as the starting point of all fungi." This also leads them to propose a combination (Chromelosporium fulvum (Link) McGinty, Hennebert & Korf, comb. nov.) of a kind that is specifically repudiated by Recommendation 34A of the Code.

I suggest a return to the Code and accustomed usage^a. This would have the added advantage of eliminating the need for footnotes 2 and 4. A single footnote might then be substituted with such animadversions as may be desired.

Regarding the material on pp. 5-6 on which the authors solicit an opinion, I do not feel that this section is particularly "intrusive" and would recommend its retention as part of the text.

THE PEAT MOULD, CHROMELOSPORIUM OLLARE, CONIDIAL STATE OF
PEZIZA OSTRACODERMA, AND ITS MISAPPLIED NAMES, BOTRYTIS CRYSTALLINA,
BOTRYTIS SPECTABILIS, OSTRACODERMA EPIGAEUM AND PEZIZA ATROVINOSA

G. L. HENNEBERT

*Laboratoire de Mycologie systématique et appliquée,
Université Catholique de Louvain, B-3030 Heverlee, Belgium*

AND

RICHARD P. KORF

Plant Pathology Herbarium, Cornell University, Ithaca, New York 14850

SUMMARY

Peat mould has received several names and has been assigned to many different genera. Recent literature has unfortunately been burdened by misapplied names for both the conidial and apothecial states. This paper clarifies the history of the fungus, establishes its correct nomenclature, discards misapplied names, and offers a morphological redescription of both states with ecological comments and notes on related species. The apothecial state is correctly *Peziza ostracoderma*. Though the conidial state is here termed *Chromelosporium ollare*, that name will not be technically correct until a change in the starting point for these fungi is enacted; until then, *C. fulva* comb. nov. should be used and is the correct name under the *current* International Code of Botanical Nomenclature.

Peziza ostracoderma Korf commonly occurs in its apothecial and conidial states on peat soil, on steam-sterilized soil, and on pots in greenhouses. This is the reason it has been called "peat mould" ("Tørveskimmel") by Hellmers (1965). It has also been called "brown mold"¹ by mushroom growers (Bels-Koning and Bels, 1958;

¹ This term was apparently coined by L. R. Kneebone (pers. comm.) and used in ephemeral mimeographed handouts to participants in the Mushroom Industry Short Course at Pennsylvania State University in 1956, as revised in 1958, 1959, and 1961. The fungus was there determined as "*Phymatotrichum* sp. (*Botrytis*)", and the illustration accompanying this clearly indicates a fungus other than peat mould. The name "brown mould" was mistakenly applied to conidial peat mould, perhaps first by Bels-Koning and Bels (1958). Surely at least two fungi go under this common name in the mushroom growers' literature.

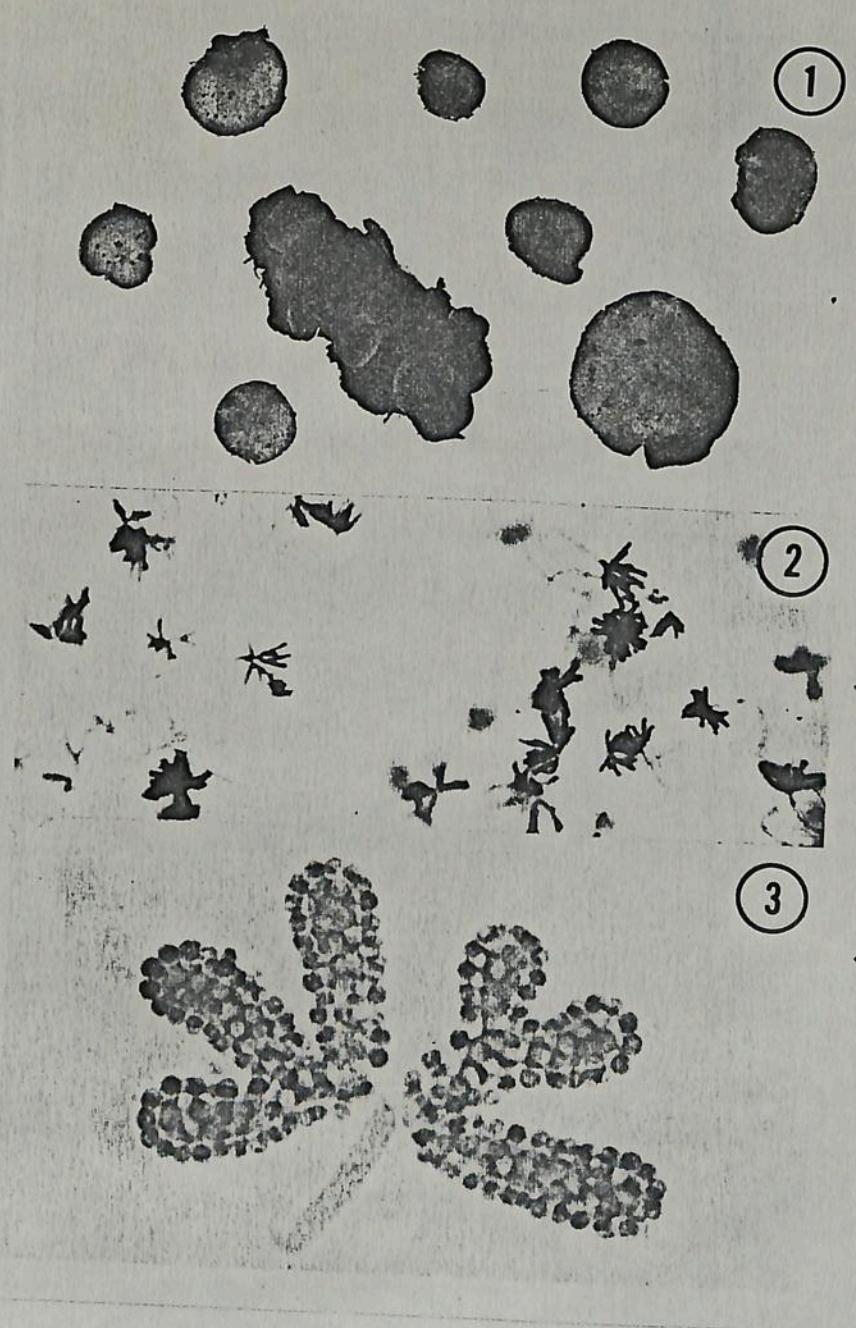
Stoller, 1968), but we advocate dropping that name since it has been applied to at least one other mushroom-bed fungus (Kneebone and Merek, 1959, 1961) that more closely resembles *Phymatotrichopsis omnivora* (Duggar) Hennebert.

Peat mould was one of the earliest fungi to be described (Micheli, 1729) and has received many different generic assignments. The names of a few other taxa have also been misapplied to both the conidial and apothecial states.

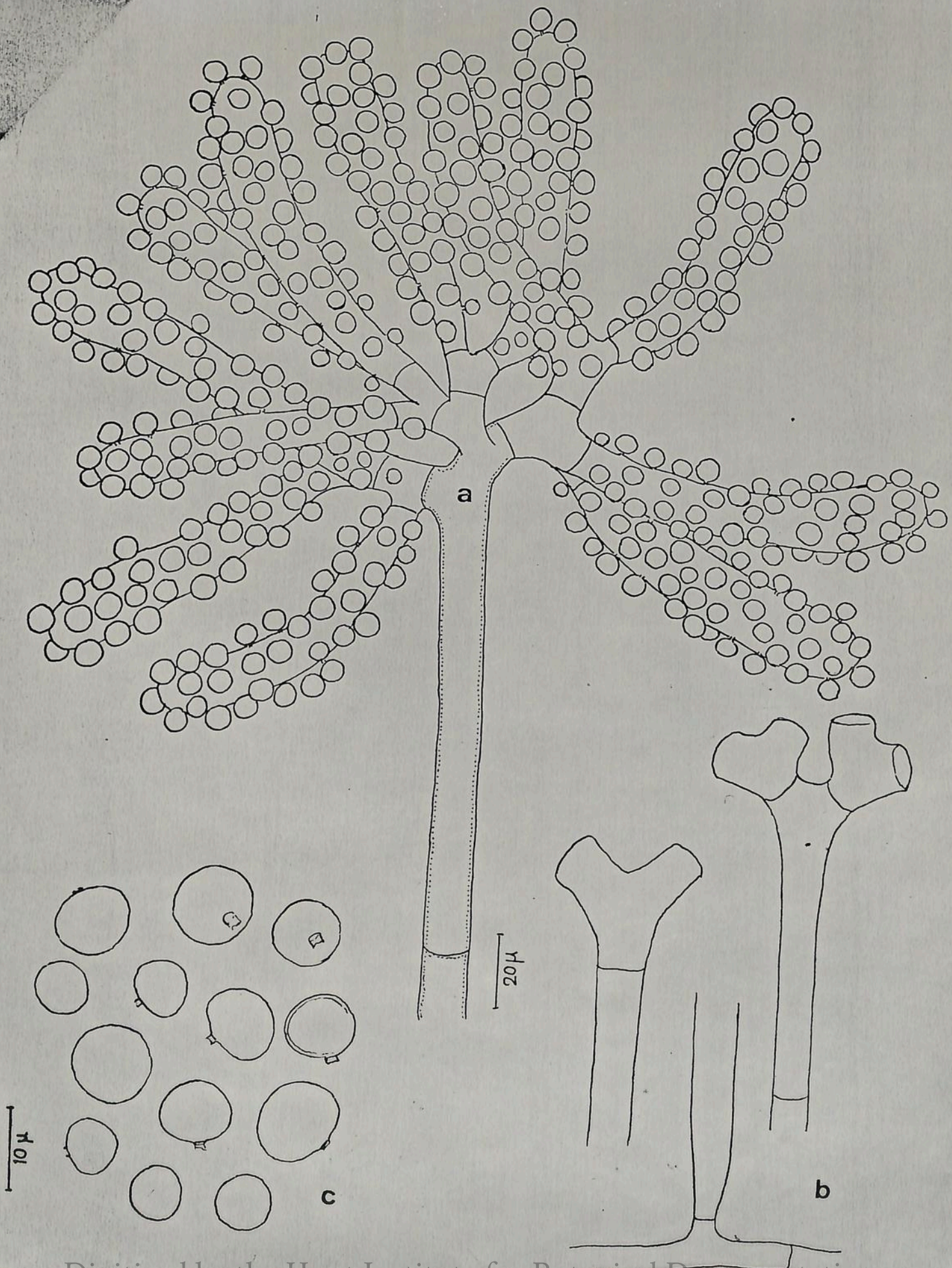
THE CONIDIAL STATE: CHROMELOSPORIUM OLLARE

Five epithets (one a polynomial) for conidial peat mould —

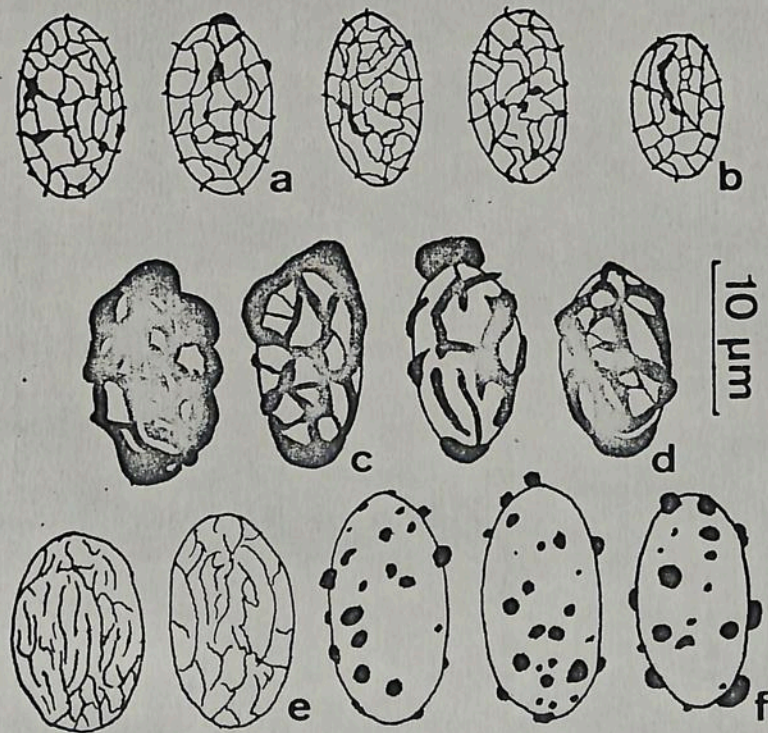
1) *Byssus sericea fulva perelegans* ... Micheli 1729. — Peat mould has been known for more than two centuries. Micheli (1729) described and illustrated it in the genus *Byssus* [Micheli] L. as "*Byssus sericea, fulva, perelegans, tenuissima et ramosissima, rimis terrae innascens et glebas circumveltiens*" (Byssus silky, fulvous, very elegant, very slender and much branched, appearing in the hollows



Review's copy



Digitized by the Hunt Institute for Botanical Documentation
Fig. 4. Reviewer's copy - this reduces to MYCOLOGIA page width, 5/9th this size.



Reviewer's copy: the blacks are black on the original; xerox not so hot.

Fig. 5

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

18 March, 1974

Dear Bernie:

Would you be willing to review the enclosed manuscript for MYCOLOGIA?

Studies in the Tremellaceae. V. The genus Efibulobasidium, gen. nov.

by K. Wells

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil. Kindly return the paper with your comments promptly.

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Dick

R. K. Benjamin
Editor

MYCOLOGIA

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Rancho Santa Ana Botanic Garden 18 March, 1974
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Sincerely,

Dick

R. K. Benjamin
Editor

Comment on "Studies in the Tremellaceae. V. The genus Efibulobasidium,
gen. nov." by Kenneth Wells.

This is paper V of a series here entitled "Studies in the Tremellaceae."
Since the 4 previous publications bear the title "Studies of some Tremellaceae,"
in the interests of maintaining uniformity, this paper should conform to the
title already in use.

Many students agree that present taxonomic arrangements of the resupinate and near-resupinate Tremellaceae do not reflect a natural system (Donk, 1966; McNabb, 1973). In the following account a new genus is proposed to accommodate two species that are presently classified in different genera. The establishment of this genus should serve not only to emphasize the relationships of the species included in the newly created taxon but also to improve the homogeneity of the taxa from which the species are transferred.

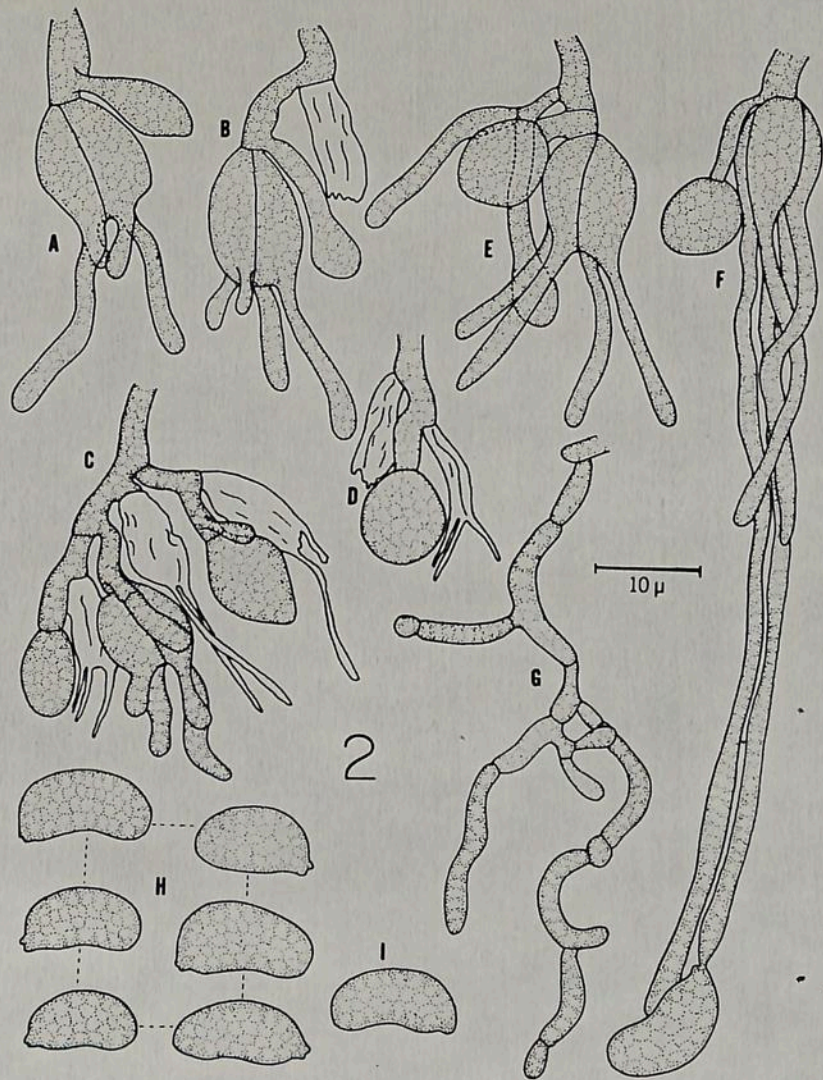
Some time ago I (1961) postulated that *Sebacina microbasidia* Christiansen et Hauerslev was not related to the species included in *Exidiopsis* but was more closely related to *Exidia rolleyi* Olive; however, the two species can be clearly distinguished by basidiocarp morphology. The basidiocarps of *Exidia rolleyi* are fundamentally pustular, whereas those of *Sebacina microbasidia* are essentially resupinate.

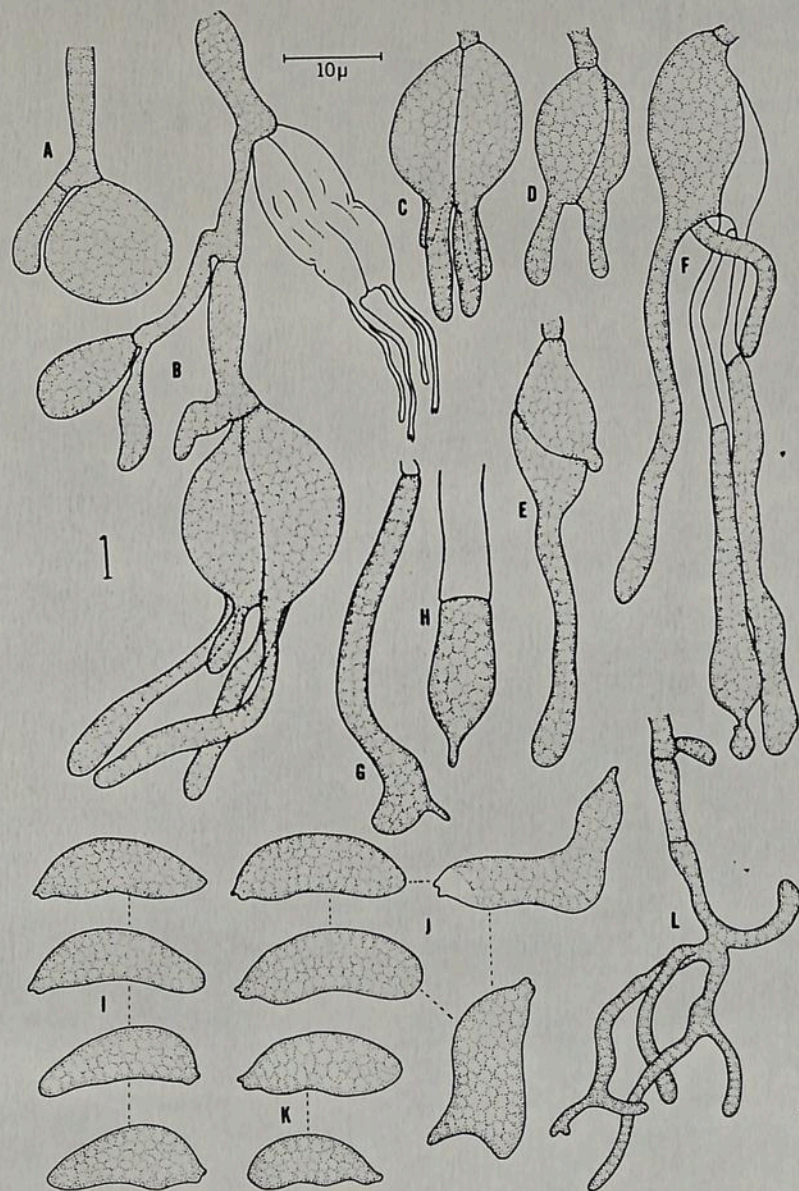
Subsequently, the holotypes of the pustular species *Tremella fusispora* Bourd. et Galz. and *Epidochium albescens* Sacc. et Malbr. were examined and were found to represent the same species, but a species distinct from *Exidia rolleyi*. While basidial ontogeny and morphology in *Sebacina microbasidia* are similar to that observed in *Exidia rolleyi* and *Epidochium albescens*, it seems desirable, because of the differences in basidiocarp form, to exclude *Sebacina microbasidia* from the genus erected to include *Exidia*

Legends to Figures

Fig. 1. *Efibulobasidium albescens*. A,B. Portions of fertile hyphae with basidia at several stages of development (TAA 15852). C. Basidium (A. Galzin 4802). D,E. Basidia (Herb. mycol. P. A. Saccardo 175). F. Basidium (TAA 15852). G,H. Epibasidia (TAA 15852). I. Basidiospores (A. Galzin 4802). J. Basidiospores, two germinating by repetition (TAA 15852). K. Basidiospores (Herb. mycol. P. A. Saccardo 175). L. Dikaryophysis (TAA 15852).

Fig. 2. *Efibulobasidium rolleyi*. A-D. Portions of fertile hyphae with basidia at various stages of development (G. W. Martin 6395). E,F. Portions of fertile hyphae (G. W. Martin 4907). G. Dikaryophysis (G. W. Martin 4907). H. Basidiospores (G. W. Martin 6395). I. Basidiospore (G. W. Martin 490⁷₁).





Pers. ex St.-Am. and cannot be used for *Efibulobasidium*.

2. *Efibulobasidium rolleyi* (Olive) K. Wells, comb. nov.

Fig. 2

Exidia rolleyi Olive, Bull. Torrey bot. Club 85: 95. 1958.

Basidiocarps waxy gelatinous; arising as small pustules 0.1-3 mm in diam, becoming confluent in older specimens to form a continuous layer with abrupt margins; surface undulate, finely granulose; hyaline to pale amber; evanescent upon drying or forming a light to dark amber, vernicose layer; basidiocarps 80 μ to 2 mm in thickness; in pustules hyphae arising from a restricted region of the substrate, then expanding and forming a loosely interwoven and ascending layer of hyphae terminating in a hymenium of fertile hyphae and dikaryophyses, in continuous specimens ascending, interwoven layer continuous with a poorly defined basal layer that is very loosely attached to substrate, collapsed basidia scattered throughout ascending, interwoven layer; subhymenial hyphae without clamp connections, usually distinct, thin-walled, 1.5-3 μ in diam; hymenium distinct, with developing basidia in a zone 20-55 μ in section, covered by a layer of dikaryophyses 20-65 μ in depth; dikaryophyses usually abundant and distinct, branching, somewhat nodulose near apices, some segments curved, 1-1.5-3 μ in diam; fertile hyphae proliferating laterally from the apical region of sub-basidial segment, 1.5-2-3 μ in diam, without clamp connections; probasidia at first cylindrical, then becoming clavate, broadly fusiform or ampulliform, finally subglobose, oval, obovate, or clavate, forming

November 21, 1973

Dr. Richard K. Benjamin
Rancho Santa Ana Botanic Garden
Claremont, California 91711

Dear Dick:

The manuscript with your covering letter was postmarked November 9 but reached me only today. One reason for the delay was misdelivery to a colleague who has received my mail on other occasions in the past. Probably the best way to avoid this in the future is to include "Botany Department" in my address, in addition to "Mycological Herbarium". Another reason for the delay is that my accumulated mail for the past few days has just been delivered to me at my new, temporary headquarters, the Baton Rouge General Hospital, where I am recovering from the effects of a severe back sprain.

It is my feeling that if an author's work has, in his judgement, been unjustifiably criticised in a journal, that he should be permitted to publish a rejoinder of approximately equal length in the pages of that journal and that the editor(s) should make every effort to publish the response at the earliest opportunity. What is involved here is essentially the problem of freedom of expression and Mycologia's policy should be in conformity with those principles which assure all authors the greatest latitude of such freedom, subject only to normal restraints imposed by matters of style and form.

At the moment, since I cannot go through Dr. Geesteranus's paper critically, I must confine myself to my brief answer to your question. In passing, I assume the paper would appear as a "Brief Article"; consequently, the "Summary" would be deleted. The title might be simply: "A Response to Dr. K. A. Harrison".

Tentatively, I expect to be released within a few days but do not know when I'll be back at my desk.

Sincerely,

B. Lowy

BL/lbm

Gibraltar Onion Skin

MILLERS FALLS

MYCOLOGIA

OFFICIAL JOURNAL OF THE

MYCOLOGICAL SOCIETY OF AMERICA

PUBLISHED BY

THE NEW YORK BOTANICAL GARDEN

RICHARD K. BENJAMIN
Editor-in-Chief
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

CLARK T. ROGERSON
Managing Editor
The New York Botanical Garden
Bronx, New York 10458

9 Nov., 1973

Dr. B. Lowy
Mycological Herbarium
Louisiana State Univ.
Baton Rouge, La. 70830

Dear Bernie:

Along with the inclosed manuscript from Maas Geesteranus I am inclosing copies of the letters that I received from him regarding publication of the paper in Mycologia. I already have contacted Clark Rogerson about it and he favors considering the work without requiring Maas Geesteranus to join the Society. In my reply to the author I assured him of essentially the same, but with the approval of a majority of the Editorial Board.

What is your feeling in the matter?

Best regards,

Sincerely,

Dick

R. K. Benjamin

Received at Baton Rouge Gen. Hosp. 19-XI-'73,

Returned with Davis's help; 20-XI-'73,

13 Aug., 1973

Dear Bernie:

Your brief article on *Amanita muscaria* and the thunderbold legend in Guatemala and Mexico arrived on Aug. 4 while I was out of town. I'll try to get the work in the Nov.-Dec. issue, but I expect proof on this any time. In fact I already have shipped off the Jan-Feb., 1974, issue--a month ago in fact.

Glad to know you are back and ready to go on mss! Hope you had a good trip.

Sincerely,

Dick
R. K. Benjamin

B. Lowy
Ed. Board

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 19 March, 1973
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for Mycologia?
Distribution of Epichloë typhina (Ascomycetes) and its parasitic fly.

by Jan and Erika Kohlmeyer.

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil only. Kindly return the paper with your comments promptly.

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Dick

Richard K. Benjamin
Editor

Received for review: 23-III-1973.

Distribution of Epichloë typhina (Ascomycetes)
and its parasitic fly.

Jan and Erika Kohlmeyer

University of North Carolina, Institute of Marine Sciences,
Morehead City, N. C. 28557

Summary

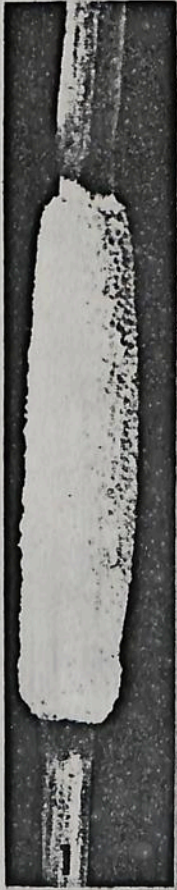
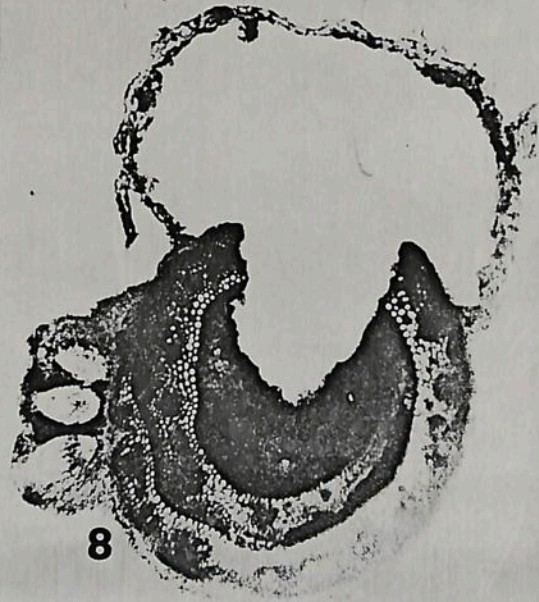
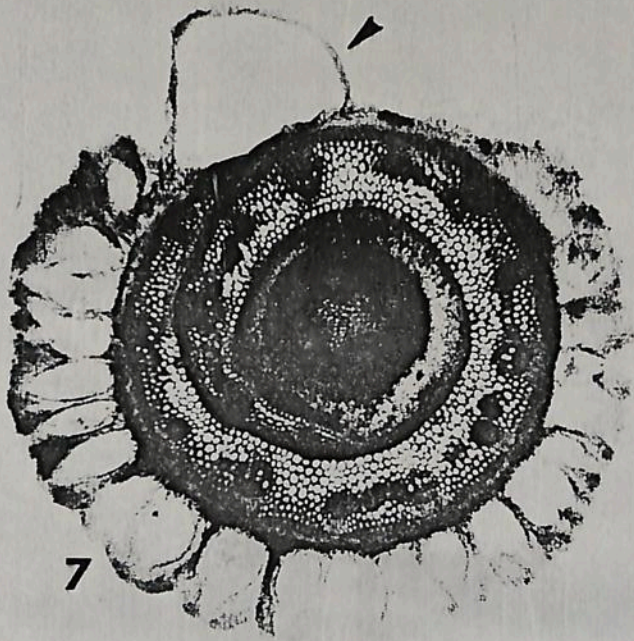
Caps/

Fresh and dried stromata of Epichloë typhina, cause of choke disease of grasses, were examined for infections by a host-specific fly, Phorbia phrenione. Over 35 percent of 4,685 stromata from 17 countries growing on about 50 species of grass were parasitized by the fly. The insect does not depend on a particular grass species, but it occurs wherever the fungus is found. The distribution of E. typhina with P. phrenione appears to be restricted to the northern hemisphere and ranges from East Asia, throughout Europe to North and partly to Central America. The discovery of parasitized stromata in E. cinerea indicates that similar parasitic relationships may exist between other members of the genus Epichloë and insects. The life cycles of E. typhina and the hyperparasitic fly are briefly described.

Introduction

Caps/

Most mushrooms and toadstools are attacked and devoured by insects, but Ascomycetes are rare among the hosts (Eisfelder 1954; 1955a,b; 1956; 1957a,b; 1960; 1961; 1963; 1970). From more than 27,000 fruiting bodies of macromycetes examined, Eisfelder (1955b, 1956, 1963) lists only one Ascomycete species with parasitic insects, viz. Morchella esculenta Pers. ex St. Amans. Hingley (1971) reported on animals inhabiting a second Ascomycete, viz. Daldinia concentrica (Bolton ex Fr.) Ces. & de Not. The well-known Epichloë typhina (Pers.) Tul., which is responsible for choke disease of grasses is frequently collected and well represented in herbaria. However, the obligate association of a hyperparasitic



Comments on Jan and Erica Kohlmeyer's paper.

- p.1,1.1 - "(Ascomycetes)" is superfluous.
- p.1,1.7-8 - Epichloë typhina is said to include Central America in its distribution but neither the map nor the table supports this. Mexico City is in the list and shown on the map but this is still part of North America. Consequently, the last phrase in the fourth sentence of the summary should be modified to read: "...throughout Europe and North America including Mexico."
- p.1, Introduction 1.1 - "Most mushrooms and toadstools..." is an expression almost universally used in publications written for non-technical readers. Its use in a paper addressed to members of the profession is perhaps not quite appropriate. Possibly "fleshy fungi" would be more acceptable here.
- p.2, par.2 - "...all parts of infected grasses..." Are roots included? If not, this should be indicated.
- p.3,1.6 and p.4,1.3 - instead of "enemies" would "predators" be preferable here?
- p.3,1.10 - "...the taste of the fungus is the primary stimulus..." Is this undoubtedly known? What experimental evidence is there for this statement?
- p.3,1.9 from bottom - "The animal leaves the protective cover of the egg shell for short feeding excursions..." This is unclear. Is the brood chamber being referred to as the "egg shell"?
- p.3,1.5 from bottom - "The egg shell always remains on top of the larval shield..." Is the "larval shield" the oblong cover of the brood chamber?
- p.5, par.2,1.5 - "Central America" should be changed to "Mexico."

BC

B. Lowy
Ed. Board

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 22 Jan., 1973
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Also am inclosing a letter. I have not answered this.

Would you be willing to review the enclosed manuscript for Mycologia?
Aquatic Fungi of Iceland: Some polycentric species.
by T. W. Johnson, Jr.

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil only. Kindly return the paper with your comments promptly.

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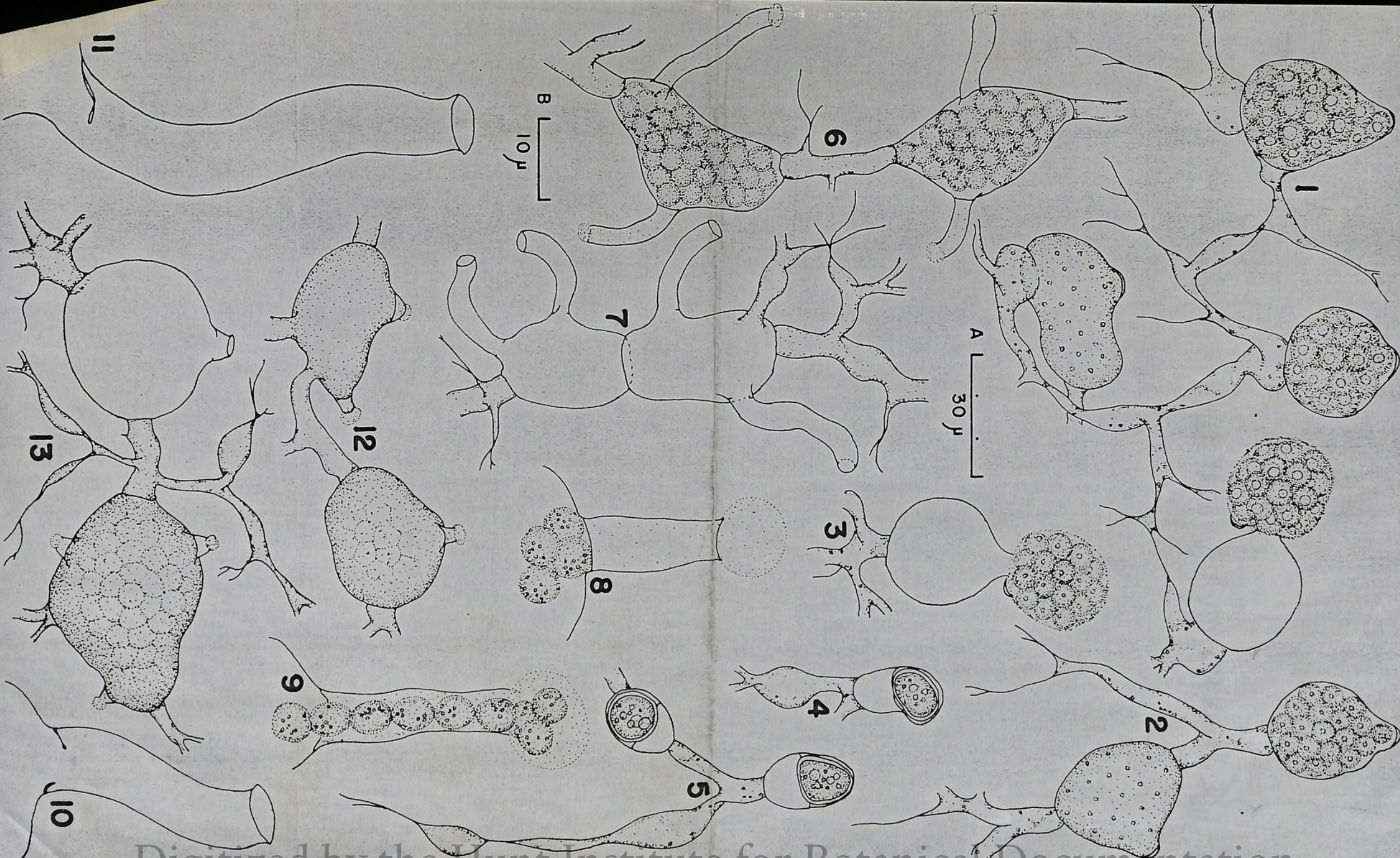
Richard K. Benjamin
Editor

ms returned with corrections

30-I-73

Fig. 1. Nowakowskiella elegans. Portion of thallus; one sporangium showing operculate discharge. Figs. 2-5. Nowakowskiella hemisphaerospora. 2. Portion of thallus; upper sporangium prior to discharge. 3. Operculate discharge. 4,5. Portions of thallus with resting spores. Figs. 6-11. Catenomyces persicinus. 6. Portion of thallus showing two sporangia with endogenously formed spores prior to discharge; long discharge tubes containing mucilaginous material. 7. Discharged sporangia. 8. Upper portion of sporangium showing mucilaginous plug. 9. Planont discharge; spores emerging into mucilaginous plug at orifice. 10. Poroid remnant of membrane at base of discharge tube. 11. Flap-like remnant of membrane at base of discharge tube. Figs. 12,13. Catenomyces persicinus, a form with papilla-like discharge tubes. Portion of thallus showing sporangia. Figs. 8-11, scale B; others, scale A.

Johnson, T. W. Aquatic fungi from Iceland - Some polycentric species
 [Dept. Botany, Duke Univ. for review mycologia. Jan. 1973.]



MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711

8 May, 1973

Dear Bernie:

Would you be willing to review the enclosed manuscript for Mycologia?
Pisolithus in central Florida.

by S. A. Lampky and J. R. Lampky

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil only. Kindly return the paper with your comments promptly.

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Richard K. Benjamin
Editor

CONODONTOPHYTA CHATTANOOGAE, A
NON-PETRIFIED FOSSIL PLANT FROM
CHATTANOOGA SHALE

By Felton R. Nease

ABSTRACT

This report deals with the structure and relationship of a small, aquatic, floating, vascular plant to which the binomial *Conodontophyta chattanoogae* is applied. It occurs in Chattanooga Shale, an Upper Devonian formation, and was collected in western Tennessee. The stem of this plant is entire on one margin and dentate on the other and has a highly mineralized midrib bearing tooth-like processes that project toward the dentate edge. The vascular basal leaves are photosynthetic and may serve as floating mechanisms. The small upper leaves overlap in a pattern similar to that of sporophylls of a strobilus. The plant is heterosporous, with sporangia arising in the stem. The cuticular surface of all parts of this taxon have similar markings. Toothed conodonts are shown herein to be the mineralized mechanical midrib tissue of plants identified as *Conodontophyta*. This genus is more primitive than any known kinds of terrestrial, vascular plants and is affirmed to be the type of a new Division, the *Crossophyta*.

INTRODUCTION

Conodontophyta chattanoogae gen. nov. et sp. nov. Plantae fossiles non-petrificatae sunt sed fluxito-aquaticae erant. Plantae minimae usque 20 mm longae; caules plani cum margine leve atque margine opposita dentata profunde; folia basales orbiculares, 4-5 μ diam. photosynthetica et folia supera 1-2 μ longa, conchiformia, imbricata, non-photosynthetica; stomata nulla sed caules et folia cum poris. Pseudosporangia heterosporica oriens intra caules; macrosporangia spherica, monosporifera; macrospora circa 300 μ diam; microsporangia plurisporifera; microspora circa 45 μ diam.

Conodontophyta generitypus *Divisionis* novae, *Crossophyta* est.

Hab. intra strata petrae Chattanoogae, Savannah, Tennessee.

To date, as a result of many investigations, it has been learned that plants or parts of plants may be preserved for long periods either as mineralized (petrified) or as non-mineralized fossils. For several years (1967, 1968) we have been concerned with fossilized remains of the latter kind occurring in buried organic deposits in the Coastal Plain of North Carolina. The radiocarbon dates of these deposits show a range in age of 15,000 years to more than 35,000 years B. P. The fossils found have been identified as fungal spores, algae, mosses, pollen, herbaceous seeds and leaves, and wood of several species of trees, many of which are elements of the contemporary flora of this region.

The present study is also concerned with non-mineralized remains, but deals specifically with a peculiar plant from Chattanooga Shale. This formation belongs to the Upper Devonian, approximately 400 million years old. The remains of this plant, present on the bedding planes of the shale, are well preserved. Its structural features, as described herein, show that this taxon is distinct from any known living or extinct kinds of plants. The extensive mat

production by these aquatic plants is believed to account for much of the carbonaceous material found in Chattanooga Shale.

ACKNOWLEDGMENTS

The name *Crossophyta* is given to a new Division of lower vascular plants in honor of George L. Cross, eminent botanist and President Emeritus of the University of Oklahoma. My heartfelt gratitude is extended to him, my esteemed mentor. For helpful suggestions, I thank J. Edison Adams, botanist, and Walter Wheeler, geologist, of the University of North Carolina. I am also very grateful to the National Science Foundation for financial assistance provided by Grant GE 2684.

Type materials have been deposited among the botanical collections of the Smithsonian Institution, Washington, D. C.

MATERIALS AND METHODS

The shale used in this study consisted of two ample collections, one made in June, 1964, and the other about a year later. The strata had been exposed in making a road cut for a highway leading east of Savannah, Tennessee. The collections consisted of two types of material, one fine-grained and carbonaceous, the other grayish-black with rather thin laminations. The lamina could be separated by prying them apart with a dissecting needle, or by blows to cause breakage, thus exposing the surfaces of the bedding planes. The freshly exposed surfaces could then be examined with a B. & L., 0-30 Zoom widefield microscope. By doing so, objects present that had a width in excess of 100 μ could be located readily and could be removed from the matrix by use of a sharp-pointed dissecting needle. Then if the needle tip is dipped in balsam and brought in contact with the freed objects, they could be picked up and transferred to a drop of balsam on a microscope slide. The amount of shale adhering to the fossils depended on the care used in their removal. By this technique pieces of plants, including sporangia, macrospores and gametophytes were removed virtually intact and free from chips or particles of shale. This procedure for isolating micro fossils for examination is unlike that which is usually employed for mineralized fossils. It avoids losses that might result from grinding or abrasion to make thin sections, and prevents destruction that might be caused by treatment of the fossils with strong acids or alkalis.

MORPHOLOGY

Although *Conodontophyta* is a small aquatic, mat-forming plant that probably does not exceed a length of 20 mm, intact entire plants have not been seen. Abundant fragments have been observed, however, after removal from the cleaved surface of shale. By arranging these fragments a reconstruction can be made of the mature plant, Fig. 1. The plant lacks organs of attachment, and possesses a peculiar leafy stem within which sporangia (pseudosporangia) are borne.

Stem - The stem is ribbon-like, highly photosynthetic, with one margin that is entire, the other dentate, and pores rather than stomata provided for gaseous exchange. The most unique feature of the stem, Fig. 2, is the presence of a highly mineralized midrib-like structure which is believed to constitute the mechanical tissue, Fig. 3,4,5. This midrib has a dozen or more tooth-like

LOUISBURG COLLEGE JOURNAL
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3: 10-23, 1969.
(15 figs.)

B. Lowy
Ed. Board

MYCOLOGIA

Office of the Editor
Rancho Santa Ana Botanic Garden 11 Apr., 1973
1500 North College Avenue
Claremont, California 91711

Dear Bernie:

Would you be willing to review the enclosed manuscript for Mycologia?
Fungal evidence of continental drift.

by Felton R. Nease and F. A. Wolf

If so, please prepare two copies of your criticisms, one an unsigned carbon that can be sent to the author (reviewers who prefer not to remain anonymous may sign both copies of their appraisal). Minor corrections and suggestions may be placed directly on the manuscript using a soft lead pencil only. Kindly return the paper with your comments promptly.

The following points should be considered.

1. Is the material new and worthy of publication in Mycologia?
2. Is the presentation clear and logical?
3. Are the conclusions justified by the evidence?
4. Could the paper be shortened substantially without interfering with its value?
5. Have the tables been prepared as clearly and concisely as possible?
6. Are the illustrations adequate? Excessive? Properly grouped? Properly explained? Worthy of publication?

Any other comments or criticisms will be appreciated. Should you anticipate not being able to review this paper within two or three weeks, or if you prefer not to review it at all, please return the manuscript without delay so that it can be sent to another reviewer. Many thanks.

Fungal remains in Chattanooga shale OK--but evidence for continental drift--WOW!

Sincerely,

Dick

Richard K. Benjamin
Editor

Comments on "Fungal evidence of continental drift" by F.R. Nease
and F.A. Wolf.

The last three sentences in the "summary" (bottom of p. 1) need special comment. "The parts consist of hyphae, spores and ascocarps." Hyphae, if present, should certainly be shown. Without such demonstration, the interpretation of the figures remains very much in doubt.

The conclusion (p.2, 1.3) that "fungi therefore may be regarded plausibly as additional evidence of the occurrence of continental drift," because (p.2, 1.1) "these fungi resemble some of the species presently in soils of the several continents," is quite unwarranted if based only on the kind of "evidence" presented. Even assuming that the figures represent fungi, their distribution on different continents might just as "plausibly" be due to other factors, including their being air-borne as mentioned on p.5.

p.4, 1.3 - The sentence beginning "It may well be..." draws an erroneous conclusion. The presence of fungi (or anything else) "in sediment of that age" can only justify the conclusion, if sufficiently documented, that the remains are ancient. This alone is insufficient to support the broad assumption that continental drift took place.

p.4, 1.4 from bottom - "...black nodules" are referred to. Why are they not shown? They are said to contain "hundreds of black spores." Are these "spores" all either "boat-shaped" or spherical? Identifying the "boat-shaped" objects as "Ustilina-like" does not prove that they are fungal spores. The single, spherical object (fig. 7), is incredibly identified without qualification as Aspergillus ! Why might this ^{not} just as cogently be claimed to represent a conidium of Penicillium or Verticillium or Monilia or even a pollen grain - or none of these? This kind of "identification" shows extreme carelessness.

p.6, last par. - The authors say "...it is quite impossible to identify the fungi.." (in spite of the fact that they have done so in the legends to the figures). In the previous paragraph, qualifiers are correctly used: "presumed"- "appear" - "resemble" but ~~these~~ ^{these} are discarded in the legend to the figures. The phrase beginning "...it must be admitted..." cannot be admitted because it is based upon assumption, not evidence. This is not to say that continental drift has not occurred or is not occurring, but this conclusion cannot be drawn from the "evidence" presented in this paper.

Figure 8 is likewise unhesitatingly referred to as representing the cells of the "cleistothecial walls of Microascus". This "determination" is securely made without other supporting evidence.

In my judgement, this paper falls far short of providing "fungal evidence of continental drift" and reaches unwarranted conclusions regarding the identification of fungus-like structures found in the Chattanooga shale examined. I consider the paper to be unacceptable for publication in "Mycologia."

RL

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Fungal evidence of continental drift

Felton R. Nease, Louisburg College, Louisburg, N.C. and
Frederick A. Wolf, Duke University, Durham, N.C.

Summary

According to Wegener (1912), about 200 million years ago the once unitary land mass that he named Pangea, became fragmented into the several continents. Subsequently these continents have continued to drift.

The present account deals with the occurrence of fungal remains in Chattanooga shale. This shale consists of two materials, shale and the highly carbonized remains of a floating, aquatic, green plant, Conodonophyta chattanoogae, that now is an extinct, nonpetrified fossil. The remains of this fossil became compressed between layers of fine-grained shale. When a piece of shale is struck with a hammer it breaks apart at the bedding planes and thus exposes fossilized Conodontophyta tissues. By examination with a dissecting microscope, the fungal remains may be seen to occupy the Conodontophyta tissues. Fragments of the carbonized tissues are filled with hyphae and also with dark fungal nodules. When these nodules are removed with a dissecting needle tipped with Canada balsam and are mounted on a microscopic^e slide, and pressure is applied to the cover-glass, the nodules break apart. The parts consist of hyphae,

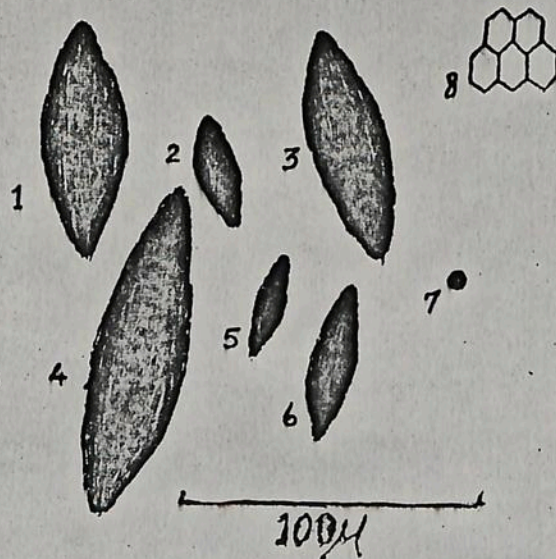
spores, and ascocarps. These fungi resemble some of the species presently in soils of the several continents. Fungi therefore may be regarded plausibly as additional evidence of the occurrence of continental drift.

Introduction

In 1912, Alfred Wegener (1912, 1924), a meteorologist, concluded that the American continents once were joined to Europe and Africa. He suggested that the supercontinental land mass be called Pangea, and it was his opinion that it became fragmented into the present-day continents some 200 million years ago. He claimed that these continents slowly drifted apart and still are continuing to do so. In his opinion, the continents never have been immobile. But the concept of shifting of position by entire continents was so revolutionary that it provoked heated controversy especially among palaeontologists and geologists with the result that it soon was discarded by these scientists as being quite incredible. Within the past two decades, however, investigators have become intensely interested in continental mobility and numerous reports and books dealing with continental drift have been published. The most startling perhaps of these reports is that by Pawley and Abrahamsen (1973) in which they point out that the great pyramid Giza has become aligned four minutes west of north. This shift in orientation plausibly

Explanation of figures

Fungal remains from Chattanooga shale. Figs. 1-7 drawn to scale. Fig. 8 diagrammatic. Figs. 1-6 boat-shaped ascospores, Ustulina-like. Fig. 7, conidium of Aspergillus. Fig. 8, diagram (not drawn to scale) of hexagonal cells 2 μ in diameter from cleistothecial walls of Microascus.



LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE

BATON ROUGE · LOUISIANA · 70803

College of Arts and Sciences

DEPARTMENT OF BOTANY

17-IV-1973.

Dear Dick,

I can't imagine why Wolf allowed himself to be sucked into this thing!

I plan to leave for Guatemala-Honduras about the 1st week of June - and not to return until absolutely necessary - which means about mid-August. If you want to send me a few additional papers to work on, please do so before May 21.

Yours,

Barnes

The following are partial corrections and comments on G.Guzmán's paper "Some pattern of distribution between Mexican and United States mycofloras."

p. 1, title: the plural "patterns" is ^{needed} ~~better~~ here.

p. 1 - : Dashes at the ends of lines on this page and throughout the paper, except where they are used to divide words, should be deleted.

p. 1, 1.6 : "...has relationships with ..." The meaning intended regarding the mycoflora might better be expressed by the phrase: has its counterparts in or is related to.

p. 2, first sentence: sentence structure must be changed to read: "... in the north-western or eastern regions of N.A. etc."

p. 2 : Delete the subheading "Species Considered."

p. 2-3 : The need for listing the families here is questionable since they are given throughout plate 1 (under "species").

p.3, 1.7 : "vegetation" is superfluous; also same line "purpose" = reason ?

p. 3, par.2: The meaning of the last sentence is obscure. 1. 8 from bottom reads in part: "...this type of vegetation..." Does "this" refer to coniferous & tropical forests or to deciduous forests ? The last few words of this paragraph should ^{as is} be further clarified.

The geographical areas of Mexican deciduous forests are briefly indicated ^{in the text} but are not shown on the map (fig. 1, p. 30), although these are fairly extensive.

p.4, 1. 2 : "both" is superfluous.

Although the four relationships described are the most conspicuous ones there are others to which attention might be drawn. For example, from the tables ("plate 1") it is evident that a few species of fungi found in the tropical forests of Mexico are also found in the coniferous or deciduous forests of the U.S. This might be just as "interesting" as the other observations pointed out.

The listings on pp 4-6 of "some important examples of these four relationships" is repetitious, since these are all shown on Plate 1. The same information might be shown more economically by indicating a code number (1 - 4 corresponding to each "relationship") beside each species in the list. ie (1) Helvella crispa etc.

An unanswered question (or only partially answered): In what way(s) are some of the species more "important" (p. 4, last par.) than others ?

For example, Peziza badia, included under the "first relationship" on p. 11 is excluded from the corresponding list on p. 4. Does this mean that it is less important than Sarcosoma mexicana which also belongs to the same group ?

- p. 6, par.2 : "...the first and second are the most important." This does not necessarily follow from the data. These may be the most common or predominant relationships, but presumably this is only a preliminary study and with additional data other equally important conclusions might be reached.
- p. 6-7 : Synonyms could more conveniently be given in the list (Plate 1). As it stands it is cumbersome and wasteful of space.
- p. 7 : The "summary" belongs elsewhere if it is to conform to "Mycologia" format; also the "Literature cited" (pp. 9-10) which I have partially corrected to make it conform to "Mycologia" usage.
- p. 8 : Under "Acknowledgements" the Guggenheim Foundation is credited with doing something it surely has never done; "... summarizing of this work." The third "sentence" is not a sentence. This paragraph needs to be rewritten. Only the minor errors are indicated.
- p. 9 : I wonder about the propriety of citing McKenny and Stuntz's "The savory wild mushroom." This is essentially a book for the tyro and though I do not doubt that it is useful to the mushroom hunter, other more professional works might have been consulted, including those by Smith & Thiers on Boletes, Snell & Dick or Smith's "Mushroom hunter's field guide," which also includes west coast distribution.
- p. 10, bottom : Fig. 1 legend is repeated on p. 30. This may be OK but should appear on a separate page.
- pp. 11 - 24 : "Plate 1" = Table 1 (also "plates" 2 - 4)
Throughout this list it would be an advantage (easier reference) to alphabetize the species in each family. I have corrected some misspellings etc.
- p. 27 : Auricularia delicata has been reported from Florida. (Mycologia 44: 666.)

General comment

The author obviously has something to offer that is worthy of attention but it is not always presented as well as it might be. In places there is a conspicuous lack of clarity and some parts must be rewritten. Although many of the criticisms are minor ones and easily corrected (misspellings etc.) others (sentence structure, style) can not so easily be dealt with. Overall, I believe that the paper in its present form is unacceptable for "Mycologia."

30pp

SOME PATTERN_^ OF DISTRIBUTION BETWEEN
MEXICAN AND UNITED STATES MYCOFLORAS

by Gastón Guzmán
Laboratorio de Micología
Departamento de Botánica
Escuela Nacional de Ciencias Biológicas
Instituto Politécnico Nacional
México, D. F.

Through three trips made by the author to the United States, one to Michigan in 1965, _^ other to Washington and Oregon in 1969 and the latest to Louisiana, Mississippi and Alabama in 1971, he had observed several species of higher fungi which grow both in the United States and Mexico. It was interesting to find that the mycoflora of eastern United States has relationships with the tropical and subtropical forests of Mexico and that the mycoflora of northwestern United States has relationships with the coniferous forests of the higher lands of Mexico.

Sharp (1948) observed that some species of fungi of the subtropical regions of Mexico are common in the eastern United States. He found some species, such as Polyporus sanguineus, P. pinsitus and P. australis, which are tropical and he thought that perhaps the eastern United States could be the northern ~~most~~ limit of their distribution. Welden and Lemke (1961) studied the distribution of some

Mexican species of Thelephoraceae and Polyporaceae in North America. They found that most of them are common in northwestern or in eastern of North America and a few are common in the Caribbean region. They observed that Polyporus abietinus, Fomes roseus, Lenzites saepiaria and Poria taxicola are common in the coniferous forests of North America, but Polyporus sanguineus, P. pinsitus, P. hydnooides, P. licnoides, P. feei, Favolus rhipidium and Daedalea elegans are tropical species common in the southeastern United States.

SPECIES CONSIDERED

The present paper is based on those Mexican species collected by the author both in eastern and northwestern United States and on those Mexican species studied in North American Herbaria (NY, BPI, MICH, OSC and UC). Some 230 species were studied, and they belong to the families Geoglossaceae, Clavicipitaceae, Pezizaceae, Helvellaceae and Xylariaceae, of the Ascomycetes; and Tremellaceae, Hydnaceae, Clavariaceae, Cantharellaceae, Thelephoraceae, Meruliaceae, Polyporaceae, Hygrophoraceae, Tricholomataceae, Amanitaceae, Agaricaceae, Coprinaceae, Strophariaceae, Paxillaceae, Rhodophyllaceae, Crepidotaceae, Cortinariaceae, Gomphidiaceae, Russulaceae, Boletaceae, Lycoperdaceae, Sclerodermataceae, Geastraceae, Astraeaceae, Mesophelliaceae, Calostomatacae and Nidulariaceae, of the Basidiomy-

cetes. Some records of North American distribution were taken from Mckenny and Stunz (1967), Murrill (1912)^{a, b}, Kauffman (1918) and Smith (1949).

In order to understand the distribution of the fungi considered in this work, both in the United States and in Mexico, it was thought - convenient to relate it to the distribution of some types of vascular -- plants vegetation with which the fungi are associated. For this purpose the only types of vegetation considered in the United States are the deciduous forest of the eastern region and the coniferous forests of the western region. These same types of vegetation were taken into account in the case of Mexico, besides the tropical forests. The deciduous forests of Mexico, represented by a narrow broken band at an altitude of 1000 to 2000 m in the slopes of the mountain ranges running along both coasts, are situated between the regions of coniferous forests and tropical forests, and in some places this type of vegetation is represented by other kind of mesophytic forests.

The distribution of more than 150 of the 230 species of fungi common to the United States and Mexico, comparing them through the procedure mentioned above, it was found that some of the species are common in the coniferous forests of both countries (plate 1). On the - *Others in the deciduous forests of both countries too.* other hand, some species of fungi from the deciduous forests of the - United States are common in the coniferous forests of central Mexico

and others are common in the tropical forests of Mexico. These observations established the four following relationships between both the United States and Mexican mycofloras:

- 1) Coniferous forests of northwestern United States with coniferous forests of Mexico, mainly in its northern parts.
- 2) Deciduous forests of eastern United States with deciduous forests of Mexico, mainly along the coast of Gulf of Mexico.
- 3) Deciduous forests of eastern United States with tropical forests of Mexico.
- 4) Deciduous forests of eastern United States with coniferous forests of central Mexico.

Some important examples of these four relationships are:

For the first relationship: Sarcosoma mexicana, Macropodia macropus, Helvella crispa, H. lacunosa, Gyromitra infula, Phlogiotis helvelloides, Hericium coralloides, Hydnum imbricatum, Clavariadelphus truncatus, Gomphus floccosus, Fomes pinicola, Spongipellis bo--realis, Polyporus schweinitzii, Cryptoporus volvatus, Tricholomopsis rutilans, Collybia butyracea, Amanita muscaria ssp. flavivolvata, A. pantherina, Clitocybe gibba, Agaricus augustus, Phaeocollybia kauffma-

nii, Gomphidius rutilus, Lactarius scrobiculatus, Naematoloma cap-
noides, Pholiota carbonaria, Scleroderma hypogaeum, Radiigera atro-
gleba and R. fuscogleba.

For the second relationship: Hydnum repandum, Craterellus
cornucopioides, Strobilomyces floccopus, Ganoderma applanatum, Favo-
lus rhipidium, Hydnopolyporus palmatus, Polyporus elegans, P. umbe--
llatus, Lenzites betulina, Tricholomopsis platyphylla, Oudemansiella -
radicata, Amanita bisporigera, A. magnivelaris, A. chlorinosma, A.
muscaria ssp. americana, A. brunnescens, Psilocybe caerulescens, -
P. caerulipes, Rhodophyllus abortivus, Lactarius indigo, Scleroderma
verrucosum, S. texense and Calostoma cinnabarina.

For the third relationship: Xylospheera polymorpha, Daldi-
nea concentrica, Cotylidia diaphana, Daedalea elegans, Ganoderma cur-
tisii, Favolus brasiliensis, Polyporus sanguineus, P. villosus, Schizo--
phyllum commune, Panus rudis, Volvariella bombycina, Pleurotus ostrea-
tus and Panaeolus antillarum. These species are frequently found in
the tropical and subtropical forests of the Florida and Mississippi region,
and in the deciduous forests of eastern United States.

For the fourth relationships: Suillus brevipes, Ganoderma --
tsugae, Amanita fulva, A. inaurata, Crepidotus mollis, Lactarius deli--
ciosus, Russula brevipes, R. alutaceae, Pholiota squarrosa, P. albocre-
nulata, Lycoperdon perlatum, Scleroderma areolatum, S. citrinum, Geas-

trum triplex and Crucibulum laeve.

In addition to these four relationships, there are some species known only from forests of the United States or from forests of Mexico, as is shown in plates 2 and 3. There are other species apparently -- common everywhere, observed both in the United States and Mexico -- (plate 4); most of them are coprophilous species, such as Cyathus, Coprinus, Panaeolus, Stropharia and Psilocybe species, and others are common in meadows or along the roadsides. Some of them such as -- Collybia dryophila, Armillariella mellea, Xeromphalina tenuipes, Mycena pura, Stereum ostrea, and Pseudohydnum gelatinosum are common in different kinds of vegetation, from tropical to cold forests.

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~~Out~~ the four types of relationships between the mycofloras of the United States and Mexico, the first and the second are the most important. It seems evident that the higher mountain ranges with coniferous forests in North America, both in the United States and Mexico, are a route of dispersal for several species of higher fungi. The same kind of relationship is strongly established between the deciduous and mesophytic forests of Mexico and the deciduous forests of eastern United States. But, due to the presence of tropical species of fungi in the deciduous forests both in United States and Mexico, it is concluded that this mycoflora has a very interesting ^{and important} relationship with the tropical vegetation.

In regard to the synonyms of the fungi here considered, Sar-

cosphaera eximia, Hericium coralloides, Polyporus sanguineus, P. villosus, Daedalea elegans, Favolus brasiliensis, Clitocybe gibba, -- Panaeolus antillarum, Scleroderma cepa, S. areolatum, and S. citrinum are considered the same, respectively as Sarcosphaera coronaria (Jacq. ex Cooke) Boud., Hericium caput-ursi (Fr.) Corner, Polyporus cinnabarinus Jacq. ex Fr., P. pinsitus Fr., Daedalea ambigua Pers., Favolus alveolaris (DC. ex Fr.) Quéf., Clitocybe infundibuliformis (Berk.) Sing., Scleroderma flavidum E. & E., S. lycoperdoides Schw. and S. aurantium Pers.

Anellaria sapulehralis (Berk.) Sing.

SUMMARY

h/ The relationships among more than 170 species of higher fungi of eastern and western United States and Mexico is discussed. Four types of relationships between both mycofloras are established:

- 1) species in the coniferous forests of northwestern United States with those of coniferous forests of Mexico, mainly in its northern parts;
- 2) species in the deciduous forests of eastern United States with those of the deciduous forests of Mexico, mainly along the coast of the Gulf of Mexico;
- 3) species in the deciduous forests of eastern United States with those of tropical forests of Mexico, and
- 4) species in the deciduous forests of eastern United States with those of the coniferous forests of

central Mexico. The first two relationships seem the most important.

1/e

ACKNOWLEDGMENTS

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The author wishes to express his thanks to Dr. Guillermo Massieu, of the Instituto Politécnico Nacional for supporting in part the trips to [^]United States. He express [^]his thanks to the John Simon Guggenheim Memorial Foundation for support of the fourth trip and the summarizing of this work. His indebtedness to the Department of Scientific Affairs of Pan American Union for a grant to support his first trip. Thanks are also given to Directors and Curators of the Herbaria mentioned in this paper, for the facilities given to the author. Thanks, too, are expressed to Dr. Alexander H. Smith, Dr. James M. Trappe, Dr. William C. Denison, Dr. Arthur L. Welden, Dr. J. Rzedowski and Prof. Antonio Hernández Corzo for their encouragement and useful criticisms. Dr. A. H. Smith through the University of Michigan gave to the author important affair during his stays in that University. This paper was presented ~~in~~ the 1st, International Mycological Congress, in Exeter (England), September, 1971.

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Fig. 1 Relationships between the mycofloras of eastern and western
United States and Mexico. 1: Coniferous forests; 2: Deciduous
forests; 3: Tropical forests.

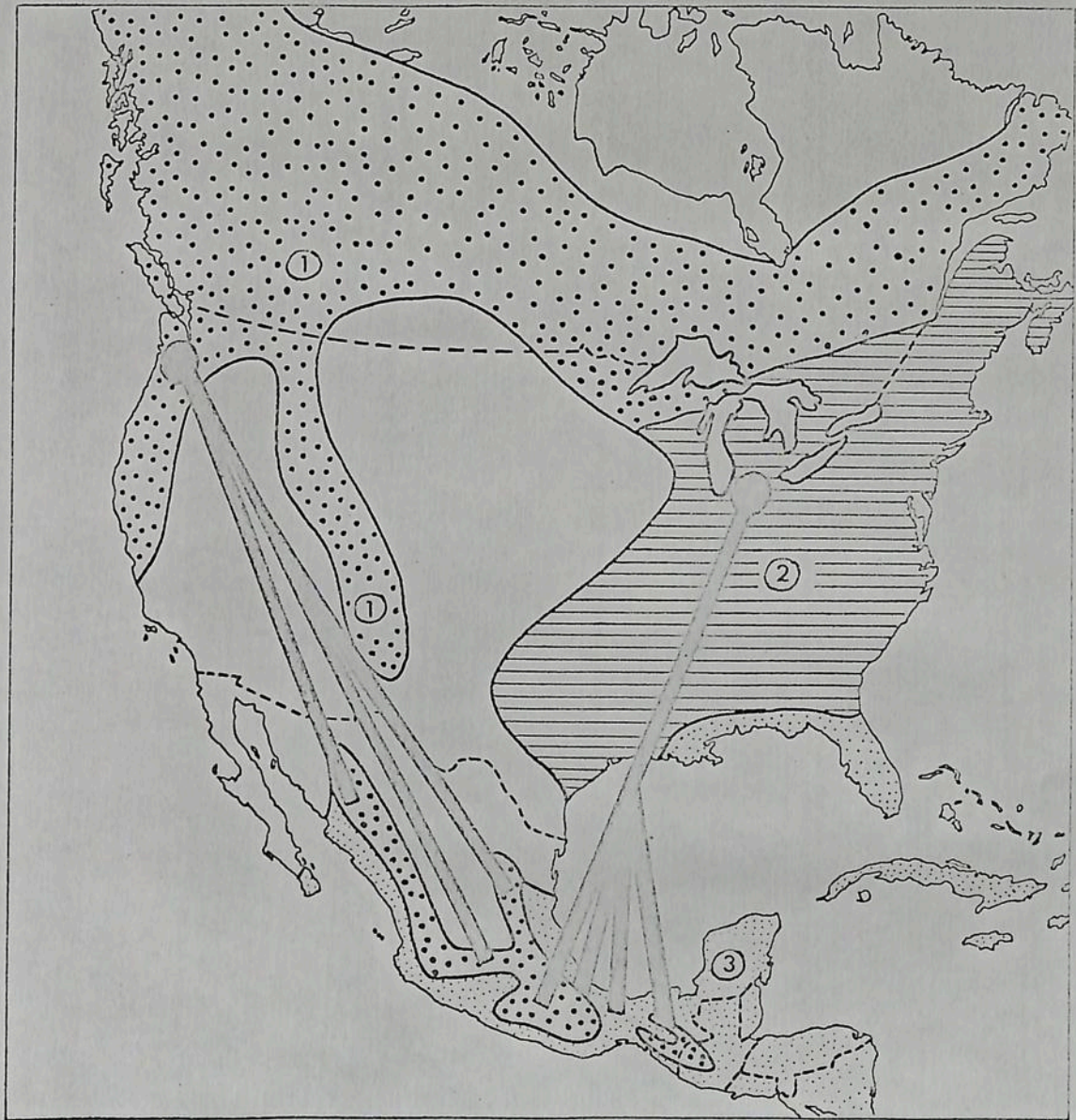


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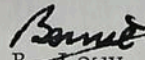
19-IV-1972

Dear Ben:

I am glad to know that you plan to include my brief article in the July-August issue of "Mycologia." This simplifies matters considerably. Muchas gracias !

As to serving on the editorial board of "Mycologia" for the period 1973-77, I gladly accept your kind invitation. Although this is surely an honorable position, I hope it will not be entirely honorific. Perhaps my immediate reaction may be attributed to the "new broom" syndrome, but I am sure this is likely to change after the first few months ... or manuscripts. I had a similar experience last year when I was appointed Consulting Editor of the new journal "Revista Interamericana," published by the Inter American University of Puerto Rico. In any case, I stand ready to assist you to the best of my ability.

With kindest regards, as always,


B. Lowy

20 Apr., 1972

Dear Bernie:

I am happy that you are willing to serve on the editorial board of Mycologia, and I shall submit your name to the Council at the Aug. meetings as my choice to replace Cummins.

With best wishes,

Sincerely,

Ben

R. K. Benjamin

17 Apr., 1972

Dear Bernie:

Thanks for your letter and the correction. You were correct in returning your galley to Clark. I also get a set of galleys which I read against my duplicate copies of the mss. I found the same errors, and no more, that you did.

Have noted your address from 20 June-20 Dec., 1972. You will be getting proof on your brief article any time, for it is to appear in the same issue of Mycologia as the work on Maya Codices--July-Aug.

I have a question. Would you consider serving on the editorial board of Mycologia for the period 1973-1977 inclusive? Geo. Cummins' term ends this year and I am sure he will not want to be reappointed. I do not work members of the Ed. Board very hard. And your trip to Peru this year would be no problem, nor would shorter trips later on. Please think about it.

Ben

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13 - V - 1972

Dear Ben,

Many thanks for your thoughtfulness -
and for your eagle eye! But I thought
I had made that change in the galley
which I corrected and inadvertently returned
to Clark instead of to you!

May I ask another favor of you? By
the time galley is ready on my big article reporting
"A n.s.p. of Arachnoidia", I shall almost certainly
not be here (I 2nd or 3rd week of June). Would
you please read and correct proof for me? If
it is sent to me in Perm there might be
unnecessary and/or unavoidable delay. Just in
case, however, I am attaching the following temporary

address, which I think you already have,
anyway, & because I placed it on the list

Kindly note: From about 20 June to 20 December
1972 I shall be on sabbatical
leave. My temporary address:
c/o Dr. Eduardo F. Indacochea,
Comision Fulbright, Maximo
Abril 599, Lima, Peru.

report sent to you, or should have.

Saludos

Bernie