

## **A selection of bibliography on the biodiversity and phytopathology of African fungi (– 1994)**

Jean MOUCHACCA

*Département de Systématique & Evolution  
(Laboratoire de Cryptogamie),  
Muséum National d'Histoire Naturelle,  
12, rue Buffon, 75005 Paris, France  
mouch@mnhn.fr*

**Abstract** – The present selection of bibliography on the biodiversity and plant pathology of African fungi introduces around five hundred titles appearing up to 1994. Titles annotated are those regarded as being of marked importance in respective fields. Each comprises the relevant basic bibliographic details and, for most, a concise annotation on the scope of the research undertaken and the nature of the conclusion derived. Names of organisms involved in local pathologies are, in most cases, commonly underlined. Items selected proved to be of continental or of regional relevance or simply focus on a particular state. They were accordingly grouped following geographic or geopolitical standpoints. Continental and regional titles form a small group of over one hundred references; they are here proposed under the subheadings biodiversity and plant pathology. State restricted titles refer to around fifty countries including regional subunits as the Canary Islands and La Réunion. Grouping of references following political boundaries is expected to reflect local interest in fungi and in their detrimental activities. States reported are arranged in an alphabetical order but their individual titles were listed following dates of publication. This mode of presentation is assumed to favour a followup of progress achieved in the fields of fungal biodiversity and plant pathology. Twenty states proved to be respectively associated with five or less than five titles. The outgoing distribution of selected titles confirm more emphasis was awarded to the study of microorganisms affecting crops of economic importance with this being commonly achieved on a state level. The selection was prepared in order to draw attention to work of interest undertaken in the years before but more commonly after the second World War. This was generally achieved by overseas European mycologists and plant pathologists then established in several parts of the African continent. The period proved to be highly productive in terms of contributions on problems of plant disorders generated by fungi but less so on the distribution of the latter in the continent. This marked trend was, however, interrupted by the return of these specialists to their homeland after accession to independence of most-present day African states. Regain in fungal studies is now accomplished by local researchers though their individual numbers in these states is often very limited and sometimes inexistant. This critical annotated bibliography is expected to enhance African mycologists and phytopathologists to contribute to this type of basic scientific production.

**Résumé** – Une sélection de titres bibliographiques sur la biodiversité et la phytopathologie des champignons en Afrique est présentée. Elle rassemble environ cinq cents travaux, publiés jusqu'en 1994, considérés comme majeures pour chacune de ces deux disciplines mycologique. Chaque référence comporte les détails bibliographiques de base associée, pour la plupart, à une courte annotation critique sur l'objectif de la recherche et la nature de la conclusion. Les noms des organismes impliqués dans les pathologies locales, sont également précisés dans la plupart des cas. Les titres sélectionnés révèlent une pertinence continentale ou régionale ou simplement focalisent sur un état particulier,

des critères permettant un classement sur la base de notions géographiques ou géopolitiques. Les travaux à portée continentale ou régionale, au nombre d'une centaine, sont triés selon la vocation biodiversité ou pathologie végétale. Les titres liés à un seul état se réfèrent à une cinquantaine de pays y compris à des sousunités telles que les Iles Canaries et La Réunion. Un regroupement fondé sur les frontières politiques est supposé révéler et de façon plus objective, le niveau local d'intéressement pour les champignons et leur impact délétère. Ces pays sont présentés en ordre alphabétique mais les titres respectifs sont classés dans un ordre croissant des dates de parution. De ce mode particulier de présentation est attendu un suivi du progrès accompli, en biodiversité et en pathologie végétale fongique. Vingt états s'avèrent associés à cinq ou moins de cinq titres chacun. La répartition finale des titres sélectionnés fait apparaître un intérêt marquant pour les recherches réalisées, en particulier au niveau de chaque état, sur les organismes nuisibles aux productions végétales d'intérêt économique. L'objectif de cette sélection est de porter l'attention sur des travaux marquants afférents, réalisés aux alentours mais plus communément après la seconde guerre mondiale. Ils furent en général l'œuvre de taxonomistes et de pathologistes Européens expatriés en plusieurs points du continent africain. Cette période s'est révélée très productive en terme de contributions sur les affections végétales fongiques mais sensiblement moins pour ce qui relève de la répartition des champignons dans ce continent. Ce courant majeur sera toutefois interrompu par le retour en Europe de ces spécialistes, après accession à l'indépendance de la majorité des actuels états africains. Une reprise dans ces domaines est actuellement accomplie par des chercheurs locaux, quoique les effectifs respectifs sont souvent très réduits pour ne dire pas inexistant dans certains cas. Cette bibliographie critique annotée est destinée à promouvoir, en particulier chez les spécialistes locaux, cette catégorie de production scientifique basique.

## INTRODUCTION

Fungi are of particular relevance to sustainable development, they thus merit increased attention at the continental, national and local levels (Hawksworth, 1998). Regarding Africa, the fungi of some areas of this huge continent are known to have been worked on since 1800s in various European countries such as Austria, Belgium, France, Germany, Italy, Portugal and the United Kingdom. The outcome of these studies were commonly reported in their respective languages in local publications of these countries. A concomitant logical assumption of these studies is that collections of taxa examined were deposited in major European herbaria and less so in institutions of the states where the material originated (Sutton, 1994).

The advent of the second World War enhanced European interest in African raw productions of agricultural origin. Rapidly, local research centres were established for overseas workers in several points on this continent. The aim was to develop the productivity of tropical crops and woods by solving problems generated by the detrimental activities of fungi. The outcome was a standing flow of information relating to the phytopathology of fungi and less so on their biodiversity in Africa. The trend was, however, interrupted by the return of European specialists after accession to independence of most present-day African states. For these newly established countries and after a period of slackening, a regain in fungal studies is now accomplished by local specialists. In most their number is, however, often very limited and sometime inexistant.

The International Mycological Association is presently developing interest in fungi on a continental scale. For Africa, the Committee for the Development of Mycology was founded in 1990 during the First African Mycology meeting held at Réduit, Mauritius, June 13-15 (Hennebert, 1994). The second Regional Mycological Conference was organized in 1992 by the University of Al-Azhar at Cairo, from 7-10 October (Razak, 1992). These groups have also been active in compiling lists of mycologists, their specialisms and relevant institutions (Buyck & Hennebert, 1992). At the 1995 Harare meeting in Zimbabwe, the present Committee developed into the African Mycological Association. Mycologists interested in African fungi met again in Nairobi in August 1998 under the auspices of this Association. Sessions devoted to African fungi are now also scheduled in the programmes of the "Association des Etudes Taxonomiques et Floristiques d'Afrique tropicale" (AETFAT) meetings (Sutton, 1994).

The biodiversity panel of African mycology and particularly of fungi inhabiting its wide tropical segment have not received appropriate attention in the last decades. Several factors are behind this neglect most obvious one being the political instability of the tropical belt. The shortcoming of this interest is evident from the contents of the recent multiauthored specialist publications on tropical mycology. These include several books (Hyde, 1997; Isaac *et al.*, 1993; Janardhanan *et al.*, 1997; Watling *et al.*, 2002: Vols. 1 & 2) and a special issue of a biodiversity journal (Watling & Hawksworth, 1997). Single chapters totally devoted to fungi of tropical Africa are rather uncommon.

The production of annotated bibliographies will always be labour intensive, but with current computing technology what can now be generated from them is impressive. The availability of these documents even at the state level should maximise communication between the few groups of mycologists presently active in the African continent. Plant pathologists also often have to find information on the geographic distribution of plant diseases (Chiarappa, 1979). Of use in this respect are the lists of plant diseases which many countries have published in addition to the small number of regional lists that had been compiled in the past (Johnston & Booth, 1983). But these lists seriously need updating of their content in terms of taxonomic backgrounds. A notable effort in this domain is the recent annotated list of phytopathogenic fungi from South Africa (Crous *et al.*, 2000). This expanded document also offers an exhaustive relevant bibliography. The impact of this contribution should encompass nearby and even some far away states. This critical checklist is simply a model to be followed for other African states.

A comprehensive annotated bibliography on African fungi will probably not be produced before long. It follows any contribution bringing together part of titles dealing with these microorganisms is most welcome. The present document has thus no pretension to be exhaustive on the subject for the period reviewed. It simply draws attention to references of interest on the topic. In particular to work of European specialists having resided in Africa in the years before and after the second World War. Most of their articles remain unknown to present day local specialists being published in lesser-known journals or as bulletins or other publications which may also be difficult to obtain.

The present critical synthetic document is expected to enhance specialists whether African or not, to sustain this kind of scientific production either at the state or, more interestingly, at the regional level.

## ANNOTATED BIBLIOGRAPHY

The selected publications represent contributions regarded as being of marked interest to the topics Fungal Biodiversity and Plant Pathology in Africa. Over five hundreds were retained for the period surveyed. For each basic bibliographic details are reported. For most a critical annotation is also provided. It specifies the aim and the scope of the study undertaken and the main observations derived. Names of organisms involved in observed pathologies are sometimes underlined.

Selected publications vary in the scope of the area surveyed: continental, regional or refer to a particular state. They were accordingly screened following geographic or geopolitical standpoints. Notes encompassing large areas form a small group of over a hundred references. These "General Titles" are proposed under the subheadings Biodiversity and Plant Pathology in an alphabetical order of their author(s) names.

Most references proved to be state specific contributions. These "State Related Titles" refer to about fifty political units including regional subunits as the Canary Islands and La Réunion. States reported were arranged in an alphabetical order. Their respective titles are, however, proposed following publication dates rather than author(s)' names. It is assumed such a disposition would enable a clear followup of progress locally achieved in the scanned period. Twenty states have five or less than five references each.

### PART I – GENERAL TITLES

#### I A – Fungal Biodiversity

- Buyck B. (1994). *Ectotrophy in tropical African ecosystems*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 705-718.

- Buyck B. & Hennebert G.L. (1994). *A directory of mycology in Africa: Who's who? Present and future prospects*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 697-704.

*The compilation of a Directory of African mycology is announced. Contents of the questionnaire, conceived for this purpose, are explained. The aim of the Directory and its possible contribution to education, taxonomy, fundamental and applied mycology and nature conservation are discussed.*

- Cailleux R. (1963, 1965). Où peut-on cultiver le champignon de couche ? [Possible locations for the industrial production of the button mushroom.]; Procédé de culture de *Psalliota subedulis* en Afrique. [An operating process for the production of *Psalliota campestris* in Africa.]. *Cahiers de la Maboké*, Paris 1: 27-30; 3: 114-122.

- Carter A. & Khan R.S. (1982). New and interesting *Chaetomium* species from East Africa. *Canadian Journal of Botany* 60: 1253-1262.

- Castellani E. & Ciferri R. (1937). *Prodromus mycoflorae Africae orientalis italicae*. [Introduction to the mycoflora of Italian East Africa: Eritrea, Somaliland and Ethiopia]. Istituto di Agricoltura coloniale italiano, Firenze, 153 pp.

- Castellani E. & Ciferri R. (1950). Mycoflora Erythraea, Somala et Aethiopia. [Mycoflora of Eritrea, Somaliland and Ethiopia]. *Suppl. Atti dell'istituto botanico dell'università di Pavia*, Ser. 5, H, 52 pp.

*The first supplement has now been published to the list of plant diseases observed in "Italian East Africa", containing 926 species in 324 genera. Species not recorded in C.M.I distribution maps include Fomes lignosus, Elsinoe australis in Eritrea, E. fawcetti in Italian Somaliland, Phytophthora infestans in Eritrea and Abyssinia, and Venturia inaequalis, Puccinia glumarum, and P. helianthi in Abyssinia.*

- Cejj K. & Deighton F.C. (1969). Microfungi III. Some African species of *Phyllosticta* and *Septoria*: new genera and species and redistribution of some hyphomycetes, mainly African. *Mycological Papers* 117: 1-31.

- Deighton F.C. (1944; 1959; 1960). West African Meliolineae I. Meliolineae on Malvaceae and Tiliaceae; Studies on *Cercospora* and allied genera I. *Cercospora* species with coloured spores on *Phyllanthus* (Euphorbiaceae); African fungi I. *Mycological Papers* 9: 1-24; 71: 1-23; 78: 1-43.

- Deighton F.C. (1965). Microfungi I: Some species of *Fusicladiella*; Various hyphomycetes, mainly tropical. *Mycological Papers* 101: 23-43.

- Deighton F.C. & Pirozynski K.A. (1966). Microfungi II. *Brooksia* and *Grallomyces*, *Acrogenothea ornata* sp. nov., the genus *Xenosporium*. *Mycological Papers* 105: 1-35.

- Ebersohn C. (1994). *Species diversity of coprophilous fungi on the dung of four African game animals*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 749-753.

- Eicker A. (1993). Mushrooms: A Source of Proteins for Africa. *African Journal of Mycology and Biotechnology* 1: 12-23.

- Faurel L. & Schotter G. (1965). Notes mycologiques : VI. Sur quelques champignons coprophiles d'Afrique Equatoriale. [Mycological Notes: VI. On few coprophilous fungi from tropical Africa.]. *Cahiers de la Maboké, Paris* 3: 123-133.

- Gjaerum H.B. (1986). East African rusts (Uredinales), mainly from Uganda 5. On families belonging to Gamopetalae. *Mycotaxon* 27: 507-550.

*The 71 taxa recorded include 10 species that are described as new, 1 new to Africa, 18 new to Uganda, 3 to Kenya and 1 to Tanzania. A host-rust index for all the combinations reported in this series is presented.*

- Gjaerum H.B. & Sunding P. (1986). Flora of Macaronesia. Checklist of rust fungi (Uredinales). *Sommerfeltia* 4: 1-42.

*Rust names are listed alphabetically with the hosts on which they have been found. The occurrence of the rusts in 31 islands of the Azores archipelago, Madeira archipelago, Salvage islands, Canary islands and Cape Verde islands is tabulated. Index to synonyms of rusts and hosts are included.*

- Hennebert G.L. (1994). *The Mycothèque of the Catholic University of Louvain (MUCV): a fungal culture collection as a service to African mycology*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 779-784.

- Hansford C.G. & Deighton F.C. (1948). West African Meliolineae II. Meliolineae collected by F.C. Deighton. *Mycological Papers* 23: 1-79.

- Heim R. (1942). *Etudes descriptives et expérimentales sur les Agarics termitophiles d'Afrique tropicale*. [Descriptive and experimental studies on the termitophile Agarics of tropical Africa.]. Mémoires de l'Académie des Sciences, Paris, 64, 74 pp.

*This is a full description and critical discussion, in the light of relevant contemporary literature, of the author's studies on the Agaricaceae of tropical African termites' nests, regarded as constituting an entirely distinct section of the family in respect of their physiognomic, anatomical, cytological, biological, cultural, and biochemistry characters. To accommodate these fungi a new genus, Termitomyces, is erected, of which one group of three forms, including a new species is comprised in the present memoir.*

- Heim R. (1942). Nouvelles études descriptives sur les Agarics termitophiles de l'Afrique tropicale. [New descriptive studies on the termitophile Agarics of tropical Africa.]. *Archives du Muséum National d'Histoire Naturelle, Paris*, Sér. 6, 18: 107-166.

*Included in this further instalment of the author's investigations on the Agaricaceae of tropical African termites' nests are six species of Termitomyces, two newly described and*

two new transfers to that genus. A dichotomous key to the species and varieties of *Termitomyces* and three other synoptical tables are given, besides notes on *Marasmius pahouinensis* de Seynes and two chromosporous species of *Lepiota* saprophytically associated with termites' nests. Latin diagnosis of the new genus and species are given.

- Heim R. (1942). Les champignons des termitières. Nouveaux aspects d'un problème de biologie et de systématique générales. [The fungi of termites' nests. New aspects of a problem of general biology and taxonomy.]. *Revue des Sciences, Paris*, 80: 69-86.

*This is a summary of the essential results of the author's study on the biology and taxonomy of the Termitomyces associated with termites' nests in tropical Africa.*

- Heim R. (1952). Les *Termitomyces* du Cameroun et du Congo français. [*Termitomyces* species in Cameroon and French Congo.]. *Mémoires de la Société Helvétique des Sciences Naturelles* 80: 123-152.

- Heim R. (1955). Les Lactaires d'Afrique intertropicale (Congo Belge et Afrique Noire Française). *Bulletin du Jardin Botanique de l'Etat de Bruxelles* 25: 1-91.

- Heim R. & Cailleux R. (1965). Culture industrielle d'une *Psalliote* tropicale des régions chaudes. [The industrial production of a tropical *Psalliota* of warm regions.]. *Cahiers de la Maboké, Paris* 3: 109-113.

- Heim R. & Perreau J. (1964). Deux *Boletellus* nouveaux d'Afrique tropicale. [Two new *Boletellus* species from tropical Africa.]. *Cahiers de la Maboké, Paris* 2: 13-19.

- Heim R. (1977). *Termites et Champignons*. [Termites and Fungi.]. Société Nouvelle des Editions Boubée, Paris.

- Hjortstam K. & Ryvarde L. (1980). Studies in tropical Corticiaceae (Basidiomycetes). *Mycotaxon* 12: 167-184.

*Four new genera and 10 new species are described from Africa and adjacent areas.*

- Khan R.S. & Cain R.F. (1977). The genera *Sporromiella* and *Sporormia* in East Africa. *Canadian Journal of Botany* 57: 1174-1186.

- Khan R.S. & Krug J.C. (1989). New records of Sordariaceae from East Africa. *Mycologia* 81: 862-869.

- Khan R.S. & Krug J.C. (1994). *A synopsis of the coprophilous Ascomycetes of East Africa*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 755-772.

*214 species of coprophilous ascomycetes are known for east Africa. Many new records and substrates are reported. Some are additions for Africa and several represent the first coprophilous records.*

- Krug J.C. & Khan R.S. (1987). A new species of *Thecotheus* from East Africa. *Mycologia* 79: 200-203.

- Krug J.C. & Khan R.S. (1989). New records and new species of *Podospora* from East Africa. *Canadian Journal of Botany* 67: 1174-1182.

- Minoura K. (1969). Notes on some Ascomycetes of East Africa. *Transactions of the Mycological Society of Japan* 10: 41-46.

- Pegler D.N. (1977). *A Preliminary Agaric Flora of East Africa*. Kew Bulletin, Additional Series VI, 615 pp.

*An analytical flora of the Agaricales of Kenya, Tanzania and Uganda, including 389 species of which 63 are described as new, and representing 94 genera. Each accepted genus is redefined and fully detailed descriptions are given for each species, including line drawings of micro- and macrocharacters. Indented keys are provided for the determination of the 17 families as well as the genera and species included.*

- Pirozynski K.A. (1965). Microfungi I: African species of *Uncinula*. *Mycological Papers* 101: 1-23.

- Rammeloo J. (1994). *The contribution of the National Botanical garden of Belgium to the mycology of Africa*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 671-686.

*A short history is given of the mycological activities of the National Botanic Garden of Belgium. Details on collectors and collections are included. A list of the fascicles of the Flore Iconographique du Congo and of the Flore Illustrée des Champignons d'Afrique*

*Centrale is provided, together with an index to the genera already treated in these series. An extensive list of relevant references is provided.*

- Rammeloo J. & Mitchell D.W. (1994). *Contribution towards the knowledge of the Myxomycetes of Malawi and Zambia*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 785-794.

- Ryvarden L. & Johansen I. (1980). *A Preliminary Polypore Flora of East Africa*. Oslo, 636 pp.

- Schutte A.L. (1992). An overview of *Penicillium* (Hyphomycetes) and associated teleomorphs in southern Africa. *Bothalia* 22: 171-184.

*Literature published up to 1990 on Penicillium and its teleomorphs Eupenicillium, Talaromyces is surveyed in South Africa, Lesotho, Mozambique, Namibia, Swaziland and Transkei.*

- Swinscow T.D. & Krog H. (1988). *Macrolichens of East Africa*. British Museum (Natural History): London, Kew, 390 pp.

- Webster J. (1994). Centenary celebrations of the Mycothèque de l'Université Catholique de Louvain, Belgium, 1894-1994. *Mycologist* 8: 188-189.

*The proceedings of the afternoon workshop entitled "Fungal taxonomy and Tropical Mycology: Quo vadis? (G.L. Hennebert ed.)", long awaited since has apparently not yet been published.*

- Zambettakis C. (1971). Les Ustilaginales des plantes d'Afrique. [The Ustilaginales of African plants.]. *Bulletin Trimestriel de la Société Mycologique de France* 86: 1-388.

*An exhaustive document on the subject.*

- Zambettakis C. (1979). Recherches sur les Ustilaginales (Supplément sur les espèces africaines). [Research on the Ustilaginales (Supplement on African species).]. *Bulletin Trimestriel de la Société Mycologique de France* 95: 393-443.

*This account includes sections on characters of the Ustilaginales, techniques, the host, list of recognized hosts in the Brussels herbarium, parasites, list of recognized Ustilaginales, descriptions of new taxa, descriptions of samples classified according to the host genus and list of host samples and parasitic smuts.*

- Zoberi M.H. (1972). *Tropical Macrofungi, some common species*. Macmillan, London & Basingstoke.

## 1 B – Plant Pathology

- Alam M.S., John V.T. & Zan Kaung (1984). *Insect pests and diseases of rice in Africa*. In Rice Improvement in Eastern, Central and Southern Africa, 9-19 April 1984, Lusaka, Zambia. Los Banos, Phillipines: International Rice Research Institute: 67-82.

*Tabulated data are presented on recorded resistance and sources of resistance to major insect pests. Tall and short varieties resistant to Pyricularia oryzae, Rhynchosporium oryzae, Thanatephorus cucumeris, Xanthomonas campestris and rice yellow mosaic virus are listed.*

- Allen D.J. (1979, 1991). New disease records from grain legumes; Outbreaks and new records. Africa. New disease records from legumes in tropical Africa. *FAO Plant Protection Bulletin* 27: 134-136; 39: 112-113.

- Allen D.J. (1995). An annotated list of diseases, pathogens and associated fungi of the common bean (*Phaseolus vulgaris*) in Eastern and Southern Africa. *Phytopathological Papers* 34: 1-64.

- Anonymous (1962 ?). *A memorandum for phytosanitary procedures in Africa*. Publications of the Inter-African Phytosanitary Commission, 82, 178 pp. [available from the IAPSC, Commonwealth Institute of Entomology, 56 Queen's Gate, London SW 7; now CABI Bioscience UK Centre (Egham), Bakeham Lane, Egham, Surrey, UK].

*This publication provides a guide for new territories and help improving or establishing local phytosanitary services. Following a brief historical introduction, chapters are devoted to Government intervention and international conventions, role and organisation of the national plant protection services, definitions of phytosanitary legislation, types of African*

phytosanitary legislation, and inter-african coordinated legislation. This last section includes specific recommendations for the major diseases of 55 crops or types of crops, together with certain types of plant material, soils, etc. The distribution of diseases of these crops, not yet detected in Africa or of limited occurrence there, is noted. Further sections deal with details of the practice of phytosanitary inspection, and requirements of a post-entry quarantine station. Appendixes contain models of the form for various phytosanitary documents; and the texts of the International Convention of Rome and the Phytosanitary Convention for Africa south of the Sahara.

- Anonymous (1967). A select bibliography of plant pathology. *Review of Applied Mycology*, Part 1, 46: 1-7; Part 2, 46: 113-120.

All cited references are here reported.

- Anonymous (1968). A bibliography of lists of plant diseases and fungi. I. Africa. *Review of Applied Mycology* 47: 553-558.

Major important references are here reported.

- Anonymous (1971). *Directory of specialist workers on Phytophthora palmivora with special reference to cocoa*. London, UK; Cocoa, Chocolate and Confectionary Alliance.

- Anonymous (1972). *Proceedings of the First International Seminar and Workshop on Bayoud*. Technological Institute for Saharan Agriculture, Ministry of Agriculture and Land Reform, Algeria.

- Anonymous (1976). International Round Table on Cocoa Diseases. Brazil, June 1975. *PANS* 22: 113-115.

- Anonymous (1979 ?). *Annual Report East African Agriculture and Forestry Research Organisation, Record of Research for 1976*. Nairobi, Kenya, 191 pp.

- Anonymous (1981; 1982). *IRAT. Rapport annuel 1980*. [IRAT. Annual report 1980.]. Paris, France : Institut des Recherches Agronomiques et des Cultures Vivrières, xxvii + 256 pp. ; *IRAT. Rapport annuel 1981*. [IRAT. Annual report 1981.], xxxii + 242 pp. ; *IRAT. Rapport annuel 1982*. [IRAT. Annual report 1982.], xxxvi + 249 pp.

In these reports accounts are given on work done on *Pyricularia oryzae*, *Rhynchosporium oryzae* and *Corallocystrina oryzae* on rice; sorghum moulds in Senegal, *Sphaelotheca sorghi* and *Tolyposporium ehrenbergii* on sorghum in Mali; *Sclerospora graminicola*, *T. penicillariae* and *Claviceps microcephala* on millet in Mali; *Cercospora arachidicola*, *C. personata* and *Puccinia arachidis* on groundnut in Mali; virus and fungus diseases of yam in the Ivory Coast. The reports also includes accounts on *Sclerotium rolfsii* on yam in the Caribbean Martinique island; dahseen mosaic virus and *Pythium irregulare* on *Colocasia antiquorum* in French Polynesia; *Pseudomonas solanacearum* on aubergine in Martinique; and *Ustilago scitaminea*, *Puccinia melanocephala*, *Cercospora koepkei*, *X. albilineans*, ratoon stunting and sugarcane mosaic virus strains on sugarcane. Not all IRAT annual reports are included in the present contribution.

- Anonymous (1983). *Annual Report, International Institute of Tropical Agriculture 1982*. Ibadan, Nigeria: IITA, 217 pp.

Studies in various aspects of the pathology of rice, maize, cowpea, soyabean, cassava and yam are reported separately.

- Anonymous (1984). *International Institute of Tropical Agriculture. Research Highlights 1984*. Ibadan, Nigeria: IITA, 114 pp.

This institute has issued a number of regular annual reports in the last decades.

- Anonymous (1985). *Plant Pathology. In Annual Report 1970/80-1980/82, Cocoa Research Institute, Ghana*. Tafo, Ghana: 125-175.

- Anonymous (1985). Outbreaks and new records: Ethiopia. Diseases on various crops. *FAO Plant Protection Bulletin* 33: 119-121.

New disease records on 63 different crops, 1973-80, are listed.

- Anonymous (1985). *Groundnut. Diseases and Mycorrhizas. Fungal and Virus Diseases in Southern Africa. In ICRISAT Annual Report, Andhra Pradesh, India; International Crops Research Institute Semi-Arid Tropics*, pp. 218-226; pp. 235-236; pp. 249-252.

Details are given of work on resistance screening, resistance breeding and multi-locality yield trials. In studies at Chitedze, Malawi (ICRISAT Regional Groundnut Improvement Program) southern African lines were tested against *Cercospora arachidicola* in relation to pod yield and leaf retention. Studies on groundnut virus are reported.

- Anonymous (1986). Proceedings of the second general conference of Agricultural Research Centre, Giza, Cairo. *Agricultural Research Review* 62: 1-392. [En., Ar.].

*This special volume on plant pathology includes 42 papers presented at the meeting held on 9-11 April 1984.*

- Anonymous (1988). Inter-African Phytosanitary Council. *Inter-African Phytosanitary and Coordinated Regulation* 1: 1-206. P.O. Box 4170 Nlongak, Yaoundé, Cameroon.

*As an aid to quarantine control of pests and diseases in countries of Africa, data are presented on known pests and diseases of 72 kinds of economic plants. These 72 sets of data are followed by a list (in alphabetical order by common names) of plants and plant products the importation of which is submitted to an authorization of the national protection service; a list of seedborne pathogens in agriculture and silviculture; sample forms for quarantine use; reprints of various legal articles and resolutions and a list of the signatory countries in Africa.*

- Asare-Nyako A. (1976). The role of plant protection in crop improvement in Africa. A review of major pests and diseases of cocoa and cola in Africa. *African Journal of Plant Protection* 1: 189-199.

- Baudin P. & Turmaine I. (1989). *Information on crop protection in French-speaking Africa. In Crop protection information; an international perspective.* Proceedings of the International Crop Protection Information Workshop held at CAB International, Wallingford, UK, April 1989, (K.M. Harris & P.R. Scott, eds.). Wallingford, UK, CAB International: 109-119.

*The circulation of information on crop protection in French-speaking Africa through spontaneous or formal networks is discussed. A major network is composed of staff from the "Centre de Coopération Internationale de Recherche Agronomique pour le Développement (CIRAD) and the Institut Français de Recherche Scientifique pour le Développement en Coopération (ORSTOM, now IRD: Institut de Recherche et de Développement)" working in the national research institutes. The networks are organized around a theme, e.g. locust control, or a crop, e.g. rice or cotton. To provide a better information service, these networks should be extended and an international network specific to crop protection should be established.*

- Bockelman H.E., Sharp E.L. & Bjarko M.E. (1983). Isolates of *Pyrenophora teres* from Montana and the Mediterranean region that produce spot-type lesions on barley. *Plant Disease* 67: 696-697.

*Isolates of P. teres f. maculata (causing spot-type symptoms) are described from Morocco, Tunisia, Turkey and Montana. Growth on V-8 agar and conidial characteristics were indistinguishable from those of P. teres f. teres. In seedling inoculations, the f. maculata isolates from Morocco, Tunisia and Turkey generally produced larger lesions than the Montana isolates. Most cultivars tested were intermediate in reaction to the Mediterranean isolates, but Dekap was susceptible to all but one isolate.*

- Brown A.G.P. (1969). *A distribution list of the more important pathogens of economic plants with particular reference to Africa.* Commonwealth Mycological Institute, Kew, UK, 95 pp.

*This has been compiled on the lines of an earlier list. Sections cover diseases north and south of the Sahara, with an indication of the extent and distribution, and those not reported from Africa. There are host-pathogen and pathogen indexes.*

- Buddenhagen I.W. & Persley G.J. (Eds.) (1978). *Rice in Africa.* London, UK; Academic Press Inc., xv + 356 pp.

*In these proceedings of a conference held at the International Institute of Tropical Agriculture, Ibadan, Nigeria, 7-11 March 1977, Section III on pests and diseases includes the following paper: Bidaux J.M. – Screening for horizontal resistance to rice blast (*Pyricularia oryzae*) in Africa (pp. 159-174). Section V on short research communication includes: Fauquet C. & Thouvenel J.C. – Identification of rice yellow mottle virus in Ivory Coast. (pp. 307-310).*

- Buyckx E.J.E. (Ed.) (1962). *Précis des maladies et des insectes nuisibles rencontrés sur les plantes cultivées au Congo, Rwanda et au Burundi.* [Compendium of diseases and

noxious insects found on cultivated plants in the Congo, Rwanda and Burundi.]. Publications de l'Institut National Agronomique du Congo Belge, Hors Série, 708 pp.

*This beautifully illustrated book, intended to enable planters to identify the pests and diseases they may encounter and to guide them to the locally feasible control measures, and hence practical rather than excessively technical or detailed, was compiled by members of the 'Division Phytopathologique et Entomologique Agricole'. After some practical advice on examining diseased and damaged plants the ten sections, some divided into chapters, deal with stimulant and oil-bearing plants, Hevea rubber, cotton, pyrethrum, fruits, amylaceous plants, bean (Phaseolus vulgaris), and chemical control (available products, dosages, and precautions against toxicity). Under each host symptoms are tabulated and both pathogenic and non-parasitic disorders are treated. An appendix deals with the procedure to be followed in requesting information on plant pathology; there is a glossary and indexes of scientific and common names.*

- Carpenter J.B. & Elmer H.S. (1978). *Pests and diseases of date palm*. Agriculture Handbook, United States Department of Agriculture No. 527, 42 pp.

*Accounts of the diseases contain, according to their relative importance, discussion of some or all of the following aspects: distribution, economic importance, symptoms or injuries, nature and life cycle of the causal agent and control measures. World literature is reviewed up to January 1977, and citations are given to recent publications on each of the principal date-growing countries. A glossary, and common and chemical pesticide names are appended.*

- Chiarappa L. (1980). The role of FAO in research and control of plant diseases. *Plant Disease* 64: 362-367.

*The structure and operation of FAO, and its role against the main diseases of the major crops, are discussed and described with special reference to coconut, coffee and cereals.*

- Cauquil J. (1986). *Maladies et ravageurs du cotonnier en Afrique au sud du Sahara*. [Diseases and pests of cotton in Africa south of Sahara.]. Paris, France, Institut de Recherches du Coton et des Textiles Exotiques (IRCT), 92 pp. (106 col. figs.).

*Harvest problems and pests and diseases during the vegetative and reproductive phases of growth, mineral deficiencies and various other causes of damage are described and illustrated.*

- Cauquil J. (1988). *Cotton pests and diseases in Africa south of the Sahara*. Montpellier Cedex, France: Institut de Recherches du Coton et des Textiles Exotiques (IRCT), 92 pp. [Supplement to "Coton et Fibres Tropicales" IRCT-CIRAD-CFDT].

*The aim of this booklet (Institut de Recherches du Coton et des Textiles Exotiques, 6, rue du Général Clergerie, 75116 Paris, France) is to identify the causes of symptoms of damage to cotton observed in the field in Africa south of the Sahara by referring to illustrations that have been chosen as being as characteristics as possible. This booklet is intended primarily for those working in the field, whether they are farmers or agricultural managers.*

- Chevaugéon J. (1956). *Les maladies cryptogamiques du Manioc en Afrique Occidentale*. [The cryptogamic diseases of Cassava in West Africa.]. Encyclopédie mycologique, 28, vi + 205 pp., Paris, Paul Lechevalier.

*This comprehensive monograph on the cryptogamic diseases of cassava is based on field and laboratory studies carried out since 1948 in different parts of French West Africa. The first chapter deals with the botany, history and present status of the host itself in the region concerned, and the fungi recorded on it from all parts of the world are listed in chronological order with a summary of the pathogenicity of those parasites in different countries. The second chapter refers to climatic factors and laboratory techniques, and chapter three gives full descriptions of all the fungi known on cassava in West Africa (73 species, including 17 newly described). The writer then describes the relationships between these organisms and concludes that the fungi chiefly concerned with disease in cassava are *Glomerella cingulata* f. sp. *manihotis* f. nov., affecting leaves, stems, and shoots, and *Cercospora henningsii* and *C. caribaea* on the leaves. The remaining chapters are concerned with the author's studies on the biology of these last-named fungi, the effect of environmental and other factors on susceptibility to them, and their behaviour in culture. The final chapter summarizes the whole work, and a bibliography of 143 titles is appended.*

- Declért C. (1990). *Manuel de phytopathologie maraîchère tropicale. Cultures de Côte-d'Ivoire*. [Manual of phytopathology of tropical market-gardening. Produces of Ivory Coast.]. Editions ORSTOM, Collections Didactiques, Paris, 333 pp.

- Fajemisin J.M., Kim S.K., Efron Y. & Alam M.S. (1984). Breeding for durable disease resistance in tropical maize with special reference to maize streak virus. *FAO Plant Production and Protection Paper* 55: 49-71.

*Following a general account on maize diseases, including information on Puccinia polysora in Africa and on maize streak virus disease, facilities are described for MSV screening at IITA, Ibadan, Nigeria. The paper concludes with information on comprehensive durable resistance, mainly with reference to the development of combined resistance to Peronosclerospora and MSV.*

- Follin J.C. (1986). *La sélection du cotonnier (Gossypium hirsutum L.) pour la résistance aux maladies présentes en Afrique au sud du Sahara*. [Selection of cotton (*Gossypium hirsutum* L.) for resistance to diseases present in Africa south of the Sahara.]. Coton et Fibres Tropicales, Supplément 7, 30 pp.

- Follin J.C. (1988). Les maladies du cotonnier en Afrique francophone au sud du Sahara. [The diseases of cotton in French speaking Africa south of the Sahara.]. *Phytoma* 403: 49-51. Institut de Recherches du Coton et des Textiles Exotiques, CIRAD, Montpellier, France.

- Fudl-Allah A.E.-S.A. & Nour-Eldin F. (1979 ?). *Citrus stubborn disease in Egypt, Libya, and Lebanon*. Al-Faateh University, Tripoli, Libya: 913-914 [En.].

*One of the main causes of the relatively low citrus production in these countries is the high incidence of the disease, over 60.0% of cultivated sweet orange trees in Egypt being affected. Natural spread of the causal agent is suspected. Orange cultivars propagated from new lines have not shown any symptoms during the last 5 years.*

- Hahn S.K., Caveness F.E., Lema K.M. & Theberge R.L. (1990). *Breeding cassava and sweet potato for pest and disease resistance in Africa*. In Integrated pest management for tropical root and tuber crops: Proceedings of the workshop on the global status of and prospects for integrated pest management of root and tuber crops in the tropics held in Ibadan, Nigeria, 25-30 October 1987 (S.K. Hahn & F.E. Caveness eds.). Ibadan, Nigeria, International Institute of Tropical Agriculture (IITA): 66-72.

*IITA's research in breeding cassava and sweet potato for resistance to pests and diseases of major economic importance in Africa is discussed.*

- Hahn S.K., Ikotun T., Theberge R.L. & Swennen R. (1989). Major economic diseases of cassava, plantain, and cooking / starchy bananas in Africa. *Tropical Agriculture Research Series* 22: 106-112.

*Major diseases of cassava are caused by African cassava mosaic geminivirus, bacterial blight (Xanthomonas campestris pv. manihotis) and Colletotrichum gloeosporioides f. sp. manihotis. The crop has been improved through a breeding programme at IITA and disease-resistant, high yielding cultivars are available. On banana, black Sigatoka (Mycosphaerella fijiensis), first reported in Zambia in 1973, has since spread to nearly all the countries in Africa. Since chemical control is expensive, intensive breeding is in progress, supported by a worldwide collection of Musa germplasm.*

- Harries H.C. (1991). *The vulnerability of the coconut genetic resource in Africa*. In Working towards a better future for the African coconut farmers. Proceedings of the First African Coconut Seminar, 4-8 February 1991. Arusha / Dar es Salam, Tanzania. Paris, France BuroTrop: 77-81. National Coconut Development Programme, Dar es Salam, Tanzania.

- Hendrickx F.L. (1948). *Sylloge fungorum congensium*. Catalogue des champignons signalés au Congo belge et au Ruanda-Urundi. [Sylloge fungorum congensium. A catalogue of fungi reported from the Belgian Congo and Ruanda-Urundi]. Publications de l'Institut national des Etudes agronomiques du Congo Belge, Série scientifique, 35, 216 pp.

*This catalogue of fungi from the Belgian Congo and Ruanda-Urundi is preceded by a list of new combinations and new names accepted in the catalogue. The main part of the work is arranged systematically, the genera and the species being listed alphabetically in their families. After the specific name, a reference to the original description is given, followed by*

reference to Saccardo's *Sylloge Fungorum*, synonyms or names under which the fungus was reported in any publication dealing with the Congolese flora, place where found, hosts or substrates on which it has been reported in the Congo where known, name of collector, number and date of collection, and any vernacular names and uses. An extensive bibliography and indexes to the vernacular names, families, and genera are appended.

- Kaiser W.J. (1976). Important diseases and pests of bean (*Phaseolus vulgaris*), lima bean (*Phaseolus lunatus*) and pigeon pea (*Cajanus cajan*) in Africa. *African Journal of Plant Protection* 1: 97-107.

- Kassam A.H. (1976). *Crops of the West African semi-arid tropics*. Hyderabad, India; International Crops Research Institute Semi-arid Tropics, 154 pp.

*This review deals with 23 crops, including cereals, legumes, roots and tubers, vegetables and fibers. For each crop a section on diseases is included.*

- Kremer A.R. & Lock C. (1992). A decision model for sponsors of crop protection in the western Sahel. *Tropical Science* 32: 397-419.

*Donors and national governments are together establishing a system of subsidized crop protection for cereals (especially millets and sorghum) in Senegal, Mali, Burkina Faso and Niger. The difficulties involved are discussed, with special reference to research techniques that were applied to the issue by the UK Overseas Development Administration's Mali Millet Pest Project 1985-90, as a result of which ODA decided not to sponsor the chemical protection of millet in Mali.*

- Laux W. (Ed.) (1990). *Bibliographie der Pflanzenschutzliteratur*. [Bibliography of plant protection literature.]. 26 (1): xvi + 170 pp.; 26 (2): xvi + 341 pp. [Ge.] Biologische Bundesanstalt für Land- und Forstwirtschaft, Köningin-Luise Strasse 19, D-1000 Berlin-Dahlem.

- Lopez S.J. (1983). *Bibliography on bean research in Africa*. Cali, Columbia; CIAT iv + 177 pp. CIAT, Apartado Aereo 6713, Cali, Columbia.

*This bibliography on Phaseolus vulgaris contains 813 references from a wide range of publications, particularly minor publications. These are organized alphabetically by country (28), and then author. Abstracts are provided for more than 50% of the references. An author index and a subject index, which includes records of cultivars and lines and at least 40 other records relevant to breeding, are provided.*

- Lopez S.J. (1986). *Bibliography on bean research in Africa*. Supplement 1986. Cali, Columbia; Centre International de Agricultura Tropical, iv + 190 pp.

*A further 55 new entries are included in this supplement. Citations are arranged by country and then alphabetically by author. Abstracts are provided for 52 citations.*

- Louvel D. (1980). Comparaison des résultats d'utilisation du dispositif d'évaluation de la résistance horizontale du riz vis-à-vis du *Pyricularia oryzae* (Cav.) en Côte d'Ivoire et Madagascar sous deux conditions épidémiologiques. [Comparison of the results of using a design for evaluating the horizontal resistance of rice to *Pyricularia oryzae* (Cav.) in the Ivory Coast and Madagascar under two epidemiological conditions.]. *Agronomie Tropicale* 35: 259-283.

- Mallamaire A. [1956-57 (1958)]. Catalogue des principales maladies cryptogamiques, bactériennes, à virus et des phanérogames parasites, nuisibles aux plantes cultivées en Afrique Occidentale Française et au Togo. [A list of the chief cryptogamic, bacterial, and virus diseases and of parasitic phanerogams harmful to cultivated plants in French West Africa and Togo.]. *Bulletin Protection Végétaux (Dakar)*, 1956-57: 47-68.

*This list, presented originally at the congress on the protection of plants and their products in hot climates, held at Marseilles in 1954 covers the chief fungal, bacterial, and virus diseases of cereal crops and cassava, fruits, oleaginous crops, industrial crops (cocoa, coffee, tobacco), and cotton in French West Africa and Togoland. It is arranged under the headings: part attacked; class, family, and specific name of the parasite; and the nature of and importance of the damage caused.*

- Mallet G., Geiger J.P., Nandris D., Nicole M., Renard J.L. & Tran Van Canh (1985). Les champignons agents de pourridies en Afrique de l'Ouest. [The fungal agents of root and butt rots in West Africa.]. *European Journal of Forest Pathology* 15: 263-268.

*The geographical distribution and host range are given for the following species infecting forests and plantations (cited in order of decreasing economic importance in*

*Africa*): *Rigidiporus lignosus*, *Armillaria* spp., *Phellinus noxius*, *Ganoderma* spp., *Sphaerostilbe repens* and *Ustilina zonata*. *The biological cycle of these parasites, type of decay caused, and detection and control methods are reviewed and discussed.*

- Makkouk K.M., Gharbieh W.A., Bayaa B., Sharif S. & Saghir A.R. (1991). [Plant protection research in the Arab countries: present status and future perspectives.]. *Arab Journal of Plant Protection* 9: 68-79. [Ar., En.].

*Research papers presented at the 3 congresses of the Arab Society of Plant Protection in 1982, 1986 and 1988 are evaluated and compared, and future research areas highlighted.*

- Mamluk O.F., Haware M.P., Makkouk K.M. & Hanounik S.B. (1989). Occurrence, losses and control of important cereal and food legume diseases in West Asia and North Africa. *Tropical Agriculture Research Series* 22: 131-140.

*The most important diseases of wheat, barley, Cicer arietinum, lentil and faba bean are briefly discussed.*

- Manda D.R.B. (Ed.) (1974 ?). *Proceedings of the Fifth East African Cereals Research Conference held in Malawi, 10-15 March 1974*. Zomba, Malawi; Government of the Republic of Malawi, xii + 336 pp. Among the 49 papers presented is one by M. Siddiqi on Diseases of Rice in Malawi (pp. 96-98).

- Menyonga J.M. (1976). Major pests and diseases of banana and plantain. *African Journal of Plant Protection* 1: 213-223.

*The report includes notes on the symptoms, importance, spread and control of Mycosphaerella musicola and Trachysphaera fructigena in Africa.*

- Moreau C. (1948-1959). Les maladies parasitaires des principales cultures tropicales. *Revue bibliographique I-XXII*. [Parasitic diseases of major tropical crops. Bibliographic review I-XXII.]. *Revue de Mycologie (Paris), Supplément colonial*, Vols. 13-24.

*In this series of reviews, the author gives notes from the literature published each year in the period from 1947 to 1958 on the principal diseases of citrus, pineapples, bananas, cacao, coffee, sugar-cane, cotton, rubber, dates, rice, and tea. The overall bibliography relates to several hundred references.*

- Nandris D., Nicole M. & Geiger J.P. (1987). Variation in virulence among *Rigidoporus lignosus* and *Phellinus noxius* isolates from West Africa. *European Journal of Forest Pathology* 17: 271-281.

- Nene Y.L., Mengistu A., Sinclair J.B. & Royse D.J. (1978). An annotated bibliography of chickpea diseases 1915-1976. *Information Bulletin, ICRISAT* No. 1, vi + 43 pp.

*The bibliography contains 331 abstracts of papers on chickpea (Cicer arietinum) diseases, including those caused by fungi, bacteria, viruses. A pathogen index is appended.*

- Notteghem J.L. (1984). Breeding for disease resistance in upland rice in Africa. *FAO Plant Production and Protection Paper* 55: 107-124.

*Brief information is presented on breeding for resistance to Xanthomonas oryzae. The bulk of the paper is devoted to breeding for resistance to Pyricularia oryzae.*

- Olembo T.W. (1983). Further studies on cypress canker disease in East Africa caused by *Monochaetia unicornis* (Cooke & Ellis) Sacc. *Forest Ecology and Management* 5: 119-131.

*An experiment was laid out to test the susceptibility of siblings derived from 49 registered Cupressus lusitanica "Plus Trees" in East Africa, and their growth performance under comparatively high M. unicornis spore inoculum potential. Canker attack in the different sibling groups was 8-60%, peak infection occurring at 3 year.*

- Oumarou I. (Ed.) (1988). *Réglementation phytosanitaire coordonnée pour l'Afrique*. Volume 2. [Coordinated phytosanitary regulation for Africa. Volume 2.]. Yaoundé, Cameroon; Organisation de l'Unité Africaine; Commission Scientifique Technique et de la Recherche, Conseil Phytosanitaire Interafricain, 204 pp. Secretariat scientifique, BP 4170, Yaoundé, Cameroon.

*Principal diseases and insect, mite and nematode pests are listed for 71 economically important plants which occur in Africa, including forest trees, cereals, vegetables, fruit and ornamental plants. Details of worldwide distribution are given for the most important pests and control measures are outlined for each plant.*

- Onyike N.B.N. & Nelson P.E. (1991). *Fusarium* species associated with millet grain from Nigeria, Lesotho and Zimbabwe. *Mycologia* 83: 708-712.

*Seed of pearl millet, Pennisetum typhoides; prosomillet, Panicum miliaceum, and foxtail millet, Setaria italica were collected from Nigeria, Lesotho and Zimbabwe. Distribution of Fusarium species was examined.*

- Prinsley R.T. & Terry P.J. (Ed.) (1988). *Crop protection for small scale farms in Eastern and Central Africa – A review*. London, UK; Commonwealth Secretariat Publication, 118 pp. Commonwealth Science Council, Marlborough Place, Pall Mall, London, SW1Y 5HX, UK.

*This volume represents the collection of review papers presented at a Commonwealth Science Council project planning meeting held in Harare, Zimbabwe, in March 1988, on the major problems of crop protection on small-scale farms in East and Central Africa.*

- Prior C. (Ed.) (1985). *Commonwealth Agricultural Bureaux; Rothamsted Experimental Station – Distribution Maps of Major Crop Pests and Diseases in Africa*. Yaoundé, Cameroon: Inter-African Phytosanitary Council.

*These maps have been prepared by the Commonwealth Institute of Entomology, Commonwealth Institute of Mycology, Commonwealth Institute of Parasitology and Rothamsted Experimental Station on similar lines to the long-established series of Distribution Maps of Insect Pests and Distribution Maps of Plant Diseases published by CAB International and covering world distribution, and are bound in a loose-leaf format. The present series of 320 Maps concerns fungal, bacterial and viral parasites as well as invertebrates and bird pests major crops of the African continent and neighbouring islands (including Madagascar, Mauritius, the Seychelles and Réunion). On each map, spots are placed against each appropriate country and details of the relevant records are given on the reverse side. The maps are arranged in alphabetical order by genus and species (of the pest or pathogen) within the broad groups of fungi, bacteria, viruses, insects and mites, nematodes, and birds. An alphabetical index of pathogens and pests (by valid names and synonyms) is provided. A final section of the publication contains information (arranged alphabetically by crop species) on phytopathological (quarantine) regulations for plant crops.*

- Ragazzi A. & Marino M. (1990). Il genere *Cercospora* in Africa, con particolare riferimento alla *Cercospora angolensis*. [The genus *Cercospora* in Africa, with special reference to *Cercospora angolensis*.]. *Rivista di Agricoltura Subtropicale e Tropicale* 84: 171-184.

*A list is presented of Cercospora species found in Africa, followed by two lists of Cercospora species of agricultural importance with the Latin name of the host and distribution in Africa, based on the literature. The occurrence of C. angolensis on citrus species in Angola and other African countries, and its morphological and cultural characteristics are outlined.*

- Rajogopalan K., Aderungboye F.O., Obasolo C.O. & Eme A. (1978). Evaluation of oil palm progenies for reaction to the vascular wilt disease. *Journal of the Nigerian Institute for Oil Palm Research* 5: 87-95.

*In a modified Prendergast's technique fresh topsoil in polythene bags was used for raising test seedlings. Roots were thoroughly washed with a jet of tap water before inoculation with 10 ml of a mixture of ten Fusarium oxysporum f. sp. elaeidis isolates collected from African oil palm growing areas.*

- Rayner R.W. (1963). *The more important pathogens of limited distribution in Africa which attack economic plants, and their world distribution*. Document inter-African phytosanitary Commission (63) 1, xxviii + 45 pp.

*This list is based on the C.M.I. distribution maps. Pathogens are grouped in ten sections according to the extent of their regional distribution in the continent of Africa, and fungi, bacteria, and viruses are arranged alphabetically together, with the data on their geographical distribution and host-range. Appended are a host list and a pathogen index.*

- Renard J.L. (1979). La fusariose du palmier à huile. Diagnostic en plantation. Méthodes de lutte. [*Fusarium* disease of oil palm. Diagnosis in plantation. Control methods.]. *Oléagineux* 34: 59-63.

*Symptoms of F. oxysporum f. sp. elaeidis, its distribution in Africa, damage and effect on yield are described. Planting material, cultivation techniques and agronomic methods for control are discussed.*

- Reddy M.V., Gridley H.E. & Kaack H.J. (1980). Major disease problems of chickpea in North Africa. *International Chickpea Newsletter* 3: 13-14. ICRISAT, Patancheru P.O., Andhra Pradesh, India.

*The most serious diseases of Cicer arietinum in Algeria, Tunisia and Morocco are blight (Ascochyta rabiei) and stunt (pea leaf roll virus); the latter due to the presence of many other host crops and its aphid vectors.*

- Resplandy Renée (1959). Les maladies parasitaires des principales cultures tropicales. *Revue bibliographique*. 22. [The parasitic diseases of the principal tropical crops. A bibliographical review. 22.]. *Revue de Mycologie, Paris* 24: 65-77.

- Rodrigues C.J. Jr, Varzea V.M.P., Hindorf H. & Medeiros E.F. (1991). Strains of *Colletotrichum coffeanum* Noack causing coffee berry diseases in Angola and Malawi with characteristics different to the Kenya strain. *Journal of Phytopathology* 131: 205-209.

*Strains of Colletotrichum isolated from coffee berries in Angola and Malawi were identified as C. coffeanum causing coffee berry disease. The isolates were highly aggressive on cultivar Catimor and produced high numbers of acervuli and pink conidia when incubated in vitro and in the dark, differing in these characters from a Kenyan strain which was less aggressive, produced no acervular and produced lower numbers of conidia on hyphal tips.*

- Roger L. (1951; 1953; 1954). *Phytopathologie des pays chauds*. [Plant pathology in the tropics.], Vol. I: 1266 pp.; Vol. II: 1130 pp.; Vol. 3: 895 pp., Paris, Paul Lechevalier.

*This treatise – the first of three volumes dealing with plant pathology in the tropics – is divided into two parts, the first dealing with the principals of phytopathology, parasitic and non-parasitic diseases, and control methods in nine separate chapters. The first section of Part II includes descriptions of cryptogamic diseases of tropical plants caused by fungi, algae, and lichens and contains in five chapters a study of fungi in general. The second volume of this treatise is a continuation of the first section of part II, comprising descriptions of specific parasitic diseases of tropical plants caused by ascomycetes, imperfect fungi, and mycelia sterilia. Volume III concludes the first section of Part II with descriptions of diseases caused by algae, lichens and parasitic mosses or epiphytes. Section two of Part II has three chapters on bacterial diseases; section three has two chapters on parasitic phanerogams; and section four has three chapters on virus diseases. Part III (in Volume III) comprises a review of problems of plant health in the tropics with reference to specific types of crops, concluding with a discussion of hyperparasitism and its application to biologic control. The whole work concludes with a glossary of botanical terms, alphabetical list of abbreviated authors' names and their full designation, analytical key to the contents of all three volumes, list of errata, general alphabetical index, alphabetical list of plants cited, and a list of diseases arranged alphabetically under their hosts. This still valuable series need to be updated and implemented with recent information on the topic.*

- Renard J.L. & Quillec G. (1984 a). Some aspects of the research into diseases of oil palm in Africa and South America. *Journal of Plant Protection in the Tropics* 1: 69-76.

*Studies on vascular wilt (Fusarium oxysporum f. sp. elaeidis), the most serious disease in Africa, the predominantly south American diseases of spear and bud rot and ringspot, and the African dry spear rot, all of unknown aetiology, and the devastating Marchitez disease associated with a flagellate protozoan are reviewed.*

- Renard J.L. & Quillec G. (1984 b). Les maladies graves du palmier à huiles en Afrique et en Amérique du Sud. [Serious oil palm diseases in Africa and in South America.]. *Oléagineux* 39: 57-67.

*In Africa, the most widespread disease is caused by Fusarium oxysporum f. sp. elaeidis. By pre-nursery inoculation, lines can be chosen with susceptibility below 60% of that of the control line (known for its good tolerance in the F1). Incidence can be reduced to 40% by bare soil cultivation. Young plants should be replanted 4.5 m from the site of old palms. In Latin America, chlorosis of young leaves and spur of bad rut, due to an unknown pathogen, is the main cause of death. Elaeis melanococca x oil palm is tolerant. Annular ring*

disease, of unknown aetiology, appears in young plantations where grasses predominate. A variant of this disease is transmitted by *Sogatella cubana* and/or *S. kolophon* in Africa. Removal of grasses reduces damage. Incidence of Marchitez, associated with protozoa in the phloem, is reduced by spraying the stem base with endrin twice yearly.

- Simons J.H. (1976). The important pests and diseases of egg-plant in the world and their significance for egg-plant improvement in Africa. *African Journal of Plant Protection* 1: 155-161.

- Singh K.B. & Maesen L.J.G. van der (1978). *Chickpea bibliography 1930-1974*. Hyderabad, India; ICRISAT, vi + 223 pp.

The section on diseases (pp. 119-137) of *Cicer arietinum* contains 407 references on general, bacterial, fungal and virus diseases, resistance and control measures.

- Sreenivasaprasad S., Brown A.E. & Mills P.R. (1993). Coffee berry disease pathogen in Africa: genetic structure and relationship to the group species *Colletotrichum gloeosporioides*. *Mycological Research* 97: 995-1000.

- Subrahmanyam P., Bosc J.P., Hassane H., Smith D.H., Mounkaila A., Ndunguru B.J. & Sankara P. (1992). Groundnut diseases in Niger and Burkina Faso. *Oléagineux, Paris* 47: 119-133.

Surveys were carried out in the major groundnut growing areas of Niger and Burkina Faso, including 73 fields in 1986 and 58 in 1987 in Niger, and 64 fields in 1987 in Burkina Faso. Seed and seedling diseases significantly reduced stand densities and yields in both countries.

- Tanner D.G.J. (Ed.) (1994). The 8<sup>th</sup> Regional Wheat Workshop for Eastern, Central and Southern Africa, Kampala, Uganda, June 7-10, 1993.

- Terrye R. & Oyekan J.O. (1976). Cassave diseases in Africa reviewed. *SPAN* 19: 116-118.

- Theberge R.L. (Ed.) (1985). *Common African pests and diseases of cassava, yam, sweet potato and cocoyam*. Ibadan, Nigeria; International Institute of Tropical Agriculture, 108 pp.

The common fungal and bacterial diseases and arthropod and nematode pests associated with the cultivation of cassava, yam, sweet potato and cocoyam (*Colocasia esculenta*) in Africa are described. This publication is illustrated with many colour photographs and is intended as a guide for growers in order to help identify production constraints. For each of the disease and nematode pests, information is provided on common names, range, host plants, symptoms of damage, spread and losses caused. For the arthropod pests, information is provided on common names, distribution, host plants, morphology, symptoms of damage, biology and pest status. Brief methods for the control of the arthropod pests and nematodes are outlined.

- Turkenstein L.J. (1989). *Widespread soil-borne fungal diseases of potato*. In Fungal diseases of the potato. Report of the planning conference on fungal diseases of potato held at CIP, Lima, Peru, 21-25 September 1987. Lima, Peru: International Potato Center: 159-167.

Results are presented of surveys carried out since 1979 on fungal diseases of potato in Africa, Asia and Latin America. An increase in the importance of *Verticillium albo-atrum*, *Fusarium solani* and *Spongospora subterranea* associated with lack of crop rotation and a proper seed inspection scheme is noted. In Tunisia, a particularly hot climate, *Macrophomina phaseoli* was of particular importance.

- Viennot-Bourgin G. (1949). *Les champignons parasites des plantes cultivées*. [The parasitic fungi of cultivated plants]. Tome I: xv + 755 pp.; Tome II: 755-1850 pp. Paris, Masson & Cie, Editeurs.

The first volume of this valuable and comprehensive text-book of fungi parasitic on cultivated plants in France and French colonies covers *Myxomycetes*, *Archimycetes*, *Phycomycetes* and *Ascomycetes*. The second volume deals with *Basidiomycetes* and *Fungi Imperfecti*. The general treatment is to deal with each fungus separately. The name of the organism is followed by its synonyms. Its geographical distribution is given, together with the hosts it attacks. The symptoms it causes are described, and its development and manner of spread are fully dealt with. This is followed by practical recommendations for control. The bibliographical references occupy 175 pages, and there is also a subject index.

- Virmani S.S., Sumo F.J. & Buddenhagen I.W. (1979). An improved blast-resistant rice cultivar for irrigated paddy in West Africa. *International Rice Research Newsletter* 4: 3.
- Watson I.A. & Sousa C.N.A. da (1983). Long distance transport of *Puccinia graminis-tritici* in the southern hemisphere. *Proceedings of the Linnean Society of New South Wales* 106: 311-321.

*Evidence is presented that viable uredospores of P. graminis f. sp. tritici reached Australia from Africa in 1968-69.*
- Williams R.J. (1976). A review of the major diseases of soybean and cowpea with special reference to geographical distribution, means of dissemination and control. *African Journal of Plant Protection* 1: 83-96.
- Wilson G.F. & Badenhagen I. (1986). The black sigatoka threat to plantain and banana in West Africa. *IITA Research Briefs* 7: 3. WARCORP, IITA. Ibadan, Nigeria.

*The spread of this devastating disease, caused by Mycosphaerella fijiensis, through Africa since 1974 is chronicled, an its presence confirmed in Nigeria in 1986 and subsequently also in the Ivory Coast and Ghana. Ways to combat the threat are discussed.*
- Yahyaoui A.H. & Sharp E.L. (1987). Virulence spectrum of *Puccinia hordei* in North Africa and the Middle East. *Plant Disease* 71: 597-598.

*New virulence types of P. hordei were detected in various regions of North Africa and the Middle East.*

## PART II – STATE SELECTED TITLES

### Algeria

- Guyot A.L. & Chevassut G. (1959). De quelques Uredinées d'Algérie. [On certain Uredinales of Algeria]. *Uredineana* 5 (*Encyclopédie mycologique*, 31, 1958): 385-400.

*Notes, descriptive and technical, are given on a number of Uredinales collected in Algeria during a two year period. Mention may be made of Puccinia allii on Allium chamaemoly, P. antirrhini on Antirrhinum majus, P. cichorii on chiory and Lactuca scariola, P. coronata on Avena alba and A. sterilis, P. graminis on Agropyron repens, P. hordei on Hordeum murinum, and P. poaememoralis on Poa annua.*
- Faurel L. & Schotter G. (1965; 1966). Notes mycologiques. II. Quelques champignons coprophiles des environs d'Alger ; III. Quelques champignons coprophiles du Sud-algérois ; IV. Champignons coprophiles du Sahara central et notamment de la Tefedest. [Mycological notes. II. Some coprophilous fungi from around the city of Alger; III. Some coprophilous fungi from the southern region of Alger city; IV. Coprophilous fungi of the central Sahara especially of the Tefedest region.]. *Revue de Mycologie, Paris* 29: 267-283; 284-295; 30: 141-165.
- Kellou R. & Dubost D. (1974). Organisation de la recherche et de la lutte contre le bayoud en Algérie. [Organisation of research on and control of "bayoud" in Algeria.]. *Bulletin d'Agronomie Saharienne* 1: 5-13.
- Narendra D.V., Nezzal L.T. & Santiago J.C. (1979). Blight of broad bean. *Phomopsis* blight of apricot. "Heart rot" of date palm. *FAO Plant Protection Bulletin* 27: 132-133.

*New records for Algeria include chocolate spot of broad bean caused by Botrytis fabae, Phomopsis blight of apricot caused by P. vexans and heart rot of date palm associated with Botryodiplodia theobromae.*
- Paul B. & Bouhizer H.N. (1986). *Pythium echinulatum* causing damping-off of cauliflower seedlings. *Phytopathologia Mediterranea* 25: 157-159.
- Paul B. & Zourkane A. (1987). Pre-emergence decay of green bean seeds caused by *Pythium aphanidermatum* in Algeria. *Phytopathologia Mediterranea* 26: 51-53.
- Paul B. (1987). A new species of *Pythium* with filamentous sporangia from Algeria. *Transactions of the British Mycological Society* 89: 195-198.

- Richiteanu A. (1991). Parasitic microfungi from north Algeria. *Revue Roumaine de Biologie, Série de Biologie Végétale* 36: 29-37.

*A total of 41 parasitic fungi belonging to the Peronosporales, Erysiphales and Ustilaginales collected from 60 plant species in north Algeria is listed. Data on fungal morphology, taxonomy and site and time of collection are included.*

### Angola

- Serafim F.D. & Serafim M.C. (1968). Lista des doenças de culturas de Angola. [List of diseases of crops in Angola]. *Nova Lisboa, Sér. Téc., Instituto Investigacao agronomica de Angola* 2: 1-22.

*Symptoms and distribution of the principal plant diseases are noted.*

- Pinto A. (1976). [Contribution to the study of Polyporaceae in Angola.]. *Boletim da Sociedade Portuguesa de Ciencias Naturalis* 16: 47-56 [Pt].

- Serafim F.D. & Serafim M.C. (1982). Annotated list of plant diseases in Angola. *Garcia de Orta, Estudos Agronomicos* 9: 321-332.

*Work done on plant pathological survey up to 1975 is summarized in a host list of the main diseases caused by fungi and bacteria.*

### Azores

- Bensaude M. (1926). Diseases of economic plants in the Azores. *Kew Bulletin* 1926: 381-389.

- Santos A.C. dos (1982). Micoflora do arquipélago dos Acores. [Mycoflora of the Azores archipelago.]. *Garcia de Orta, Estudos Agronomicos* 9: 139-142.

*Eleven fungi are described. Phomopsis alnea on birch and Pleospora herbarum on Cryptomeria japonica are new hosts records.*

- Gjaerum H.B. & Hansen A. (1983/1984). Additional Azorian rust species (Uredinales). *Garcia de Orta, Botanica* 6: 73-78.

*The species listed included 12 new to the Azores and some new host records.*

### Botswana

- Burke D.W., Conniff K., Ditshipi P. & Demooy C.J. (1986). Ashy stem blight, a serious disease of cowpea in Botswana. *Plant Disease* 70: 603.

*The disease caused by Macrophomina phaseolina is newly reported from Botswana where it severely damaged drought-stressed plants in all stages of growth.*

- Poswal M.A.T. & Kwerepe B.C. (1991). Plant protection in Botswana: the role of educational institutions. Working paper – *International Rural Development Centre, Swedish University of Agricultural Sciences* 165: 21-26.

*In this paper, which was presented at a conference on the improvement of plant protection in southern Africa, the authors discuss the short- and long-term roles of agriculturally related educational institutes in Botswana in the development of and adoption by resource-poor farmers of plant protection technologies.*

### Burkina Faso

- Subrahmanyam P., Sankara P., Bosc P.J. & Smith D.H. (1987). *Survey of groundnut diseases in Burkina Faso*. *International Arachis Newsletter* 2, 12 pp.

*A survey in September 1987 revealed the presence of severe outbreaks of early leaf spot in nearly all fields examined; all the cultivars grown are susceptible. Late leaf spot and rust were most serious in southern provinces. Pod rot was widespread but of low incidence. A high incidence of peanut clump virus disease was observed in two fields but the incidence of groundnut rosette was low. Other diseases included collar rot, aflaroot witches' broom, spotted wilt and ground nut mottle.*

- Thomas M.D. (1991). Development of gray leaf spot on sorghum in Burkina Faso. *Plant Disease* 75: 45-47.

### Burundi

• Detry J.F., Chapeaux J.P. & Tilquin J.P. (1991). Estimation of rice bacterial sheath brown rot (BSR) and rice blast (BI) severity in five Burundi highland swamps. *International Rice Research Newsletter* 16: 20-21.

*Details are given of the incidence of these diseases, caused by Pseudomonas fuscovaginae and Pyricularia grisea, respectively, on 24 cultivars at five swamp sites at altitudes of 1370-1560 m. The severity of the diseases was not sufficiently explained by climatic conditions.*

### Cameroon

• Hennings P. (1895; 1897; 1901). *Fungi camerunenses*. *Botanical Jahrbuch* 22: 72-111; 23: 537-558; 30: 39-57.

• Boidin J., Pignal M.C., Mermier F. & Arpin M. (1963). Quelques levures camerounaises. *Cahiers de la Maboké, Paris* 1: 86-101.

• Berthet P. & Boidin J. (1966). Observations sur quelques Hyménomycètes récoltés en République Camerounaise. [Observations on some Hymenomycetes collected in the Republic of Cameroon.]. *Cahiers de la Maboké, Paris* 4: 27-54.

• Tezenas du Montcel H. (1976). Observations sur la cercosporiose du bananier au Cameroun en 1974. Evaluation des possibilités d'avertissement. [Observations on *Cercospora* disease of banana in Cameroon in 1974. Evaluation of the possibilities of warning.]. *Fruits* A 31: 427-458.

• Daelmans A. (1990). Comparison of the epidemiology of *Cercospora* spp. on groundnuts (*Arachis hypogea* L.) in pure culture and on groundnuts intercropped with maize (*Zea mays* L.) in the forest zone of Cameroon. *Mededelingen van de Faculteit Landbouwwetenschappen Rijksuniversiteit Gent* 55: 239-251.

*This paper was presented at the 42<sup>nd</sup> International Symposium on Crop Protection held at Gent, Belgium, 8 May 1990.*

• Jones M.P., Jeutong F. & Tchatchoua J. (1991). Diseases of rice in Cameroon. *International Rice Research Newsletter* 16: 19-20.

*In the wet season of 1988 (July-December) and the dry season of 1989 (January-May) surveys of rice diseases were carried out in twenty locations in Cameroon. It is suggested that the relatively low incidence of diseases in the Northern Provinces may be due to several factors including high soil fertility, low relative humidity and higher wind velocities.*

• Jones M.P., Jeutong F. & Tchatchoua J. (1993). A survey of rice diseases in Cameroon. *Plant Disease* 77: 133-136.

• Fontem D.A. (1993). Survey of tomato diseases in Cameroon. *Tropicultura* 11: 87-90.

*A survey from November 1988 to October 1991 covered fourteen nurseries and 67 fields in Cameroon. All the nurseries were affected by late blight (Phytophthora infestans) in the wet season, early blight (Alternaria solani) in the dry season and damping-off caused by Pythium spp., Rhizoctonia solani and Verticillium alboatrum. Of eleven diseases observed in the field, A. solani and P. infestans caused the most severe symptoms on leaves and fruits. A further nine pathogens were also associated with fruits.*

### Canary Islands

• Urries M.J. de (1957). *Hongos microscopicos de Canarias*. [Microfungi of the Canary Islands]. Museo Canario 57-64 (1956-57), 140 pp.

• Jørstad I. (1958). *Uredinales of the Canary Islands*. Skrifter utgitt av der norske videnskaps-akademi i Oslo. Matematisk-naturvidenskapelig klasse, N.S., 1, 182 pp.

*This account, based on material collected in 1954 and 1957, enumerates 82 species in alphabetical order and a discussion is followed by notes on life histories, relative distribution, and comparisons with other rust floras. A host index is appended.*

- Jørstad I. (1962). *Parasitic micromycetes from the Canary Islands*. Skrifter utgitt av der norske videnskaps-akademi i Oslo. Matematisk-naturvidenskapelig klasse, N.S., 7, 71 pp.

*This paper gives details of collections other than Uredinales though it includes some additions and corrections to these. There is also a list of 236 hosts with their parasites.*

- Jørstad I. (1966). Parasitic fungi from the Canary chiefly collected by T. Lid, with a note on *Schizophyllum commune*. *Blyttia* 24 : 222-231.

- Hernandez Hernandez J.M., Gallo Llobot L. & Jaime Vega M.C. (1985). [A preliminary study of the fungal species associated with pineapple, papaya, and mango in the Canary Islands.]. *Annales del Instituto Nacional e Investigaciones Agrarias. Agricola* 28 (Suppl.), pp. 171-180. [Es., En.].

*This paper is a synthesis of three papers presented at the 13<sup>th</sup> NORCOFEL Congress (Tenerife 1983). Symptoms and causal fungi are described.*

- Hernandez Hernandez J.M. & Sala Mayato L. (1989). Trials for the control of postharvest rots of papaya (*Carica papaya* L.) in the Canary Islands. *Acta Horticulturae* 258: 317-320.

### Cape Verde

- Gjaerum H.B. (1984). Rust fungi (Uredinales) from Cape Verde Islands. *Botanica Macaronica* 12-13: 123-138.

*Of the 23 rust taxa reported seven are new to Macaronesia and twelve to Cape Verde. The total number of rusts known from these islands is now 27. Eragrostis barrelieri represents a new host genus for Puccinia cynodontis.*

### Central African (Republic of)

- Heim R. (1963; 1964). Les Termitomycètes de la république Centrafricaine I – Les relations entre l’insecte et les champignons; La nomenclature mycologique des Lissongos; Champignons consommés par les Pygmées de République Centrafricaine. [The Termitomyces of the Central African Republic I – Fungus-insects relationships; The mycological nomenclature of the Lissongos; Mushrooms consumed by Pygmies of the Central African Republic.]. *Cahiers de la Maboké, Paris* 1: 20-26; 77-85; 2: 93-108.

- Heim R. (1966; 1967; 1969; 1971). Etude de mycologie Centrafricaine. I – Le mosso kodo, réputé mortel et son sosie ; II – La grande columelle d’Afrique équatoriale : *Leucocoprinus africanus* Heim, nov. sp. ; III – La Coulemelle à bulbe tranchant d’Afrique centrale : *Leucocoprinus abruptibulbus* Heim (= *Macrolepiota abruptibulba*) ; IV – Le Tricholome géant d’Afrique équatoriale : *Tricholoma lobayensis*, nov. sp. ; V – Un genre nouveau leucosporé à spores gibbeuses ; VI – Présence du genre *Pseudofavolus* Patouillard en Afrique Centrale. [Studies on Central African mycology. I – The fatal mosso kodo and his counterpart; II – The large columella of equatorial Africa: *Leucocoprinus africanus* Heim sp. nov.; III – The columella with cutting bulbs of Central Africa: *Leucocoprinus abruptibulbus* Heim (= *Macrolepiota abruptibulba*); IV – The giant *Tricholoma* of equatorial Africa: *Tricholoma lobayensis* sp. nov.; V – A new leucosporoid genus with gibbous spores; VI – The genus *Pseudofavolus* Patouillard in Central Africa.]. *Cahiers de la Maboké, Paris* 4: 85-93; 5: 63-66; 7: 15-20; 77-81; 83-85; 9: 39-51.

- Heim R. (1967). Note sur cinq timbres concernant les champignons de la République Centrafricaine. [A note on five stamps depicting mushrooms of the Central African Republic.]. *Cahiers de la Maboké, Paris* 5: 67-69.

- Heim R. (1967). Les Agarics à hyménium tubulé de la République Centrafricaine. I. Formes mycénoïdes et collybioides ; II. Formes marasmioides. [The Agarics with tubulated hymenium of the Republic of Central Africa. I. Mycenoid and collybioid forms; II. Marasmioid forms.]. *Cahiers de la Maboké, Paris* 5: 5-22; 5: 57-62.

- Boidin J. (1966; 1967; 1970). Basidiomycètes Corticiaceae de la République Centrafricaine. I – Le genre *Gloeocystidiellum* Donk ; Basidiomycètes Auriscalpiaceae de la République Centrafricaine ; Basidiomycètes Podoscyphaceae de la République

Centrafricaine ; Basidiomycètes Lachnocladiaceae de la République Centrafricaine ; Basidiomycètes Corticiaceae de la République Centrafricaine ; II. Les genres *Botryobasidium* Donk et *Candelabrochaete*, nov. gen. [Corticiaceous Basidiomycetes of the Central African Republic. I – The genus *Gloeocystidiellum* Donk; Auriscalpiaceus Basidiomycetes of the Central African Republic; Podoscyphaceous Basidiomycetes of the Central African Republic; Lachnocladiaceous Basidiomycetes of the Central African Republic; Corticiaceous Basidiomycetes of the Central African Republic; II – The genera *Botryobasidium* Donk and *Candelabrochaete*, gen. nov.]. *Cahiers de la Maboké, Paris* 4: 5-17; 18-25; 94-109; 5: 23-35; 8: 17-25.

- Nicot J. (1966; 1967; 1968; 1969). Micromycètes saprophytes de La Maboké. I – *Phialophora richardsiae* (Nannf.) Conant ; II – *Gliocephalotrichum bulbillum* Ell. & Hess. ; III – *Paecilomyces fusidioides*, sp. nov. ; IV – *Dendryphiella vinosa* (Berk. & Curt.) O. Reisinger. [Saprophytic micromycetes of the Maboké. I – *Phialophora richardsiae* (Nannf.) Conant; II – *Gliocephalotrichum bulbillum* Ell. & Hess.; III – *Paecilomyces fusidioides*, sp. nov.; IV – *Dendryphiella vinosa* (Berk. & Curt.) O. Reisinger.]. *Cahiers de la Maboké, Paris* 4: 110-113; 5: 71-75; 6: 17-18; 7: 21-25.

- Pignal M.-C. (1968). Quelques levures associées à des insectes xylophages de la République Centrafricaine. Etude des levures isolées d'insectes et de bois infestés de République Centrafricaine. [On some yeasts associated with xylophagous insects of the Central African Republic. Study of yeasts isolated from infested insects and woods in the Central African Republic.]. *Cahiers de la Maboké, Paris* 6: 5-15.

- Cailleux R. (1968; 1969; 1970; 1971). Champignons stercoraux de République Centrafricaine. I – *Lacunospora stercoraria*, n. g., n. sp. ; II – Deux curieux *Podospora* ; III – *Podospora* nouveaux ; IV – *Tripterospora* ; V – *Podospora* et *Zygopleurage*, espèces rencontrées, écologie. [Stercorareus fungi of the Central African Republic. I – *Lacunospora stercoraria* nov. gen., nov. sp.; II – Two interesting *Podospora* species; III – New *Podosporae*; IV – *Tripterospora*; V – The genera *Podospora* and *Zygopleurage*: species recorded and their ecology.]. *Cahiers de la Maboké, Paris* 6: 91-98; 7: 5-14; 7: 87-102; 8: 5-16; 9: 11-26.

- Maas Gesteranus R.A. (1970). A propos d'un *Cristella* de la République Centrafricaine. [About a species of *Cristella* of the Central African Republic.]. *Cahiers de la Maboké, Paris* 8: 27-31.

- Boidin J. & Lanquetin P. (1971). Basidiomycètes Corticiaceae de la République Centrafricaine. III – Le genre *Hypochnicium* Eriksson. [Corticoid Basidiomycetes of the Central African Republic. III – The genus *Hypochnicium* Eriksson.]. *Cahiers de la Maboké, Paris* 9: 89-93.

- Cailleux R. (1971). Recherches sur la mycoflore coprophile centrafricaine. Les genres *Sordaria*, *Gelasinospora*, *Bombardia*. Ecologie. [Investigations on the coprophilous mycoflora of the Central African Republic. The genera *Sordaria*, *Gelasinospora* and *Bombardia*. Ecology.]. *Bulletin Trimestriel de la Société Mycologique de France* 87: 461-626.

- Saccas A.M. (1981). *Etude de la flore cryptogamique des caféiers en Afrique centrale*. [Study of the cryptogamic flora of coffee trees in Central Africa.]. Bulletin de l'Institut Français du Café et du Cacao No. 16, 522 pp. (138 figs). ORSTOM, Paris, France.

*Detailed descriptions are provided for each of the 124 species, with macroscopic and microscopic characters, distribution and taxonomic notes. All are saprophytes or secondary parasites and 80 are newly described species.*

- Vanos V. (1988). *Preliminary microbial ecological studies in "rio-taste" coffee beans*. In Twelfth International Scientific Colloquium on Coffee. Paris, France: Association Scientifique Internationale du Café (1988): 353-376.

*The microbial flora was studied of coffee bean samples from Puerto Rico, Central African Republic and Brazil with the characteristic off-flavour attributed to anisole compounds. This paper was presented at the Colloquium held in Montreux, Switzerland on 29 June-3 July 1987.*

- Hennebert G.L., Tshinyangu K., Nieuwenhuysen van G.L. & Baert W. (1994). *Potential for the cultivation of Pleurotus species in Central Africa: substrates, yield, and nutritional quality*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 719-728.

### Congo (Republic of)

- Heinemann P. (1971). Quelques Psalliotes du Congo-Brazzaville. [On some *Psalliota* of Congo-Brazzaville.]. *Cahiers de la Maboké, Paris* 9: 5-10.
- Makambila C. (1986). Une nouvelle maladie de la baselle (*Basella* sp.) au Congo. [A new disease of *Basella* sp. in the Congo.]. *Agronomie Tropicale* 41: 69-74.  
*A rust disease (Uredinales) characterized by yellowish orange spots on leaves of B. alba and B. sp., aeciospores alone appearing at this stage. Removal of infected leaves and plants is suggested for control.*
- Makambila C. & Bakala L. (1986). Les pourridiées à *Armillaria* sp., *Sphaerostilbe repens* Berk. & Broome et *Phaeolus manihotis* Heim sur le manioc (*Manihot esculenta* Crantz.). [Cassava (*Manihot esculenta* Crantz.) rots due to *Armillaria* sp., *Sphaerostilbe repens* Berk. & Broome, and *Phaeolus manihotis* Heim.]. *Agronomie Tropicale* 41: 258-264.  
*These fungi were found to be the main pathogens of cassava in the Congo.*

### Egypt (Arab Republic of)

- Reichert I. (1921). Die Pilzflora Ägyptens. Eine mykogeographische Studie. [The fungus flora of Egypt. A mycogeographic study.]. *Botanische Jahrbücher* 56: 598-727.
- Sabet Y.S. (1935). A preliminary study of Egyptian soil fungi. *Bulletin of the Faculty of Science, The Egyptian University, Cairo (Imprimerie MISR S.A.E.)* 5: 1-29.
- Sabet Y.S. (1939). On some fungi isolated from soil in Egypt. *Bulletin of the Faculty of Science, Fouad I University, Egyptian University, Cairo* 19: 1-112.
- Sabet K.A., Samra A.S., Hingorani M.K. & Mansour I.M. (1961). Stalk and root rot of maize in United Arab Republic. *FAO Plant Protection Bulletin* 9: 121-125.
- El-Helaly A.F., Ibrahim I.A., Assawah M.W., Elarosi H.M., Abou-El-Dahab M.K., Michail S.H. & Abd-El-Rahim M.A. (1963). General survey of plant diseases and pathogenic organisms in the U.A.R. (Egypt) until 1962. *Research Bulletin, Faculty of Agriculture, Alexandria University* 8: 1-107.  
*A host-pathogen list under botanic host names in alphabetic order is followed by indexes of pathogens, host names in Latin and Arabic, and a list of references.*
- El-Helaly A.F. & Elarosi H.M. (1964). Effect of environmental conditions on distribution of plant diseases in the United Arab Republic (Egypt). *Phytophologia Mediterranea* 3: 177-180.  
*The influence of temperature, R.H., and the height of the subsoil water table on the distribution of diseases in the cultivated areas, mostly bordering the Nile, was studied. The incidence of most diseases decreased southwards from a maximum in the Delta region. Sclerotium cepivorum on onion deviated from this pattern occurring both in upper and middle Egypt, and is expected to spread throughout the country, necessitating local quarantine legislation.*
- Ali Hassanein M.D.E., Morsi A.A.E. & El-Sherif M.A.E. (1972). *Annotated bibliography of agricultural studies conducted in Egypt. Part I (1900-1970)*. Egyptian Academy of Science and Technology, National Centre of Publication and Documentation, El-Tahrir St., El-Dokki, Cairo, 489 pp.  
*References of notes published in English and Arabic are respectively reproduced in the same language; annotations are in Arabic.*
- Assawah M.W. & Tarabieh A.M. [1974 (1976)]. Fungal diseases of begonias in Egypt. *Egyptian Journal of Phytopathology* 6: 39-45.  
*Fungal diseases found on Begonia species raised in nurseries and glasshouses in Alexandria are described.*
- Abdel-Hak T., Ghobrial E. & Sabet T. (1975). Studies on the control of covered smut of barley *Ustilago hordei* (Pers.) Lager., in A.R.E. *Agricultural Research Review (Cairo)* 53: 53-60.
- El-Shehedi A.A., Satour M.M., Abdou Y.A. & Hassan M.M. (1976). Studies on *Phytophthora* root and crown rot of sesame. *Egyptian Journal of Phytopathology* 8: 1-8.

*Details are given of field and glasshouse studies on P. nicotianae var. parasitica on sesame and other hosts.*

- Michail S.H. & Tarabieh A.M. (1976). New records of powdery mildews on certain ornamental plants. *Acta Phytopathologica Academiae Scientiarum Hungaricae* 11: 53-57.

- Abol-Wafa M.T., Kamara A.M., Tarabieh A.M. & Shehata M.R. (1976). Fungicidal control of cucumber powdery mildew. *Egyptian Journal of Phytopathology* 8: 47-54.

- Abdel-Sattar M.A., Satour M.M. & El-Shehedi A.A. (1977). *Ceratocystis* fruit rot disease of banana in Egypt. *Agricultural Research Review (Cairo)* 55: 79-85.

*An account of the symptoms, pathogenecity and varietal reaction of banana cultivars to the disease caused by C. paradoxa.*

- Abd-Elrazik A.A., Sellam M.A. & Rushdi M.H. (1977). Occurrence of blasting disease of onion seed-head in A.R.E. *Egyptian Journal of Phytopathology* 9: 65-69.

*Studies on the cause of this disease, and of neck rot (Botrytis allii), show the former to be a new disease of B. allii.*

- Tarabieh A.M. (1977). New fungal diseases of medicinal and ornamental plants in Egypt. *Egyptian Journal of Phytopathology* 9: 75-79.

*Eight new diseases are described.*

- Ghobrial E., Hammouda A.M., Abdel-Khalek R. & Mostapha E.E. (1977). Studies on the control of powdery mildew of barley in A.R.E. *Agricultural Research Review (Cairo)* 55: 31-38.

- Moustafa A.K. & Aboutaleb E.M. (1977). Effect of groundnut fruit rot fungal organisms in causing damping-off disease and its control. *Alexandria Journal of Agricultural Research* 25: 325-329.

- Aboutaleb E.M. & Moustafa A.K. (1977). Studies on certain root and fruit rots of groundnut in A.R.E. *Alexandria Journal of Agricultural Research* 25: 331-336.

*Pathogenecity tests with fungi isolated from diseased groundnut fruit are described.*

- Tarabieh A.M. & Michail S.H. (1978). Inflorescence and leaf blight induced by *Botrytis cinerea* on sunflower, in Egypt. *Phytopathologia Mediterranea* 17: 196-197.

*The disease, first recorded in 1972, has become common. In fungicide tests Vitavax (carboxin) at 0.02% a.i. was the most inhibitory to growth of B. cinerea in culture. Daconil (chlorothalonil) at 0.2% a.i. gave the best protection when applied on leaves before inoculation.*

- Dawood N.A. & Sabet K.A. (1979). Effect of organic amendment and fungicidal application on the population of soil mycoflora with the late-wilt disease of maize. *Annals of Agricultural Science Moshtohor* 11: 217-227.

*Organic amendments stimulated the population of soil bacteria and actinomycetes, resulting in an appreciable decrease in the incidence of Cephalosporium (Acremonium) maydis.*

- Nassar M.A. & Attia Y.M. (1979). *Histopathology and virulence test of cotton Fusarium wilt in Egypt.* Research Bulletin of the Faculty of Agriculture, Ain Shams University, 112, 12 pp.

- Michail S.H., Al-Menoufi O.A. & Abo-Taleb E.A. (1979). Seed health testing, leaf spot and damping-off of certain crucifers in Egypt. *Acta Phytopathologica Academiae Scientiarum Hungaricae* 14: 41-48.

*Cabbage, cauliflower, turnip and radish seeds yielded Alternaria brassicicola, A. raphani, Fusarium equiseti and Phoma oleracea. Leaf spots and damped-off seedlings yielded the Alternaria species while Rhizoctonia solani was isolated from seedlings. The Alternaria species were unspecific, each causing both leaf and seedling infections, but A. brassicicola and A. raphani were more pathogenic on cabbage and radish, respectively.*

- Ibrahim A. & Nassib A. (1979). *Screening for disease resistance in broad beans (Vicia faba) in Egypt.* In FABIS, Faba (Broad) Bean Information Service, Newsletter (G. Hawtin, R. Stewart & H. Ibrahim, eds.), 1, 44 pp.

- Mohamed H.A., Ibrahim A.N., Abdelal H.R., Zaher E.A. & Omar S.A. (1980). Seedling diseases of clover in Egypt. *Agricultural Research Review (Cairo)* 58: 65-78.

*A survey of Egyptian clover from different localities showed that of the many fungi isolated, Rhizoctonia solani, Fusarium oxysporum and Pythium debaryanum were the most virulent and R. solani caused the most pre-emergence damage.*

- Zayed M.A., El-Saied H.M., Ali A.S. & Saied K.S. (1980). Reaction of olive cultivars to *Cyclonium oleaginum* Cast., and chemical control of the leaf spot disease in Egypt. *Egyptian Journal of Phytopathology* 12: 49-56.
- Manzanillo and Shemlali olives were highly resistant to the fungus whereas Missioe was highly susceptible. Resistance could not be attributed to anatomical features of the leaf. Bordeaux sprays every 15 days from the beginning of October to the end of February gave control.
- Waked M.Y., El-Samra I.A. & Fayed M.A. (1981). Histological studies on cotton seeds infected with some rotting fungi. *Phytopathologia Mediterranea* 20: 136-140.
- El-Tobshy Z.M., El-Sayed E.I., Rammah A. & Abd El-Sattar M.A. (1981). Pathogenicity and control of three fungi associated with damping-off and root-rot of the Egyptian clover *Trifolium alexandrinum*. I. Research Bulletin, Faculty of Agriculture, Ain Shams University 167, 14 pp.
- El-Tobshy Z.M., El-Sayed E.I., Abd El-Sattar M.A. & Rammah A. (1981). Pathogenicity and control of three fungi associated with damping-off and root-rot of the Egyptian clover *Trifolium alexandrinum*. II. Research Bulletin, Faculty of Agriculture, Ain Shams University 171, 11 pp.
- Badawy M.F. & Abdelal H.R. (1982). Studies on inflorescences rot disease of palm and its control in Sinai Peninsula. Research Bulletin, Faculty of Agriculture, Ain Shams University 189, 12 pp.
- Date palm inflorescences with rot symptoms yielded isolates of *Mauginiella scaetiae*. In pathogenicity tests both male and female inflorescences were highly susceptible. The pathogen occurred in all the localities investigated in the Sinai Peninsula, incidence ranging from 5.7 to 38.64%. Coprochem or copper oxychloride applied 4 days before infection gave the best control.
- Mohamed H.A.R. (1982). Major disease problems of faba bean in Egypt. In Faba Bean Improvement (G. Hawtin & C. Webb, eds). The Hague, Netherlands, Martinus Nijhoff: 213-225.
- The incidence of the main foliar diseases, varietal reactions to them and the comparative effects of agricultural practices (planting date, planting density and fertilizer applications) are discussed.
- El-Fahl A.M., Abdelal H.R., Ghobrial E., Shata H.M. & Hammouda A.M. (1982). Pathogenic races of *Helminthosporium teres* in Egypt. Research Bulletin, Faculty of Agriculture, Ain Shams University 184, 13 pp.
- Of 21 pathogenic races of *H. teres* identified on barley, using 6 differential cultivars, 17 were detected in Egypt for the first time. The most widespread race was Ht 1, representing c. 31% of isolates, followed by Ht 17 (13%). When two differentials were used these races were reduced to four.
- Sheir H.M., Shehata M.R., El-Goorani M.N. & El-Allaf S.M. (1982). Wilt and stem rot disease of carnation in Egypt. *Acta Phytopathologica Academiae Scientiarum Hungaricae* 17: 101-110.
- Fusarium moniliforme*, *F. oxysporum*, *F. equiseti* and *Rhizoctonia solani* were isolated from plants with wilt and stem rot symptoms. *Rhizoctonia* and *Fusarium* species were isolated together from 38% of the samples. Results indicated that the disease is a complex caused by one or more of the fungi. The cultivar William Red Sim was highly susceptible and Hobby Elliot was highly resistant. Preliminary tests indicated the total phenol accumulation in stems of healthy plants was greater in the latter than in the former.
- Seoud M.B., El-Alfy K.A., Thoma A.T. & El-Dib A.A. [1982 (1984)]. Further studies on the control of peg and pod rots of peanuts in Egypt. *Agricultural Research Review* 60: 127-139.
- Seoud M.B., El-Dib A.A., El-Wakil A.A., El-Gawwad M.A.A. & Thoma A.T. [1982 (1984)]. Chemical control of root rot and wilt diseases of sesame in Egypt. *Agricultural Research Review* 60: 117-126.
- Fahim M.M., Barakat F.M., Attia M.F. & Aly H.Y. [1982 (1985)]. Fungi associated with stored sorghum grains and their role in grain deterioration. *Egyptian Journal of Phytopathology* 14: 39-49.
- El-Nasr H.I.S. & Leath K.T. (1983). Foliar diseases of alfalfa in Egypt. *Plant Disease* 67: 694-695.

- Abo El-Dahab M.K., El-Goorani M.A. & Shoib A.A. (1983). New leaf spot disease of banana in Egypt. *Phytopathologia Mediterranea* 22: 47-48.
- Drechslera australiensis is reported for the first time in Egypt, causing eyespot symptoms on banana leaves similar to those caused by *D. gigantea* in Jamaica.
- Morsy A.A., Radwan A.S., Sahab A.F., Diar M.M. & Abdel-Khalek S.M. [1983 (1986)]. Fungi associated with *Ammi majus* fruits and their effect on coumarins during storage. *Egyptian Journal of Phytopathology* 15: 47-54.
- Abdel-Moneim A.M., Yehia A.H. & El-Wakil A.A. [1984 (1986)]. *Ascochaeta rabiei*, a new seed-borne pathogen of chick-pea in South Tahreer, Egypt. *Egyptian Journal of Phytopathology* 16: 1-10.
- Rizk A.M., Hammouda F.M., El-Missiry M.M., Mayergi H.A., Lashin S.M. & Nofal M.A. (1985). Mycotoxins of *Lolium* seeds in response to fungal infection. *Annals of Agricultural Science, Ain Shams University* 30: 607-615.
- Fungi isolated from the seeds of *Lolium temulentum* and *L. perenne* collected from Delta, Egypt were identified as *Alternaria alternata*, *Alternaria* spp., *Stemphylium globuliferum* and *Stemphylium* spp. and *Helminthosporium* spp.
- Mazen M.B., Moubasher A.H. & El-Sharouny H.M. [1985 (1986)]. Studies on the genus *Pythium* in Egypt. V. Test of pathogenicity of some common root-infecting fungi. *Acta Mycologica, Warszawa* 21: 117-123.
- In studies with various *Pythium* and *Fusarium* spp. and *Rhizoctonia solani* on cotton, pea, tomato, maize and wheat, *P. ultimum* was most pathogenic to tomato and cotton seedlings. The four *F.* spp. varied considerably in pathogenicity. An isolate of *R. solani* from cotton was highly pathogenic to cotton and pea and another from soil was highly pathogenic to all the test plants.
- Michail S.H., El-Sayed A.B., Salem M.A. (1986). *Fusarium* post-emergence damping-off of *Eucalyptus* and its control measures in Egypt. *Acta Phytopathologica et Entomologica Hungarica* 21: 127-133.
- *F. solani* was seed-borne in *Eucalyptus* and caused post-emergence damping-off of ten *Eucalyptus* spp. tested.
- Malençon G. (1984). *Phallus roseus* A. Delile 1913, alias *Itajahya rosea* (Delile) Ed. Fischer 1929. *Bulletin Trimestriel de la Société Mycologique de France* 100: 15-33.
- Satour M.M., Abdel-Rehim M.F., El-Yamani T., Radwan A., Grinstein A., Rabinowitch H.D. & Katan J. (1989). Soil solarization in onion fields in Egypt and Israël: short- and long-term effects. *Acta Horticulturae* 255: 151-159.
- El-Khadem M. (1990). Aflatoxins in Egyptian peanut. An overview. *Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz* 97: 233-236.
- A survey of groundnuts from Egypt showed 19.5% of unshelled and 49.0% of shelled samples to contain low levels of aflatoxins B1, B2, G1 and G2; only B1 was detected in roasted samples (3.5%). It is considered imperative to discard groundnuts with cracked shells before storage.
- Rizk R.A., El-Ghamry M., Noaman M.M., El-Nasher F. & Khalifa M.M. (1991). Survey and determination of barley fungal and viral diseases along the northwest coast and North Sinai. *Assiut Journal of Agricultural Sciences* 22: 143-151.
- Moubasher A.H. (1993). *Soil fungi of Qatar and other Arab Countries*. The Scientific and Applied Research Centre, University of Qatar, 566 pp.
- Includes data derived from the authors' research on the biology of soil-borne fungi in Egypt.

## Erythrea (see Ethiopia)

### Ethiopia

- Stewart R.B. & Yirgou D. (1967). *Index of plant diseases in Ethiopia*. Bulletin of the Experimental Station, College of Agriculture, Haile Selassie University 30, 95 pp.
- This list incorporates earlier ones and new records from the authors' collections and other publications.

- Madumarov T.M. & Gorshkov A.K. (1978). Alternate hosts of rust fungi, *Puccinia* species and *Uromyces eragrostidis*, which infect cereals in Ethiopia. *Ethiopian Journal of Science* 1: 123-126.

*Aecial pustules probably of U. eragrostidis which causes leaf rust of Eragrostis tef, were observed on Anthericum angustifolium.*

- Mengistu A. & Sinclair J.B. (1979). Seedborne microorganisms of Ethiopian-grown soybean and chickpea seeds. *Plant Disease Reporter* 63: 616-619.

*Bacillus subtilis and 38 genera of fungi were associated with soybean seedlots of 16 cultivars grown in Ethiopia and plated on PDA.*

- Graaff A. van der (1981). *Selection of arabica coffee types resistant to coffee berry disease in Ethiopia*. Mededelingen Landbouwhogeschool Wageningen No. 81-11, 110 pp.

*A research programme executed in Ethiopia to obtain Coffea arabica types possessing durable resistance to coffee berry disease (Glomerella cingulata), adequate resistance to other diseases and pests and a reasonable yield and quality potential is described.*

- Bhat D.J. (1983; 1985). An undescribed species of *Pleiochaeta* from Asmara, Ethiopia; Notes on *Paathramaya* and *Panchanania*. *Transactions of the British Mycological Society* 81: 405-406; 85: 101-106.

- Bhat D.J. & Sutton B.C. (1985). Some "phialidic" hyphomycetes from Ethiopia. New and interesting hyphomycetes from Ethiopia. *Transactions of the British Mycological Society* 84: 723-730; 85: 107-122.

- Negassa M. (1985). Genetics of resistance to powdery mildew in some Ethiopian barley. *Hereditas*, Sweden 102: 123-138.

- Tsedeke Abate (Ed.) (1986). *A review of crop protection research in Ethiopia*. Proceedings of the First Ethiopian Crop Protection Symposium, 4-7 February 1985, Addis Abeba, Ethiopia. Addis Abeba, Ethiopia: Institute of Agricultural Research ix + 685 pp.

*Papers are published that were presented on maize and sorghum protection, small cereal protection, coffee protection, fibre crop protection, fruit crop protection, oil crop protection, grain legume protection, root and tuber crop protection, vegetable crop protection, parasitic weeds and vertebrate crop management, seed pathology and plant quarantine and stored product pest management and biological control in Ethiopia.*

- Assefa H. (1987). Haricot bean diseases and their importance in Ethiopia. *Ethiopian Journal of Agricultural Sciences* 9: 55-66.

- Meseret W. (1987). Variation in physiologic groups of *Coffea arabica* L. for resistance to rust (*Hemileia vastatrix* Berk. & Broome) and their patterns of distribution in Ethiopia. *PGRC / E-ILCA Germplasm Newsletter, International Livestock Centre for Africa* 15: 13-19 (Coffee Plantation Development Cooperation, Addis Abeba, Ethiopia).

*Seeds were collected from apparently rust-free trees in several areas and the seedlings produced from them (a total of 979) were tested for resistance to 30 physiological races of H. vastatrix.*

- Kranz J. (1988). Research on the diffusion and control of coffee berry disease in Ethiopia. *Plant Research and Development* 27: 105-114.

*The rapid spread of coffee berry disease caused by Colletotrichum coffeanum in the western provinces of Ethiopia since 1971 and its control are discussed.*

## Gabon

- Barat H. (1966). *Notes de phytopathologie Gabonnoise (Mission du 20-26 juillet 1966)*. [Notes on plant diseases in Gabon. (Survey of 20-26 July 1966).]. Institut de Recherches Agronomiques Tropicale (IRAT), Cultures Vivrières, 15 pp.

*Important among diseases in the country are Pseudomonas solanacearum and Cercospora sp. on and blossom end rot of tomato, and Pseudoperonospora cubensis on melon. Also noted are Uromyces appendiculatus and Corticium (Sclerotium) rolfsii on haricot bean (Phaseolus vulgaris), Pseudomonas solanacearum on eggplant and pepper (Capsicum), Cercospora sp. on pimento, Helminthosporium sp. and Colletotrichum sp. on*

*papaw*, *Cercospora abelmoschi* on *okra* (*Hibiscus esculentus*), and *C. henningsii* and *Colletotrichum gloeosporioides* (*Glomerella cingulata*) on *cassava*.

- Heim R. (1968). Notes de mycologie gabonaise. I – Un *Inocybe* à bulbe sclérotique de la forêt secondaire gabonaise. II – Un Agaric aux lames vermiciformes. *Cahiers de la Maboké, Paris* 6: 81-85; 86-90.

- Yen J.-M. & Gilles G. (1970). Les Urédinées du Gabon. III – Un nouveau *Puccinia* parasite d'*Aframomum* : *P. aframomigigantei* Yen & Gilles (nov. sp.) ; Les *Cercospora* du Gabon I. *Cahiers de la Maboké, Paris* 8: 37-40; 73-92.

- Yen J.-M. & Sulmont Ph. (1970; 1971). Un nouvel *Acrodictys* du Gabon : *Acrodictys elaeidis* (nov. sp.) ; Deux espèces nouvelles de *Meliola* au Gabon. *Cahiers de la Maboké, Paris* 8: 33-35; 9: 117-120.

- Yen J.-M. (1971). Les *Cercospora* du Gabon. II; Les *Cercospora* du Gabon. III. *Cahiers de la Maboké, Paris* 9: 27-38; 101-115.

- Fouré E. (1983 ?). Les cercosporioses du bananier et leurs traitements. Sélection de molécules fongicides nouvelles. Activités comparées de différentes molécules fongicides sur *Mycosphaerella fijiensis* Morelet, agent de la “maladie des raies noires” des bananiers et plantains au Gabon. [*Cercospora* diseases of banana and their treatments. Selection of new fungicide molecules. Comparative activities of different fungicide molecules on *Mycosphaerella fijiensis* Morelet, agent of black streak disease of banana and plantain in Gabon.]. *Fruits* 38: 21-34.

*Highly satisfactory results were obtained with propiconazole and tridimefon, but the rate of application, and so the efficiency of treatment, varied greatly with climatic conditions.*

- Manier P.D. (1984). Rice pests in the Gabon. *International Rice Commission Newsletter* 33: 43-47. Project FAO / CAB / 75 / 003 “CIAM”. BP 2185, Libreville, Gabon.

*At the present stage of rice cultivation in this country there are few diseases. Although blast is a limiting factor in irrigated crops, its potential threat is negated by the incorporation of African resistant germplasm with Asian imported high-yielding cultivars. Rain rice is affected by brown spot, sheath blight narrow brown leaf spot, false smut and bacterial blight.*

- Fouré E. (1985). Les cercosporioses du bananier et leurs traitements. Comportements des variétés. Etude de la sensibilité variétale des bananiers et plantains à *Mycosphaerella fijiensis* Morelet au Gabon (maladie des raies noires). (Suite III.). [*Cercospora* diseases of banana and their treatments. Behaviour of varieties. Study of the varietal susceptibility of bananas and plantains to *Mycosphaerella fijiensis* Morelet in Gabon (black streak disease). Part III.]. *Fruits* 40: 393-399.

### Ghana (Gold Coast)

- Dade H.A. (1940). A revised list of Gold Coast fungi and plant diseases. *Kew Bulletin* 1940: 205-247.

- Hughes S.J. (1952). Fungi from the Gold Coast. I; Fungi from the Gold Coast. II. *Mycological Papers* 48: 1-91; 50: 1-104.

- Leather R.L. (1959). *Diseases of economic plants in Ghana other than Cacao*. Bulletin, Ministry of Food and Agriculture, Ghana 1, vii + 40 pp.

*This useful publication brings up to date an earlier work by Bunting and Date, long out of print. After a short introductory section on plant diseases and their control in general, the crops concerned are listed in alphabetical order and their principle diseases, with control methods, are described in simple terms. The whole is based on departemental records and the writer's own observations.*

- Piening L.J. (1962). *A check list of fungi recorded from Ghana*. Bulletin, Ministry of Agriculture, Ghana 2, vii+ 130 pp.

*Pathogen-host and host-pathogen lists of records up to 1958.*

- Dakwa J.T. (1976). The effects of shade and NPK fertilizers on the incidence of cocoa black pod diseases in Ghana. *Ghana Journal of Agricultural Science* 9: 179-184.

*In field experiments in 1965-72 at Tafo the incidence of *Phytophthora palmivora* was higher on cocoa plots with medium or dense shade than on those without shade.*

- Dakwa J.T. & Danquah O.-A. (1978). A *Colletotrichum* leaf blight of cocoa in Ghana. *Plant Disease Reporter* 62: 369-373.

- Anonymous (1978). *Annual report 1975-76*. Cocoa Research Institute, Ghana. Tafo, Ghana, 250 pp.

*The report includes studies of black pod disease (Phytophthora palmivora) analysing the relationship between disease incidence and weather, disease prediction, the activities of the pathogen in soil, canker development and control.*

- Dakwa J.T. (1987). *Changes in the periods for attaining the cocoa blackpod disease infection peaks in Ghana*. In Proceedings of the Tenth International Cocoa Research Conference, Santo Domingo, Dominican Republic, 17-23 May 1987. London, UK: Cocoa Producers' Alliance: 427-436.

*The pattern for the development of cocoa blackpod disease, incited by Phytophthora spp., in Ghana was studied by recording the number of infected pods on a number of plots located at different places either weekly or fortnightly. The results showed that the time and/or period of peak infection varied every year. The periods for attaining disease infection peaks may also help in forecasting the pattern of disease development since conditions immediately preceding the infection peaks must be favourable for disease development.*

- Martinson V.A., Adomako D. & Manu M. (1987). Forty eight years of cocoa research at the Cocoa Research Institute of Ghana. *Cocoa Growers' Bulletin* 38: 39-85 (Cocoa Research Institute of Ghana P.O. Box 8, Tafo, Ghana).

*A review of research on cocoa diseases, pests, breeding and selection, cytological studies, agronomy and soils, shade management, ecophysiology and fertilizer studies, cocoa fermentation and quality, and by-products.*

## Guinea

- Viennot-Bourgin G. (1959). Etude de micromycètes parasites récoltés en Guinée. [Study of parasitic microfungi collected in Guinea]. *Annales de l'Institut National Agronomique, Paris* 45: 3-91.

- Kranz J. [1963 (1964); 1965 (1966)]. Fungi collected in the Republic of Guinea. I. Collections from the rain forest; II. Collections from the Kindia area in 1962; III. Collections from the Kindia area in 1963/64, and host index. *Sydowia* 17: 132-138; 17: 174-185; 19: 92-107.

*These lists include a number of fungi on economic hosts. Work was undertaken at the "Institut des Recherches sur les Fruits", Kindia.*

- Waliyar F. & Tounkara N.B. (1990). Survey of groundnut diseases in Guinea. *International Arachis Newsletter* 7: 8-9 (ICRISAT Sahelian Centre, BP 12404 Niamey, Niger).

*Economically important diseases included early leaf spot (Cercospora arachidicola) in all groundnut growing areas; late leaf spot (Phaeoisariopsis personata) in some regions only; rust (Puccinia arachidis); collar rot (Aspergillus niger); groundnut rosette virus and peanut streak. Several others fungal and virus diseases were observed in a few places but were not economically important.*

## Ivory Coast

- Viennot-Bourgin G. (1952; 1954; 1959). Urédinales de la Côte d'Ivoire (Notes 1, 3 & 4). [Uredinales of the Ivory Coast. (Notes 1, 3 & 4).]. *Bulletin Trimestriel de la Société Mycologique de France* 67: 429-435; 70: 410-419; *Uredineana* 5: 137-248.

- Resplandy R., Chevaugéon J., Delassus M. & Luc M. (1954). Première liste annotée des champignons parasites de plantes cultivées en Côte d'Ivoire. [First annotated list of parasitic fungi of cultivated plants in the Ivory Coast.]. *Annales de l'Institut des Recherches Agronomiques, Ser. C (Annales des Epiphyties)* 5: 1-61.

*This list of parasitic fungi found on cultivated plants in the Ivory Coast, stated to be the first compilation of the kind for this area, has been drawn up by workers at the Laboratory of Plant Pathology, Institute of Tropical Teaching and Research, Abidjan, Ivory Coast. It lists (under the botanical names of the hosts in alphabetical order) 325 fungi belonging to 198 species, of which about 145 are reported from the Ivory Coast for the first time. This list is followed by notes on the most interesting of the fungi, arranged in systematic order.*

- Meiffren M. (1957). *Les maladies du Caféier en Côte d'Ivoire*. [Diseases of Coffee in the Ivory Coast.]. Abidjan, Haut-Commissariat de l'Afrique Occidentale Française (A.O.F.), 103 pp.

- Boisson C. & Renard J.L. (1967). Les maladies cryptogamiques des plantes maraîchères en Côte-d'Ivoire. [Fungus diseases of market garden plants in the Ivory Coast.]. *Agronomie Tropicale* 22: 699-755.

*The climatic characteristics of the different regions, conditions of growth, and general control measures are described, and notes given on the symptoms, morphology of the pathogen, and measures against diseases of individual crops, including Pythium aphanidermatum on tomato, bean (Phaseolus vulgaris) and cucumber, Stemphylium solani on tomato and Capsicum, Cercospora fuligina on tomato, C. capsici on Capsicum, Pseudoperonospora cubensis on cucumber, Uromyces appendiculatus and Isariopsis griseola on bean, and Alternaria porri on onion and leek.*

- Yen J.-M. (1978). Les *Cercospora* de Côte d'Ivoire – III. [*Cercospora* species of the Ivory Coast – III.]. *Bulletin Trimestriel de la Société Mycologique de France* 94: 381-383.

*Symptoms of C. arachidicola and C. personata on groundnut and the pathogens are described.*

- Daguene G. (1980). Etude des fongicides systémiques anti-phycomycètes en vue de la lutte contre la pourriture brune des cabosses du cacao due à *Phytophthora* sp. Recherche d'une méthode de tri sur plantules au laboratoire. [Study of systemic anti-Phycomycetes fungicides with a view to controlling brown rot of cacao pods due to *Phytophthora* sp. Research on a laboratory method for screening on seedlings.]. *Café Cacao Thé* 24: 195-202.

- Rambelli A., Onofri S. & Lunghini D. (1981). New dematiaceous hyphomycetes from Ivory Coast forest litter. *Transactions of the British Mycological Society* 76: 53-58.

- Lourd M. & Huguenin B. (1982). La rouille farineuse des caféiers, *Hemileia coffeicola*, en Côte d'Ivoire. Etude de sa répartition et de son pouvoir pathogène. [Powdery rust of coffee, *Hemileia coffeicola*, in the Ivory Coast: Investigation of its distribution and its pathogenicity.]. *Garcia de Orta, Estudos Agronomicos* 9: 71-82.

- Rambelli A., Persiani A.M., Maggi O., Lunghini D., Onofri S., Riess S., Dowgiallo G. & Puppi G. (1983). *Comparative studies on microfungi in tropical ecosystems. Mycological studies in south western Ivory Coast forest*. Rome, Italy; UNESCO, 102 pp.

*This report, as part of a project examining the ecological effects of increasing human activities on tropical and sub-tropical forest ecosystems, includes sections on mycological studies of the soil, and morphological characteristics of the mycorrhizae association.*

- Savary S. (1986). Relative humidity and wind velocity associated with diurnal rhythmicity of aerial dispersal of *Puccinia arachidis* urediniospores. *Netherlands Journal of Plant Pathology* 92: 115-125.

*Four groundnuts plots were inoculated with P. arachidis urediniospores during the 1984 growing season in the Ivory Coast. Rust intensity was assessed and spores were trapped during the development of the resulting epidemics. The major explanatory variable was relative humidity; a secondary one was wind velocity.*

- Savary S. (1987). Enquête sur les maladies fongiques de l'arachide (*Arachis hypogea*) en Côte-d'Ivoire. I. Méthodes d'enquête et étude descriptive : les conditions culturales et les principales maladies. [A survey of fungal diseases of groundnut (*Arachis hypogea*) in the Ivory Coast. I. Survey methods and descriptive study: cropping techniques and the main diseases.]. II. Epidémiologie de la rouille de l'arachide (*Puccinia arachidis*). [A survey of fungal diseases of groundnut (*Arachis hypogea*) in the Ivory Coast. II. Epidemiology of groundnut rust (*Puccinia arachidis*).]. *Netherlands Journal of Plant Pathology* 93: 167-188; 215-231.

- Savary S., Bisc J.P., Noiro M. & Zadoks J.C. (1988). Peanut rust in West Africa: a new component in a multiple pathosystem. *Plant Disease* 72: 1001-1009.

*Results of a survey of groundnut crops in the Ivory Coast, assesment of losses caused by rust (Puccinia arachidis) and experimental studies on P. arachidis epidemiology are presented. Distinctive epidemiological features, components analysis of host-pathogen interaction and projected control strategies might combine low levels of partial resistance with incomplete fungicide protection by seed evolution of multiple pathosystem in a process of agricultural intensification are discussed.*

- Awoderu V.A. (1990). Yield loss attributable to neck-rot of rice caused by *Pyricularia oryzae* Cav. in Côte d'Ivoire. *Tropical Pest Management* 36: 394-396.

### Kenya

- McDonald J. (1929). *A list of plant diseases in Kenya Colony*. Bulletin of the Department of Agriculture of Kenya 5, 11 pp.

- Robinson R.A. (1960). Notes on Kenya agriculture. VIII. Important plant diseases. *East African Agricultural Journal* 25: 131-146.

*A table listing 263 of the most important plant diseases found in Kenya is presented in alphabetical order of the English name of the host (followed by the Latin name) and then the name of the disease (English and scientific), the diagnostic symptoms, ease of diagnosis (4 categories) and control methods, numbered in accordance with an introductory section briefly describing 31 control practices.*

- Anonymous (1961). *An atlas of Coffee pests and diseases*. Coffee Research Services, Coffee Board of Kenya, Nairobi, 146 pp.

*This beautifully illustrated, loose-leaf publication is intended as a guide for growers. The first three parts comprise annotated coloured illustrations of pests, diseases and abnormalities, and deficiency syndroms of Arabian coffee in Kenya. The last part contains notes, for ready reference, on control measures.*

- Nattrass R.M. (1961). Host lists of Kenya fungi and bacteria. *Mycological Papers* 81: 1-46.

*These lists are in alphabetical order of the Latin host names, with the addition of miscellaneous substrata. There is an index of fungi and bacteria.*

- Anonymous (1979; 1980). *Annual Report 1977-78; Annual Report 1979*. Coffee Research Foundation, Kenya. Ruiru, Kenya; Coffee Research Foundation x + 142 pp.; 200 pp.

- Ondieki J.J. (1973). *Host lists of Kenya fungi and bacteria. (A ten-year supplement 1961-1970)*. East African Agricultural and Forestry Journal 38 (Special Issue), 31 pp.

- Kirk P.M. (1985). New or interesting microfungi XIV. Dematiaceous hyphomycetes from Mt. Kenya. *Mycotaxon* 23: 305-352.

- Gatumbi R.W. (1986). *Host lists of Kenya fungi and bacteria (a ten-year supplement 1971-1980)*. East African Agricultural and Forestry Journal 45 (Special Issue), 15 pp.

*This addition to the already published list of J.J. Ondiecki (1973) updates records of new fungi and bacteria occurring or pathogenic on phanerogams and other substrata.*

- Anonymous (1990). Control of CBD, leaf rust and bacterial blight of coffee. *Kenya Coffee* 55 (647): 921-922.

- Kung'u E.B. & Palmer D.J. (1996). *Kenya Checklist of Fungi and Bacteria on Plants and other substrates*. KARI / IMI / DFID, Egham, UK, 96 pp.

- Siboe G.M. & Braggins J.E. (1994). *A proposed species concept in the genus Cercospora with reference to Kenyan species*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 627-634.

### Lesotho

- see Onyike N.B.N. & Nelson P.E. (1991) – General Titles Plant Pathology

## Liberia

- Virmani S.S. (1980). Varietal resistance to rice diseases and insects in Liberia. *International Rice Research Newsletter* 5: 3-4.

*Fungal and virus diseases are listed followed by some promising resistant cultivars which could be used in breeding programmes.*

## Lybian (Arab Republic)

- Maire R. & Weiller M. (1939). *Contribution à l'étude de la flore de la Libye*. Fascicule 27. In *Contribution à l'Etude de la Flore de l'Afrique du Nord* par le D<sup>r</sup> R. Maire. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord* 30: 255-314.

- Pucci E. (1960). Rassegna dei principali casi fitopatologici osservati in Tripolitania. I° contributo : nel 1959. [Review of the principal phytopathological records noted in Tripolitania. 1<sup>st</sup> contribution: in 1959]. *Revista di Agricoltura Subtropicale e Tropicale* 54: 34-53.

- Kranz J. (1962). Plant diseases in Cyrenaica. *FAO Plant Protection Bulletin* 10: 121-125.

- Kranz J. (1963). A list of fungi new to Cyrenaica (Libya). *Sydowia* 16: 125-134.

- Kranz J. (1965). A list of plant pathogenic and other fungi of Cyrenaica (Libya). *Phytopathological Papers* 6: 1-24.

*After brief notes on the general geography, vegetation, and cultivated crops of the region the list of fungi, arranged alphabetically in their classes, is followed by a host and substrate index.*

- Pucci E. (1965). Lista preliminare delle malattie delle piante osservate in Tripolitania del 1959 al 1964. Sintomi, danni, lotta. [Preliminary list of plant diseases observed in Tripolitania from 1959 to 1964. Symptoms, damage, control]. *Revista di Agricoltura Subtropicale e Tropicale* 49: 337-375.

*The diseases in this province of Libya are arranged under hosts, with brief indications of locality and seriousness.*

- El-Ghiami A.A., Nicolson T.H. & Daft M.J. (1976). Endomycorrhizal fungi from Libyan soils. *Transactions of the British Mycological Society* 67: 164-169.

- Abughnia A. & Faraj I.S. (1978). Survey of seed-borne fungi in the Libyan Jamahiriya. *Libyan Journal of Agriculture* 7: 105-108.

*Data are presented on the seed-borne fungi from nine cereal and vegetable crops.*

- Trachev D. (1979). [Fruit growing in the Libyan republic.]. *Ovoshcharstvo v Libiiskata republika. Ovoshcharstvo* 58: 37-39 [in Bulgarian].

*Peach leaf curl (Taphrina deformans) and shot hole (Stigmia carpophila) of apricot and almond are the most important diseases. Control measures are indicated.*

- El-Buni A.M. & Rattan S.S. (1981). *Check-list of Libyan fungi*. Tripoli, Al-Faateh University, Faculty of Science, Department of Botany, x + 169 pp.

*A critical check-list of Libyan fungi covering almost 700 taxa whose material were mostly collected prior to 1920 by eminent Italian mycologists; data published previously by Kranz (1965) are integrated in this work.*

- Khan M.W. & El-Ammari S.S. (1987). Outbreaks and new records in Libya. Occurrence of three species of powdery mildews on cucurbits. *FAO Plant Protection Bulletin* 35: 66-67.

- Khalil J., Bisheya F., Ismail W. & Ibrahim F. (1993). [Diseases of bananas grown under plastic houses in Libya.]. *Arab Journal of Plant Protection* 11: 33-38. [Arabic.].

*A survey of diseases affecting bananas grown in plastic houses was conducted in Sorman, Zawia and Gdaida, Libya. The major diseases of banana are listed and Pseudomonas solanacearum, Fusarium oxysporum and the root-knot nematode (Meloidogyne javanica) were some of the pathogens isolated from diseased tissues.*

### Malagasy (Republic)

- Heim R. (1937). *Les Lactario-Russulées du domaine oriental de Madagascar. Prodrome à une Flore mycologique de Madagascar*. [The Lactario-Russula of the eastern part of Madagascar. Prodromus to a mycological flora of Madagascar.]. Edition du Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, Paris, 1, 196 pp.

- Romagnesi H. (1941). *Les Rhodophylles de Madagascar. Prodrome à une Flore mycologique de Madagascar*. [The Rhodophylles of the eastern part of Madagascar. Prodromus to a mycological flora of Madagascar.]. Edition du Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, Paris, 2, 164 pp.

- Bouriquet G. (1946). *Les maladies des plantes cultivées à Madagascar*. [The diseases of cultivated plants in Madagascar], Paris, Paul Lechevalier, xii + 545 pp.

*In this important work, the result of ten years' studies and observations by the author in Madagascar are presented. The first part deals in broad outline with the history of plant pathology and the present state of the science, describes the geological formation, climate, vegetation, soils, and crops of Madagascar, treats of plant diseases and their causes in general, gives a long account of fungi, bacteria, and myxomycetes, discusses in detail methods of disease control, the different types of apparatus used in the application of fungicides, and shows how to prepare and pack phytopathological specimens for dispatch. The second part deals with the diseases occurring in Madagascar on 57 hosts, which are grouped under industrial and auxiliary plants, fruit, market-garden plants, and ornamentals, each account treating (where known) of the symptoms of the disease, the characters of the causal organism and its geographical distribution, the effect on the disease of such factors as climate, soil, methods of cultivation, and varietal resistance, and control; each host section is followed by a bibliography. This document still remains basic for Madagascar but needs to be updated.*

- Metrod G. (1949). *Les Mycènes de Madagascar. Prodrome à une Flore mycologique de Madagascar*. [The Mycenae of the eastern part of Madagascar. Prodromus to a mycological Flora of Madagascar.]. Edition du Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, Paris, 3, 146 pp.

- Le Gal M. (1953). *Les Discomycètes de Madagascar. Prodrome à une Flore mycologique de Madagascar*. [The Discomycetes of Madagascar. Prodromus to a mycological Flora of Madagascar.]. Edition du Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, Paris, 4, 465 pp.

- Dadant R., Rasolofo R. & Baudin, P. (1960). *Liste des maladies des plantes cultivées de Madagascar*. [List of the diseases of cultivated plants in Madagascar.]. Institut de Recherches Agronomiques, Madagascar, 94 pp.

*This list (to be supplemented annually) is compiled from past and recent records, with a reference to each of these and a brief note on prevalence, damage caused and control. The diseases are listed in descending order of importance under hosts (by common names alphabetically). A parasite index is appended. Attention is drawn to the absence of certain widespread diseases, serious elsewhere, including potato blight (Phytophthora infestans), Panama disease (Fusarium oxysporum var. cubense) on banana, and Ophiobolus (Cochliobolus sativus) on rice.*

- Viennot-Bourgin G. (1963). *Etude de micromycètes parasites récoltés à Madagascar*. [Study of parasitic micromycetes collected in Madagascar.]. Annales de l'Institut national agronomique, Paris 47: 1-28.

- Bouriquet G. & Bassino J.-P. (1965). *Les Urédinées de Madagascar. Prodrome à une Flore mycologique de Madagascar*. [Uredinales of Madagascar. Prodromus to a mycological flora of Madagascar.]. Edition du Laboratoire de Cryptogamie, Muséum National d'Histoire Naturelle, Paris 5, 177 pp.

*Notes on Darluca filum, Verticillium hemileiae, and a cecidomyid, Mycodiplosis hemileiae, hyperparasites on Uredinales, are followed by an outline of the system of classification adopted, and descriptions of the morphological characters of the species. Alphabetical indexes are given of the fungi, their parasites, and hosts. Latin diagnoses of new species appear in Revue de Mycologie, Paris 31: 323-326, 1966. An addendum covers some additional species noted by Jørstad and Viennot-Bourgin.*

- Rasolofo R. & Raliarison V.-A. [1976 (1978)]. Note de présentation du document "Les maladies des plantes cultivées à Madagascar 1961-1971". [Introductory note to the paper "Diseases of cultivated plants in Madagascar 1961-1971"]. *Bulletin de l'Académie Malgache* 54: 151-153.

*A list (not presented here) has been made of 161 diseases of 74 plants, of which 24 diseases have been observed only in quarantine. In each case the pathogen, plant parts affected, distribution, other hosts, economic importance and control measures are indicated. Indexes of hosts and pathogens are included.*

- Notteghem J.L., Andriatampo G.M., Chatel M. & Dechanet R. (1980). Techniques utilisées pour la sélection de riz possédant la résistance horizontale à la Pyriculariose. [Techniques used to select rice varieties possessing horizontal resistance to blast.]. *Annales de Phytopathologie* 12: 199-226.

*An upland rice breeding programme started in Madagascar in 1976 is described.*

- Dabek A.J. (1993). Lethal diseases of coconut, oil and rafia palm in Madagascar. *FAO Plant Protection Bulletin* 41: 15-22.

*Lethal palm diseases are reported for the first time in Madagascar.*

### Malawi (Nyassaland)

- Wiehe P.O. (1953). The plant diseases of Nyassaland. *Mycological Papers* 53: 1-39.

*This annotated list of plant diseases in Nyassaland is based on observations and collections made by the writer during 1949 and 1950, and includes diseases caused by fungi, bacteria, and viruses and physiological disorders arranged alphabetically under each host, indexes being provided to hosts and diseases. New records for Nyassaland include *Cercospora oryzae* on rice and *C. concors* in potato.*

- Bisby G.R. & Wiehe P.O. (1953). The rusts of Nyassaland. *Mycological Papers* 54: 1-12.

- Anonymous (1963). *Annual report of the Department of Agriculture, Nyassaland, for the year 1961/62.* Part II, 169 pp.

*It is reported by the Plant pathologist (D.C.M. Corbett) that tobacco anthracnose (*Colletotrichum tabacum*) did not occur again in the central province growing areas although there had been an outbreak during the previous year, when affected beds were destroyed and a spraying scheme instituted. There were five outbreaks in the Southern Province, but none on Trust Land.*

- Corbett D.C.M. (1963). *Handbook of plant diseases in Nyassaland.* Zomba, Malawi, The Government Printer, vii + 98 pp.

*This publication contains notes on the symptoms (for field identification) and control of the commoner fungal, bacterial, and virus diseases of the local economic crops. A few diseases of major importance elsewhere, but not yet recorded in Malawi, are included.*

- Corbett D.C.M. (1964). A supplementary list of plant diseases in Nyassaland. *Mycological Papers* 95: 1-16.

*This covers collections made since 1953. An annotated list of plant diseases is followed by an index of pathogens and disorders, and one of common and vernacular host names.*

- Peregrine W.T.H. & Siddiqi M.A. (1972). A revised and annotated list of plant diseases in Malawi. *Phytopathological Papers* 16: 1-51.

- Williamson J. (1973). Preliminary list of some edible fungi of Malawi. *Society of Malawi Journal* 26: 15-27.

- Allen D.J. (1975). Additions to the fungi and plant diseases of Malawi. *Society of Malawi Journal* 28: 35-44.

- Mercer P.C. (1978). Pests and diseases of groundnuts in Malawi. III. Wilts, post-harvest, physiological and minor disorders. *Oléagineux* 33: 619-624.

- Tanton T.W. & Abington J.B. (1979). The effect of different cultural practices upon the major diseases of dark fire-cured tobacco in Malawi. *PANS* 25: 158-162.

- Siddiqi M.A. (1980). Diseases of rice in Malawi. *African Journal of Plant Protection* 2: 83-89.

Of the 23 fungal diseases listed, the most important are blast (*Pyricularia oryzae*) and brown spot (*Cochliobolus miyabeanus*). Intensive cropping, particularly under the double cropping system, seems to have encouraged their spread. Physiological disorders such as straighthead, apparently caused by unfavourable soil and nutritional conditions, are occasionally observed.

- Morris B. (1984). Macrofungi of Malawi: some ethnobotanical notes. *Bulletin of the British Mycological Society* 18: 45-57.

- Saka V.W. [1985 (1986)]. The occurrence of *Meloidogyne javanica* and *Fusarium udum* interaction on pigeon pea *Cajanus cajan* in Malawi. *Bundu Journal Agricultural Research* 1: 49-53.

A survey of farmers' fields in Malawi in 1978-79 showed that *F. udum* and *M. javanica* were often associated on the roots of wilted pigeon peas. A screening programme is being carried out to identify material resistant to these two organisms.

- Morris B. (1987). *Common mushrooms of Malawi*. Fungiflora, Oslo, 108 pp.

- Morris B. (1990). An annotated check-list of the macrofungi of Malawi. *Kirkia* 13: 323-364.

- Sutton B.C. (1993). Mitosporic fungi from Malawi. *Mycological Papers* 167: 1-93.

An annotated account is given of mitosporic fungi (deuteromycetes, including hyphomycetes and coelomycetes) collected in Malawi in 1990, mostly in the Mulanje Mountains. Ninety species are listed, of which 16 (18%) are newly described. Of the remainder, 57 species are reported from Malawi for the first time.

- Chipompha N.W.S. (1994). *Some mushrooms of Malawi: agarics of central and northern Malawi*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 649-658.

- Khonga E.B. (1994). *Coffee (Coffea arabica L.) phylloplane mycoflora as potential biocontrol agents of coffee disease in Malawi*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 619-626.

- Morris B. (1994). *Bowa: ethnomycological notes on the macrofungi of Malawi*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 635-648.

## Mali

- Selvaraj J.C. (1987). Outbreaks and new records. Mali. Pokkah boeng, or twisted top of maize. *FAO Plant Protection Bulletin* 35: 67-68.

*This disease, caused by Gibberella fujikuroi var. subglutinans and previously reported on sorghum and Pennisetum americanum, is newly described on maize. Symptoms and results of cross inoculation tests are described.*

## Mauritania

- Frison E.A. & Sadio D. (1987). Les maladies du sorgho et du mil en Mauritanie. [Diseases of sorghum and millet in Mauritania.]. *FAO Plant Protection Bulletin* 35: 55-61.

*The most important head and leaf diseases of sorghum (caused by Sphacelotheca sorghi, S. reiliana, Tolyposporium ehrenbergii, Erwinia sp. and Pseudomonas andropogonis) and Pennisetum americanum (Tolyposporium penicillariae, Sclerospora graminicola and Claviceps microcephala) are discussed. Their incidence in Mauritania in 1985 and 1986 is reported.*

## Mauritius

- Wiehe P.O. (1948). The plant diseases and fungi recorded from Mauritius. *Mycological Papers* 24: 1-39.

- Felix S. & Orieux L. (1963). *Plant diseases and their control in Mauritius*. Bulletin of the Department of Agriculture of Mauritius, 95, 42 pp.

*A popular survey of the diseases and their symptoms with short notes on control and a chapter on fungicides, methods of application, and soil sterilization. There is a host index of common names, with Latin binomials, and an appendix of French vernacular host names with their English and Latin equivalents.*

- Orieux L. & Felix S. (1968). List of plant diseases in Mauritius. *Phytopathological Papers* 7: 1-48.

*A host-pathogen list, in alphabetic order of Latin names, and a pathogen-host list are followed by lists of bacterial and other non-fungal pathogens, virus symptoms under hosts, and common names with botanical equivalents.*

- Anonymous (1979). Annual Report, 1978. *Mauritius Sugar Industry Research Institute*. Port Louis, Mauritius, 81 pp.

- Dossa M.I. & Lalmohamed G.M. (1983). Citrus diseases: problems and prospects. *Revue Agricole et Sucrière de l'Île Maurice* 62: 142-148.

- Lutchmeah R.S. (1986). *Botryodiplodia theobromae* Pat. causing fruit rot of two hitherto unreported *Anona* species in Mauritius. *Revue Agricole et Sucrière de l'Île Maurice* 65: 128-130.

- Anonymous (1986). *Diseases*. In Annual Report, 1985. Mauritius Sugar Industry Research Institute. Réduit, Mauritius: Mauritius Sugar Industry Research Institute: 40-44.

- Fagooner I. (1987). The evolution of pesticide utilisation in the vegetable production sector 1979-83. *Revue Agricole et Sucrière de l'Île Maurice* 66: 115-127.

*Trends in the import and use of pesticides (insecticides, fungicides and herbicides) in Mauritius in 1979-83 are tabulated from official sources, together with loads of insecticides and fungicides for given acreages of vegetable crops that needed intensive protection in 1973-77. Compared to earlier surveys there appears to be a net improvement in the perception of pests and pesticide utilization.*

- Lutchmeah R.S. (1987). *Botryodiplodia theobromae* causing fruit rot of *Annona muricata* in Mauritius. *Plant Pathology* 37: 152.

## Morocco

- Maire R. & Werner R.G. (1937). Catalogue raisonné des champignons connus jusqu'ici au Maroc. [An annotated list of the fungi hitherto recognized in Morocco.]. *Mémoires de la Société des Sciences naturelles du Maroc* 45: 1-148.

- Malençon G. (1952; 1954; 1955; 1958). Prodrôme d'une flore mycologique du Moyen-Atlas. I°-4° Contribution. [Introduction to mycological flora of the Middle Atlas region. 1<sup>st</sup>-4<sup>th</sup> Contribution]. *Bulletin de la Société Mycologique de France* 68: 297-326; 70: 117-156; 71: 265-311; 73: 289-330.

- Guyot A.L. & Malençon G. (1957; 1963). *Uredinées du Maroc. I, II*. [Uredinales of Morocco. I, II.]. Travaux de l'Institut Scientifique Chérifien, Série botanique, 11: v + 184 pp.; 28: vii + 161 pp.

- Rieuf P. (1960). Organismes pathogènes et saprophytiques des plantes au Maroc. [Pathogenic and saprophytic organisms on plants in Morocco.]. *Cahiers des Recherches Agronomiques, Ministère de l'Agriculture, Rabat* 9: 1-359.

*The first part (9-224 pp.) of this comprehensive publication lists bacteria, cryptogams, phanerogams, and viruses in alphabetical order, with cross references to synonyms and the names of the hosts, including dates and localities of collections. A similar host index follows on pp. 227-359.*

- Chapot H. & Delicchi V.L. (1964). *Maladies, troubles et ravageurs des Agrumes au Maroc*. [Diseases, disorders and pests of Citrus in Morocco.]. Institut National de la Recherche Agronomique, Rabat, 339 pp.

*Each disease is described in turn and admirably illustrated in colour, with details of distribution, synonyms, cause, symptoms, transmission, means of detection, general control measures, and resistant varieties. A short bibliography and an index are appended.*

- Bertault R. (1964; 1965). Amanites du Maroc. 1<sup>re</sup> contribution. 2<sup>e</sup> contribution. *Bulletin Trimestriel de la Société Mycologique de France* 80: 364-384; 81: 345-371.

- Rieuf P. (1969; 1970; 1971; 1972). Parasites et saprophytes de plantes au Maroc. [Parasites and saprophytes of plants in Morocco.]. *Cahiers des Recherches Agronomiques, Ministère de l'Agriculture, Rabat* 27: 1-178; 28: 179-357; 29: 362-463; 30: 469-570.

*This revised list of fungi and bacteria is in four parts: the first and second (27 and 28) contain a list of the pathogens (with synonyms) in alphabetic order, the third and fourth (29 and 30) the host list with botanical names in alphabetic order. The location where the pathogen was first recorded is given by a number which is related to a key map of the 22 regions of Morocco.*

- Louvet J. (1974). Les recherches sur le bayoud au Maroc. [Research on "bayoud" in Morocco.]. *Bulletin d'Agronomie Saharienne* 1: 15-19.

- Besri M. (1978). Phases de la transmission du *Fusarium oxysporum* f. sp. *lycopersici* et de *Verticillium dahliae* par les semences de quelques variétés de tomate. [Phases of the transmission of *Fusarium oxysporum* f. sp. *lycopersici* and *Verticillium dahliae* by seeds of some tomato varieties.]. *Phytopathologische Zeitschrift* 93: 148-163.

*F. oxysporum* f. sp. *lycopersici* was found in all parts of the fruit clusters (peduncle, fruit vascular tissue, seed) of infected plants of the three most important autumn cultivars grown in Morocco. *V. dahliae* was isolated only from the vascular tissue of the lower fruit clusters of *Eclairer*. Seeds of all three cultivars were free from the pathogen.

- Viennot-Bourgin G. (1978). *Uromyces transversalis* (Thüm.) Wint. parasite dangereux des cultures de glaïeuls. [*Uromyces transversalis* (Thüm.) Wint., a dangerous parasite of gladiolus crops.]. *Comptes Rendus des Séances de l'Académie d'Agriculture de France* 64: 880-885.

*Serious damage to gladiolus crops was caused by U. transversalis in Morocco. Symptoms, the pathogen, host plants and geographic distribution are discussed.*

- Bertault R. (1978). Russules du Maroc. Lactaires du Maroc. *Bulletin Trimestriel de la Société Mycologique de France* 94: 5-32; 94: 273-288.

- Vanderweyen A. (1978). La verticilliose de l'avocatier : maladie nouvelle au Maroc. [Wilting of avocado: a new disease in Morocco.]. *Al-Awamia* 55: 41-55.

*A sudden wilting of avocado pear was apparently caused by Verticillium dahliae. Affected trees did not die and new growth appeared.*

- Besri M. (1980). Influence de la température du sol et de l'air sur la fusariose et la verticilliose des tomates d'automne et de printemps au Maroc. [The influence of soil and air temperature on *Fusarium* and *Verticillium* infection of autumn and spring tomatoes in Morocco.]. *Phytopathologische Zeitschrift* 98: 97-107.

- Boorsma P.A. (1980). Variability in chickpea for blight resistance. *FAO Plant Protection Bulletin* 28: 110-113.

*All the Moroccan cultivars of Cicer arietinum tested showed broad variability on blight (Ascochyta rabiei) resistance, and existing resistance appears to be quantitative rather than qualitative.*

- Vanderweyen A. (1983). Contribution à l'étude de la gommose à *Phytophthora* des agrumes au Maroc. 1<sup>re</sup> partie. 2<sup>e</sup> partie. 3<sup>e</sup> partie. [Contribution to the study of citrus gummosis due to *Phytophthora* in Morocco. 1<sup>st</sup> Part. 2<sup>nd</sup> Part. 3<sup>rd</sup> Part.]. *Fruits* 38: 43-54; 83-118; 161-182.

*In Morocco the disease is caused by P. citrophthora and P. nicotianae var. parasitica. The object of this work was to select varieties with some resistance that could be used as rootstocks, since most combinations on the widely used bitter orange rootstock, though resistant to gummosis, are susceptible to citrus tristeza virus.*

- Boulif M. & Wilconson R.D. (1988). Inheritance of resistance to *Pyrenophora graminea* by barley. *Plant Disease* 72: 233-238.

*Barley cultivars and lines adapted for cultivation in Morocco and considered to be resistant or susceptible to the stripe disease caused by P. graminea were crossed and progenies were tested for resistance to three virulent isolates of the pathogen obtained in Morocco.*

- Niks R.E., Dekens R.G. & Ommeren A. van (1989). The abnormal morphology of a very virulent Moroccan isolate belonging or related to *Puccinia hordei*. *Plant Disease* 73: 28-31.

### Mozambique

• Carvalho T. de & Mendes O. (1958). *Doenças de plantas em Moçambique*. [Plant diseases in Mozambique.]. Provincia de Mocambique, Direcção de Agricultura e Florestas, Repartição de Sanidade Vegetal, Seccao de Patologia Vegetal, 84 pp.

*This updated edition contains reference to the following additional plant pathogens of economic importance: Agrobacterium tumefaciens on roses; Alternaria citri on orange; Botryodiplodia theobromae on sugarcane and sisal; Cochliobolus miyabeanus and Leptosphaeria salvinii on rice; Colletotrichum lindemuthianum on beans; Entyloma dahliae on dahlia; Guignardia bidwellii and Uncinula necator on vine; Helminthosporium torulosum on banana; Leptosphaeria sacchari, Ustilago scitaminea, and Xanthomonas rubrilineans on sugarcane; Leptographium pomi on apple; Phoma lingam on cabbage; Physoderma maydis on maize; Puccinia coronata on oats; Septoria apii on celery; Spondylocladium (Helminthosporium) atrovirens and Spongospora subterranea on potato; Citrus tristeza virus on grape-fruit; Taphrina deformans on peach and Verticillium dahliae on cotton.*

• Tarp G., Lange L. & Kongsdal O. (1987). Seed-borne pathogens of major food crops in Mozambique. *Seed Science and Technology* 15: 793-810.

*A total of 218 seed samples of rice, maize, wheat, sorghum, soyabean, groundnut, cowpea and sunflower from various locations was tested using the blotter and embryo count methods as well as dry inspection. Fungi recorded on each crop and cultivar are presented. The presence of seed-borne diseases in Mozambique is not a major constraint to agricultural development, but important seed-borne pathogens such as Pyricularia oryzae, Drechslera maydis, Phoma sorghina, Colletotrichum dematium and Macrophomina phaseolina, were identified in the samples studied. Recommendations for the introduction of specific quarantine measures, routine seed health testing and seed management treatment are given.*

### Niger

• Kranz J. & Hammat H. (1979). New records of phytopathogens on cultivated plants. *FAO Plant Protection Bulletin* 27: 97-99.

*The diseases noted during a survey in the Sahelian zone, Niger, during 1978 are listed and include several new records.*

• Reckhaus P. & Adamou I. (1987). *Hendersonula dieback* of mango in Niger. *Plant Disease* 71: 1045.

• Reckhaus P., Reckhaus S. & Adamou I. (1988). Stolbur disease of tomato plants in Niger. *Plant Disease* 72: 268.

### Nigeria

• West J. (1938). A preliminary list of plant diseases in Nigeria. *Kew Bulletin* 1938: 17-23.

• Parker A.K. (1964). *Report to the Government of Nigeria on diseases of forest nurseries and plantations*. FAO Expanded Technical Assistance Programme, Report 1983, 37 pp.

*During a survey in 1962-63, 130 collections representing 114 diseases on 65 tree species were examined. Details are given of the incidence and damage caused by those diseases which are a major or potential problem. These are: damping-off of nursery plants, root rot (Phytophthora sp.) of Luvunga klainea, leaf spot of Nauclea didisclerii, dieback associated with moisture stress (and, in Eucalyptus deglupta, with Dothichiza sp. and Pestalotia sp.), root rots of Gmelina arborea, Chlorophora regea, Eucalyptus multiflora, and E. camaldulensis (with which Polyporus schweinitzii was found associated), cankers of Eucalyptus spp. and Cupressus lusitanica, and butt and root rots of teak. Tabulated data on the distribution of the diseases and their associated pathogens are appended.*

• Opeke L.K. (1970; 1971; 1972). *Annual Report of the Cocoa Research Institute of Nigeria 1968-69, Ibadan, Nigeria, 1969-70: 204 pp.; 1970-71: 163 pp.; 1971-72: 186 pp.*

- Bailey A.G. (1966). *A check-list of plant diseases in Nigeria*. Memorandum, Federal Department of Agricultural Research Ibadan 96, 33 pp.

*This publication is based on West's list of 1938, supplemented with records by subsequent workers.*

- Eboh D.A. & Obike A.O. (1977). A preliminary taxonomic study of Nigerian graminicolous Uredinales. Grass rusts from Nsukka – I. *Mycologia* 69: 734-739.

- Eboh D.A. (1978; 1984; 1985). A taxonomic survey of Nigerian rust fungi: Uredinales Nigerianensis. I. III. IV. *Mycologia* 70: 1077-1085; 76: 181-191; 78: 577-586.

- Fajola A.O. (1978). Cultural studies in *Cercospora* taxonomy: 1. Inter-relationships between some species from Nigeria. *Nova Hedwigia* 29: 912-921.

- Agwu S.I. & Okoye H.C. (1978). The distribution of bronze wilt leaf disease of coconuts in Anambra and Imo states of Nigeria. *Journal of the Nigerian Institute for Oil Palm Research* 5: 79-85.

*The disease has become widespread and incidence is higher in the southern than in the northern areas of the States.*

- Obi I.U. (1981). Identified major disease hazards of maize production in southern Nigeria. *Tropenlandwirt* 82: 137-144.

*Diseases rating of 481 naturally infected local varieties collected from eight States in the forest and parts of the Guinea savannah zones showed that rust (Puccinia polysora) was the most important fungus disease, infecting 378 varieties. Helminthosporium maydis infected c. 133. The two improved varieties were also infected by P. polysora but incidence and severity of other pathogens were generally low. Other pathogens encountered were, in order of importance, Curvularia sp., Fusarium sp., H. turcicum and maize streak virus. Control measures are briefly discussed.*

- Gregory P.H. & Maddison A.C. (Eds.) (1981). Epidemiology of *Phytophthora* on cocoa in Nigeria. Final Report of the International Cocoa Black Pod Research Project. *Phytopathological Papers* 25: 1-188.

*The project was carried out under the auspices of the Cocoa Research Organisation of the International Office of Cocoa and Chocolate. The report gives a detailed account of the research on Phytophthora on cocoa carried out in Nigeria in the period 1973-79. Subjects covered include the species of Phytophthora involved; detection and movement of inoculum; the soil phase of the fungi; three dimensional mapping of diseases incidence; sources of infection; analysis of epidemics; and the role of ants in diseases dissemination.*

- Adisa V.A. (1983). Surface mycoflora of *Manihot esculenta* and *M. utilisissima* tubers in Nigeria. *Indian Phytopathology* 36: 533-539.

*Fifteen fungi were isolated from the surface of cassava tubers in ten areas. Some of the isolates cause deterioration of the tubers on inoculation. There was an increase in number and percentage occurrence of fungi as tubers aged after harvest.*

- Adisa V.A. (1983). Storage rots of banana fruits in some Nigerian markets. *Fitopatologia Brasileiro* 8: 29-36.

*Botryodiplodia theobromae and Rhizopus stolonifer caused soft rots, while Aspergillus aculeatus and A. flavus caused dry rots. The incubation period decreased with increase in temperature and relative humidity. Chilling disorders occurred at low temperatures.*

- Eboh D.O. (1985). Nigerian Graminicolous Uredinales: Grass Rusts from Nsukka – II. *Mycologia* 77: 205-221.

- Okhuya J.A. (1986). Seasonal and diurnal changes of two leaf pathogens of rubber (*Hevea brasiliensis* Muell. Arg.) in the air of Iyanomo, Nigeria. *Acta Mycologica, Warszawa* 22: 64-71.

*Seasonal changes were noted in air spore concentrations of Drechslera heveae and Colletotrichum gloeosporioides in a rubber nursery on using the exposed nutrient technique and Rotorod samplers The effect of environmental factors on these changes is discussed.*

- Iremiren G.O. (1987). Management of oil palm nurseries in Nigeria. *Agriculture International* 39: 76-78.

- Ogundera V.W. (1987). Crown rot fungi of Nigerian bananas cv. Robusta and the effects of benomyl on their exoenzymes. *Journal of Basic Microbiology* 27: 43-47.

- Obi I.U. (1987). Disease and pest problems of late season maize (*Zea mays* L.) in relation to time of planting on the Nsukha plains of south-eastern Nigeria. *East African Agricultural and Forestry Journal* 53: 1-11.
- Eguagie W.E. & Udeensi N. (1989). *Control of insect pests and diseases of citrus and mango in Nigeria*. Technical Bulletin – National Horticultural Research Institute, Ibadan 5, 15 pp.
- Osunlaja S.O. (1990). Tillage effects on the incidence and severity of root and stalk rot of maize caused by *Fusarium moniliforme* and *Macrophomina phaseolina* in south-western Nigeria. *Journal of Phytopathology* 130: 312-316.

### Reunion (the)

- Anonymous (1985). *IRAT. Réunion. Rapport Annuel 1985*. [IRAT. Reunion. Annual Report.]. St. Denis, Réunion, IRAT, 225 pp.  
*Work done on Xanthomonas campestris pv. vasculorum, Puccinia melanocephala and Ustilago scitaminea on sugarcane (105-112); Pseudomonas solanacearum on tomato and other market garden plants (pp. 123-128); Helminthosporium turcicum on maize (p. 145) and X. campestris on Tripsicum laxum is reported.*
- Boidin J. & Gilles G. (1991). Basidiomycètes Aphyllorphorales de l'île de la Réunion. XVI. Les genres *Hyphoderma*, *Chrysoderma* nov. gen. et *Crustoderma*. [Basidiomycetes Aphyllorphorales of the Réunion Island. XVI. The genera *Hyphoderma*, *Chrysoderma* nov. gen. and *Crustoderma*.]. *Cryptogamie, Mycologie* 12: 97-132.

### Rwanda

- Mulder D. (1978). Stripe canker of *Cinchonia* spp. *FAO Plant Protection Bulletin* 26: 30.  
*The disease, which has ravaged cinchonia trees in Rwanda since 1969 has now been identified as stripe canker (Phytophthora cinnamomi).*
- Price M. & Cishahayo D. (1985). *Ascochaeta* blight on major food crops in Rwanda, East Africa. *Plant Disease* 70: 1159.  
*In 1983, A. phaseolorum caused severe damages to several cowpea cultivars. An extensive survey in 1985 identified A. phaseolorum on bean and soyabeans, A. adzameatica on groundnuts, A. bataticola on sweet potato and A. pisi pea. This is the first report of Ascochaeta blight of sweet potato, cowpea, soyabean and pea in Rwanda.*
- Tegera P. (1987). *Acceptance of new varieties with resistance to late blight when chemical control is not available: the case of Rwandan farmers*. In Fungal Diseases of the Potato. Report of the Planning Conference on Fungal Diseases of the Potato held at CIP, Lima, Peru, 21-25 September 1987. Lima, Peru: International Potato Center.  
*Interaction between late blight (Phytophthora infestans) resistance and planting dates in Rwanda are presented. Breeding programmes concentrate on characteristics of yield, resistance to P. infestans and bacterial wilt, medium earliness with short dormancy, storability, high dry matter content and suitability to the existing cropping systems.*
- Arapsang F.K. (1988). *Forest diseases and pests with special reference to eastern Africa experience and assessed potential in Rwandan forestry practice*. In Comptes rendus du premier séminaire national sur la sylviculture des plantations forestières au Rwanda, Butare, 31 août-3 septembre 1987 (éd. Pleines V.J., Butare, Rwanda; Département de Foresterie, Institut des Sciences Agronomiques du Rwanda): 415-516.  
*The development of forest disease research in East Africa is outlined. Pests and diseases of exotic conifers and native broad leaves are described. Cupressus lusitanica and Pinus patula appear to be the most disease-resistant species suitable for planting in Rwanda. Quarantine measures have been found effective in controlling the introduction of exotic pests and diseases.*

- Gatsinzi F. (1992). La maladie de Panama due à *Fusarium oxysporum* f. sp. *cubense* au Rwanda. [Panama disease in Rwanda due to *Fusarium oxysporum* f. sp. *cubense*.]. *FAO Plant Protection Bulletin* 40: 68-74.

### Sao Tome and Principe

- Dias Maria R. de S., Lucas Maria T., De Vasconcelos A.T. & Da Camara E. de S. (1953). *Minutissimum mycofloras subsidium Sancti Thomensis et Principis Insulae*. [A very small contribution to the mycoflora of Sao Tomé and Principe Islands.]. *Agronomia Lusitania* 15: 5-15.

*Among the thirty species recorded in this list of fungi collected in 1951 on Sao Tomé and Principe Islands may be mentioned Didymosphaeria oliveirana n. sp., on leaves of Artocarpus communis in Sao Tomé; Stachylidium (Verticillium) theobromae on fruits of Musa ensete; and Acrostalagmus cinnabarinus on cocoa wood.*

- Vovlas N., Frisullo S., Santos M.S.N. de A., Abrantes I.M. de O. & Espirito Santo S. N. (1994). *Ceratocystis paradoxa* and *Helicotylenchus multicinctus* associated with root systems of declining bananas in the Republica Democratica de Sao Tomé e Principe. *Nematologia Mediterranea* 22: 119-121.

### Senegal

- Jaubert P. (1953). Liste annotée des principales affections parasitaires (mycoses, bactérioses, viroses), ainsi que des affections de causes mal définies et des plantes nuisibles aux cultures du Sénégal. [Annotated list of the principal parasitic disorders (fungus, bacterial, and virus diseases) as well as disorders of doubtful identity and plants harmful to crops in Senegal.]. *Bulletin du Centre des Recherches Agronomiques de Bambey* 7: 2-39.

- Bouhot D. & Mallamaire A. (1965). *Les principales maladies des plantes cultivées au Sénégal. Tomes I et II*. [The principal diseases of cultivated plants in Senegal. Vols. I and II.]. Grande Imprimerie Africaine, Dakar, Senegal, Tome 1: 291 pp.; Tome 2: 159 pp.

*Vol. I, describes fungal, bacterial, virus, and deficiency diseases under hosts with details of the synonymy and morphological and biological characters of the pathogens and also control measures. It concludes with pathogen and host-pathogen indexes. Vol. II gives a concise account of the geography, natural regions, climate, soils of the country, and a statistical study of agricultural production. The principal diseases are grouped under food, market garden, and fruit crops, and ornamentals. A chapter is devoted to control methods and there are indexes of hosts, and also of diseases under crops, and illustrations, largely in colour, of the chief diseases.*

- Bouhot D. (1966). Quelques champignons phytopathogènes nouveaux ou peu connus au Sénégal. [Some phytopathogenic fungi new or little known in Senegal.]. *Bulletin Trimestriel de la Société Mycologique de France* 82: 274-300.

- Anonymous (1979). *Rapport annuel 1976 de la recherche agronomique de l'Institut Sénégalais de Recherches Agricoles (ISRA)*. Bambey, Sénégal ; Institut Sénégalais de Recherches Agricoles, 274 pp.

- Diem H.G., Gueye I., Gianinazzi-Pearson V., Fortin J.A. & Dommergues Y.R. (1981). Ecology of VA mycorrhizae in the tropics: the semi-arid zone of Senegal. *Acta OEcologica, OEcologia Plantarum* 2: 53-62.

- Defrancoq M., Collingwood E.F., Mbaye A.A., Diouf M. & Mbaye A. (1982). *Protection des végétaux. Rapport des essais pesticides en phytopathologie 1980-81*. [Plant Protection. Report on chemical control trials in plant pathology 1980-81.]. Camberene-Dakar, Sénégal, Centre pour le Développement de l'Horticulture, 52 pp.

*Accounts are given of work done on Rhizoctonia solani on potato, Pseudoperonospora cubensis on melon, collar and root rot of bean due to R. solani, Pythium sp. and Fusarium solani, tomato yellow leaf curl virus on tomato, phytotoxicity of various treatment chemicals on tomato in the nursery, and Xanthomonas campestris pv. vesicatoria on tomato.*

- Thoen D. & Ba A.M. (1989). Ectomycorrhizas and putative ectomycorrhizal fungi of *Afzelia aficana* Sm. and *Uapaca guineensis* Muell. Arg. in southern Senegal. *New Phytologist* 113: 549-559.

### Sierra Leone

- Deighton F.C. (1936). Preliminary list of fungi and diseases of plants in Sierra Leone. List of fungi collected in Sierra Leone. *Kew Bulletin* 1936: 397-433.

- Deighton F.C. (1956). *Diseases of cultivated and other economic plants in Sierra Leone*. Government Printing Department, Sierra Leone, 76 pp.

*This comprehensive publication, primarily for the use of Agricultural Officers in Sierra Leone, will be of value in neighbouring areas of West Africa and of general interest to plant pathologists in tropical Africa. Following an introductory chapter host plants are dealt with under cereals, plantation crops and fruit trees, other agricultural crops including cover crops and vegetables, forest and fruit trees, fodder grasses, and ornamental crops. In addition to diseases of economic account, in connexion with which control measures are indicated, other fungi recorded on these hosts and various minor diseases are noted. Attention is also drawn to certain diseases not yet recorded in the colony though occurring in neighbouring areas and elsewhere, such as swollen shoot virus of cocoa, leaf spot (Mycosphaerella musicola) of banana, and maize smut (Ustilago maydis).*

- Raymundo S.A. (1980). New blast resistant rice varieties in Sierra Leone. *International Rice Commission Newsletter* 29: 54-58.

*The performance of the new cultivars resistant to Pyricularia oryzae is tabulated.*

- Fomba S.N. & Singh N. (1990). Crop losses caused by rice brown spot disease in mangrove swamps of northwestern Sierra Leone. *Tropical Pest Management* 36: 387-393.

### Somalia

- Golato C. (1967). *Malattie delle piante coltivate in Somalia*. [Diseases of cultivated plants in Somalia.]. Istituto Agronomico per l'Oltremare, Firenze, Italy, 147 pp.

*Morphological characters, symptoms, manner of spread, and damage caused by fungal and bacterial pathogens on Juniperus procera, cassava, Ricinus communis, papaw, bean (Phaseolus vulgaris), groundnut, cotton, grapefruit, grapevine, tomato, eggplant, tobacco, sesame, vegetable marrow, sunflower, onion, wheat, sorghum, Sudan grass, sugarcane, maize, banana, and date palm are described. The effects of climatic factors and control measures are indicated. There is a host, disease and pathogen index.*

- Castellani E., Mohamed I.M. & Jama A.N. (1977). La ruggine dell'arachide in Somalia. [Groundnut rot in Somalia.]. *Sannadaalaha Waxbarashada Iyo Baarista Studi e Ricerche* 1: 57-68.

*Puccinia arachidis was newly recorded on groundnut. Symptoms and the pathogen are described.*

- Matta A., Mohamed M.I. & Mohamed A.A. (1979). Malattie fogliari del pomodoro in Somalia. [Leaf diseases of tomato in Somalia.]. *Studi e Ricerche* 3: 344-351.

*Symptoms are described of Fulvia fulva, Leveillula taurica and Pseudocercospora fuligena all newly recorded in Somalia. F. fulva is widespread. Of nine cvs. screened Lorry Hall, Roza, OHIO 7633 and Cample 37 were the most resistant.*

- Castellani E., Mohamed M.I. & Nour Giama A. (1988). *Elenco annotato dei funghi della Somalia*. [Annotated list of fungi in Somalia.]. Istituto Agronomico per l'Oltremare, Florence, Italy, 148 pp.

*This account is based on observations made in the period 1950-87. Fungi including pathogens of economic importance are listed taxonomically, with indication of host locality and recorder. There is a host index. Illustrations are given of the main genera and these are indexed.*

- Gray F.A., Kolp B.J. & Mohamed M.I. (1980). A disease survey of crops grown in the Bay Region of Somalia. East Africa. *FAO Plant Protection Bulletin* 38: 39-47.

A disease survey of cultivated crops in the Bay Region of Somalia from 30 May to 19 July 1984 and from 15 January to 16 February 1987, resulted in the identification of 25 diseases on 11 different crops, with 8 identified on sorghum, the major food crop of the region. *Macrophomina phaseolina* appears to be the most important single pathogen in the Bay region.

### South Africa

- Doidge Ethel M. (1950). The South African fungi and lichens to the end of 1945. *Bothalia* 5: 1-1094.
  - Doidge Ethel M. & Bottomley A.M., Van Der Planck J.E. & Bauer G.D. (1953). *A revised list of plant diseases occurring in South Africa*. Science Bulletin, Department of Agriculture, Union of South Africa 346, 122 pp.
  - Marasas W.F.O. & Rabie C.J. (1966). New and interesting records of South African fungi. *Bothalia* 9: 217-227.
  - Warmelo K.T. van (1967). The fungus flora of stock feeds in South Africa. *Onderstepoort Journal of Veterinary Research* 34: 439-450.
  - Marasas W.F.O. & Bredell I.H. (1973). Mycoflora of South African lucerne (*Medicago sativa* L.) seed. *Phytophylactica* 5: 89-94.
  - Gorter G.J.M.A. (1977). *Index of plant pathogens and the diseases they cause in cultivated plants in South Africa*. Science Bulletin, Department of Agriculture, Union of South Africa 392, 177 pp.
  - Mitchell D.T. (1978). Pathology of the Cape Oak. *Veld and Flora* 64: 107-110.
  - Marais P.G. (1978). Pourridié des racines de vigne provoqué par le champignon *Phytophthora cinnamomi*. [Grapevine root rot caused by *Phytophthora cinnamomi*]. *Progrès Agricole et Viticole* 95: 135-140.
- In South Africa the root system of grapevines grafted on several rootstocks were attacked by the fungus. Leaf discoloration was followed by sudden death of the plant. The fungus was isolated from infested soil by baiting with lupin and symptoms were reproduced on inoculated plants.*
- Scott D.B. (1978). Take-all of wheat in the eastern Free State. *Phytophylactica* 10: 123-126.
- The disease commonly occurs in the area where small grain cereals are cultivated in monoculture during the winter and early summer.*
- Marasas W.F.O. & Westhuizen G.C.A. van der (1979). *Diplodia macrospora*: the cause of a leaf blight and cob rot of maize (*Zea mays*) in South Africa. *Phytophylactica* 11: 61-64.
- Symptoms of the disease, newly recorded in South Africa, and morphology of the pathogen are described.*
- Gevers H.O. (Ed.) (1979). *Proceedings of the Second South African Maize Breeding Symposium 1976*. Technical Communication, Republic of South Africa, No. 142, 124 pp.
  - Gorter G.J.M.A. (1979). *An annotated check list and selected bibliography of South African fungi for the period 1946-1977*. Technical Communication, Department of Agricultural Technical Services, South Africa, 163, 34 pp.
- This is a supplement to the work by Doidge with special reference to mycological publications which have appeared since 1945, including those on newly recorded and newly described South African fungi.*
- Wingfield M.J. & Knox-Davies P.S. (1980). Observations on diseases in pine and *Eucalyptus* in South Africa. *Phytophylactica* 12: 57-63.
- Diplodia pinea was associated with a wide range of disease symptoms in pines. Other diseases noted were Armillaria mellea root rot and root diseases caused by Verticillium aracris (on pine), Phytophthora cinnamomi (on pine and Eucalyptus spp.), Polyporus baudoni (on both) and Rhizina undulata (on pine).*
- Anonymous (1980). *Proceedings of the 18<sup>th</sup> Congress of the South African Society for Plant Pathology and Microbiology*. Bloemfontein, South Africa; University of Orange Free State, 60 pp.

*Abstracts of 101 papers presented at the conference, held on 21-24 January 1980, are included.*

- Anonymous (1980). *Sugarcane diseases in South Africa*. Bulletin, Experiment Station of the South African Sugar Association 9, 24 pp.

*This revised edition contains general control recommendations followed by well illustrated, brief accounts of 27 diseases or disorders.*

- Labuschagne N., Kotzé J.M. & Wehner F.C. (1980). *Thielaviopsis basicola* infection of groundnuts in South Africa. *Phytophylactica* 12: 177-180.

- Gorter G.J.M.A. (1981). *Index of plant pathogens, II, and the diseases they cause in wild growing plants in South Africa*. Science Bulletin, Department of Agriculture and Fisheries 398, 84 pp.

- Gorter G.J.M.A. (1982). *Supplement to Index of plant pathogens (I) and the diseases they cause in cultivated plants in South Africa*. South Africa. Science Bulletin, Department of Agriculture and Fisheries 392, supplement 14 pp.

*The updated annotated lists include 57 newly reported pathogens and many new hosts and new provincial records.*

- Gorter G.J.M.A. (1982). *A newly revised guide to South African literature on plant diseases*. Technical Communication, Department of Agriculture, Republic of South Africa 179, v + 65 pp.

*This revision comprises an introduction and a list of books and periodicals consulted, followed by a list of diseases and subjects with relevant literature references under alphabetically arranged hosts and an alphabetical list of authors with their publications chronologically ordered (nearly 2200 articles).*

- Westhuizen G.C.A. van der, Labuschagne N. & Beer P.R. (1983). *Sclerotinia minor* on ground nut in South Africa: a first record. *Phytophylactica* 15: 75-77.

- Wingfield M.J., Strauss L.A. & Tribe G.D. (1985). Fungi associated with three pine barkbeetles in South Africa. *Phytopathology* 75: 1338.

- Hoffman M.T. & Mitchell D.T. (1986). The root morphology of some legume spp. in the south-western Cape and the relationship of vesicular-arbuscular mycorrhizas with dry mass and phosphorus content of *Acacia saligna* seedlings. *South African Journal of Botany* 52: 316-320.

- Darvas J.M. & Kotzé J.M. (1987). Fungi associated with pre- and postharvest diseases of avocado fruits at Wastfalia Estate, South Africa. *Phytophylactica* 19: 83-85.

- Gorter G.J.M.A. (1988). Identification of South African Erysiphaceae with a key to the species. *Phytophylactica* 20: 113-119.

- Sinclair R.C., Eicker A. & Morgan-Jones G. (1994). *A mycofloristic survey of saprophytic Hyphomycetes of indigenous forest habitats in southern Africa*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 613-618.

- Baxter A.P. (1994). *Past, present and prospective activities: Mycology unit, PRRI*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 687-695. (PRRI: Plant Protection Research Institute, Pretoria, South Africa.

## Sudan (the)

- Boughey A.S. (1946). A preliminary list of plant diseases in the Anglo-Egyptian Sudan. *Mycological Papers* 14: 1-16.

*This preliminary list of diseases of economic plants in the Anglo-Egyptian Sudan is compiled from the records of the Department of Agriculture and Forests and from various published works. The hosts are arranged alphabetically under their English names, the diseases of each being listed with English names and Latin binomials. That the list may have additional ecological value, the regional distribution of diseases has been shown by dividing the Sudan into its former 15 provinces. Each district represents a fairly uniform combination of climatic and edaphic factors. The presence and frequency or the absence (if the host is present but the disease is not) of a disease in a given district is indicated.*

- Tarr S.A.J. (1954; 1955). Diseases of economic crops in the Sudan. II. Fibers, Oil seeds, Coffee and Tobacco; III. Fodders, Pulses, and Vegetables. *FAO Plant Protection Bulletin* 2: 161-165; 3: 113-116.

- Tarr S.A.J. (1955). *The fungi and plant diseases of the Sudan*. Commonwealth Mycological Institute, Kew, 127 pp.

*Following a general introduction to the vegetation and climate of the area and the numbers and distribution of the fungi occurring there, these are listed in systematic order. Short sections are devoted to algae, bacteria, viruses, and non-parasitic disorders. There are indexes of genera and of hosts and substrates. All records collected prior to 1953 are included.*

- Tarr S.A.J. (1963). A supplementary list of Sudan fungi and plant diseases. *Mycological Papers* 85: 1-31.

*This list summarizes additional collections made during 1953-57 including all specimens with accession numbers SMH (Sudan Mycological Herbarium) 1950-3050, bringing the total identifications for Sudan to ca. 550 species. Attention was given latterly more to the wetter southern and coastal areas.*

- Anonymous (1979). *Annual Report of the Kenana Research Station 1973-76*. Kenena, Sudan, 76 pp.

*In the Plant Pathology section details are given of the control of Cercospora (Mycosphaerella) leafspot on groundnuts by fungicidal foliar sprays; the results of a survey of seedborne diseases of sorghum, rice, sesame and Hibiscus cannabinus; the detection and location of seed-borne fungi on Sorghum and rice; and the relative susceptibility of sesame cultivars to Xanthomonas sesami.*

- Hussein M.M. (1979). *Recent research on certain broad bean (Vicia faba) diseases in the Sudan*. In FABIS, Faba (Broad) Bean Information Service, Newsletter (G. Hawtin, R. Stewart & H. Ibrahim, eds.), 1, 44 pp.

- El Amin E.N. & Abdulla M.H. (1980). Survey of soil fungi from the Sudan Gezira. *Mycopathologia* 71: 131-136.

*The frequency of common and other soil fungi from six localities (120 sites) are tabulated.*

- Hussein M.M. (1982). *Major disease problems of faba bean in Sudan*. In Faba Bean Improvement (G. Hawtin & C. Webb, eds.). The Hague, Netherlands, Martinus Nijhoff: 227-232.

*Wilt (Fusarium oxysporum), root rot (F. solani f. sp. fabae), mosaics (pea mosaic virus and broad bean mottle virus) and powdery mildews (Leveillula taurica and Erysiphe polygoni) are widespread and can cause considerable loss of yield. Incidence is closely correlated to sowing date, allowing some (passive) control. Other potentially important diseases are discussed.*

- Baghdadani A.M. (1983). Black stem rust disease of wheat in the Sudan – a preliminary report. *Cereal Rusts Bulletin* 11: 1-15.

*The disease (Puccinia graminis f. sp. tritici) is prevalent in some areas and may cause a major problem, though at present under control because of the use of resistant varieties such as Giza 155 and Mexicani. The identification of physiologic races, screening varieties against them and studies on epidemiology are advised.*

- Abdel-Rahim A.M., Baghdadani A.M. & Abdalla M.H. (1983). Studies on the fungus flora in the rhizosphere of sugar cane plants. *Mycopathologia* 81: 183-186.

*Studies in a plantation in NW Sennar revealed that fungal activities increased with plant age. When near maturity the number of colonies declined. Isolated fungi from both rhizosphere and non-rhizosphere soils were predominantly Aspergillus and Rhizopus spp. Fungi including Fusarium spp., Curvularia sp. and dark sterile mycelia were present in higher frequencies on root surfaces than in the surrounding soils. Although the results varied slightly, the number and types of fungal colony in both clay and sandy soils were nearly the same.*

- Abdel-Rahim A.M. & Tawfig S. (1985). Evaluation of *Acremonium zonatum* and *Phoma sorghina* for the biological control of water hyacinth. *Tropical Pest Management* 31: 157-158.

- Anonymous (1988). *Annual Report of the Gezira Research Station and Substations 1980-81*. Sudan, Gezira Research Station, Khartoum, Sudan, 372 pp.

*This report on agricultural research in Sudan (Agricultural Research Corporation, Ministry of Agriculture and Natural Resources, Sudan) includes the result of numerous projects, under the headings agronomy, botany and plant pathology, cotton breeding; entomology; plant breeding; soil science; horticulture, silviculture, and the headings for six substations. The crops dealt with include cereals, vegetables and fruits, and many of the projects were on the control of pests, diseases and weeds.*

- Elshafie A.E. (1986). Taxonomic studies on seed-borne fungi of the Sudan II: *Curvularia*. *Sudan Journal of Science* 2: 51-70.

- Abdel-Rehim A.M., Osman N.A. & Idris M.O. (1989). Survey of some cereal grains and legume seeds for aflatoxin contamination in the Sudan. *Zentralblatt für Mikrobiologie* 144: 115-121.

### Tanzania

- Wallace G.B. & Wallace M.M. (1949). A list of plant diseases of economic importance in Tanganyika territory. *Mycological Papers* 26: 1-26.

*This list of plant diseases of economic importance in Tanganyika Territory combines those already published with additions and amendments, and covers the period from 1925 to early 1948. Recent additions are placed in an appendix. The diseases, fungus, bacterial, virus, and non-parasitic, are listed together under the common names of the hosts, arranged alphabetically. An index of the fungi and bacteria is appended.*

- Wallace G.B. & Wallace M.M. (1953). A supplement to a list of plant diseases of economic importance in Tanganyika territory. *Mycological Papers* 51: 1-7.

- Briant A.K. [1953 (1954)]. *Annual Report of the Department of Agriculture, Zanzibar Protectorate*, 29 pp.

- Riley E.A. (1960). A revised list of plant diseases in Tanganyika territory. *Mycological Papers* 75: 1-42.

*This list includes a large number of new records and name changes of pathogens since 1953.*

- Pirozynski K.A. (1972). Microfungi of Tanzania I. Miscellaneous fungi on oil palm. II. New hyphomycetes. *Mycological Papers* 129: 1-64.

- Ebbels D.L. & Allen D.J. (1978). A supplementary and annotated list of plant diseases, pathogens and associated fungi in Tanzania. *Phytopathological Papers* 22: 1-89.

- Maghembe J.A. & Redhead J.F. (1980). A survey of ectomycorrhizal fungi in pine plantations in Tanzania. *East African Agricultural Forestry Journal* 45: 203-206.

- Hillocks R.J. (1981). Cotton disease research in Tanzania. *Tropical Pest Management* 27: 1-12.

- Teri J.M. & Keswani C.L. [1981/1982 (1985)]. New records of plant diseases and pathogens in Tanzania. *East African Agricultural and Forestry Journal* 46: 97-98.

- Härkönen M. & Saarimäki T. (1994). *Myxomycetes, an unexplored class of fungi in Tanzania*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 735-748.

- Härkönen M., Saarimäki T. & Mwasumbi L. (1994). *Setting up a research project on Tanzanian mushrooms and their uses*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 729-734.

### Tchad

- Faurel L. & Schotter G. (1966). Notes mycologiques. V. Champignons coprophiles du Tibesti. [Mycological Notes. V. Coprophilous fungi from Tibesti.]. *Revue de Mycologie, Paris* 30: 330-351.

### Togo

- Niemann E., Lare M., Tchinde J. & Zakari I. (1972). Beitrag zur Kenntnis der Pflanzenkrankheiten und-schädlinge Togos. [Contribution to the knowledge of plant diseases and pests in Togo.]. *Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz* 79: 595-619.

- Steiner K.G. (1976). Epidemiology of Kainkope disease of coconut palms in Togo. *Plant Disease Reporter* 60: 613-617.

- Djiekpor E.K., Goka K., Lucas P. & Partiot M. (1981). La pourriture brune des cabosses du cacao due à *Phytophthora* sp. au Togo : évaluation et stratégies de lutte. [Brown rot of cacao pods due to *Phytophthora* sp. in Togo: evaluation and control strategy.]. *Café Cacao Thé* 25: 263-268.

- Kranz J. & Palti J. (Eds.) (1984). *Maladies des plantes cultivées au Togo. Recherches et observations*. [Diseases of cultivated plants in Togo. Research and observations.]. Eschborn, German Federal Republic; GTZ GmbH, 164 pp.

*This collection includes' papers on Kainkopé's disease of coconut and mycoplasmas associated with it; cassava mosaic virus and Colletotrichum gloeosporioides on cassava; virus diseases of yam; the feathery mottles syndrome of sweet potato; Phytophthora palmivora on cacao; Cercospora spp. and Leptosphaerulina trifolii on groundnut and rice diseases.*

### Tunisia

- Guyot A.L. [1952 (1954)]. Catalogue raisonné des micromycètes de Tunisie. I. Urédinées, 1. Genre *Puccinia* (à l'exclusion des espèces parasites des céréales). [Annotated catalogue of the microfungi of Tunisia. I. Uredinales, 1. Genus *Puccinia* (excluding the species parasitizing cereals).]. *Annales des Services Botaniques de Tunisie* 25: 1-170.

*This volume deals with the genus Puccinia in Tunisia. It is prefaced by a brief history of botany and mycology in the country and lists some 147 Puccinia species (excluding those on cereals), together with varieties, giving descriptions, known hosts, synonyms and distribution. An index of fungus names, a host index, and a bibliography of 280 references are included.*

- Guyot A.L. [1955 (1958)]. Contribution à l'étude de la flore mycologique de la Tunisie. [A contribution to the study of the mycological flora of Tunisia.]. *Annales des Services Botaniques de Tunisie* 28: 69-139.

*Descriptive and technical notes are given on 98 fungi (ascomycetes and fungi imperfecti, mostly on wild plants), including 13 new species, found in Tunisia.*

- Guyot A.L. (1959). Contribution à l'étude des Urédinées parasites de la flore tunisienne. 2. [A contribution to the study of the parasitic Uredinales of the Tunisian flora. 2.]. *Uredineana* 5 (Encyclopédie mycologique, 1958), 31: 353-383.

*This paper continues the author's notes on Tunisian rusts and is based on collections made during a stay in Tunisia in Sept.-Oct., 1953. Mention may be made of the following records: Puccinia antirrhini on Antirrhinum majus, P. coronata on Avena sterilis and on Festuca arundinacea, P. cynodontis on Cynodon dactylon, P. malvacearum on hollyhock, and Uromyces setariae-italicae on Setaria verticillata.*

- Anonymous (1984). *Screening wheat for resistance to Septoria leaf blotch*. International Centre of Agriculture Research in Dry Areas. In ICARDA Research Highlights, Aleppo, Syria: 45-47.

*Details are given of durum and bread wheat lines showing resistance to this disease in trials in disease nurseries in Portugal, Syria and Tunisia.*

- Romdhani M.S., Moens M. & Bayart J.D. (1984). Maladies fongiques des cucurbitacées dans le Sahel tunisien : inventaire, importance et conséquences agronomiques. [Fungal diseases of Cucurbitaceae in the Tunisian Sahel: inventory, importance and agronomic consequences]. *Tropicicultura* 2: 123-126.

*Results of a survey of watermelon, melon, and cucumber diseases in nurseries and plastic tunnels are presented. Control measures are briefly discussed.*

- Halila M.H. & Harrabi M.M. (1990). *Breeding for dual resistance to Ascochyta and wilt diseases in chickpea*. Optsions Méditerranéennes. Série A, Séminaires Méditerranéens 9, pp. 163-166. In Proceedings of a seminar on the present status and future prospects of chickpea crop production and improvement in the Mediterranean countries, 11-13 July 1988, Zaragoza, Spain.

*A description is given of the techniques used by the Tunisian Food Legume Improvement Programme in its breeding programme initiated in 1982 which aims to produce Cicer arietinum cultivars with resistance to both Ascochyta rabiei and wilt (Fusarium oxysporum f. sp. ciceri, Verticillium albo-atrum and other Fusarium species).*

## Uganda

- Hansford C.G. (1937-1945). Contribution towards the fungus flora of Uganda. I. Meliolineae; II. Meliolineae. Supplement; III. Some Uganda Ascomycetes; V. Fungi Imperfecti; VI. New records; VII. New records and revisions; VIII. New records. *Journal of the Linnean Society (Botany)* 51: 265-284; 537-545; *Proceedings of the Linnean Society, London* 1940-41: 4-52; 1942-43: 34-67; 102-124; 1943-44: 20-41; 1944-45: 138-212.

- Hansford C.G. (1937; 1942; 1943; 1944). Host list of the parasitic fungi of Uganda. Parts I-II, III, IV-V. *East African Agricultural Journal of Kenya* 3: 235-240; 319-324; 8: 248-252; 9: 50-55; 102-106.

- Ainsworth G.C. (1941). Contribution towards the fungus flora of Uganda. IV. The Ustilaginales of Uganda. *Proceedings of the Linnean Society, London* 1948-49: 162-198.

- Hansford C.G. (1946). The foliicolous ascomycetes, their parasites and associated fungi, especially as illustrated by Uganda specimens. *Mycological Papers* 15: 1-240.

- Hansford C.G. (1947). New or interesting tropical fungi I. *Proceedings of the Linnean Society, London* 158: 28-50.

- Emechebe A.M. (1975). *Some aspects of crop diseases in Uganda*. Makerere University, Kampala, 43 pp.

- Simbwa-Bunnya M. (1978). *Varietal resistance to some diseases in Uganda*. Sugarcane Pathologists' Newsletter 20, 49 pp.

*Results of resistant trials against sugarcane mosaic virus, smut (Ustilago scitaminea), rust (Puccinia sp.) and brown spot (Cercospora longipes) on sugarcane are given.*

- Gjaerum H.B. (1983). East African rusts (Uredinales), mainly from Uganda 1. On Poaceae. *Mycotaxon* 18: 209-234.

*Among the 47 taxa described, Puccinia melanocephala is newly reported from Uganda on sugarcane.*

## Zaire

- Beeli M. (1936). Contribution à l'étude de la flore mycologique du Congo. *Bulletin du Jardin Botanique de l'Etat de Bruxelles* 14: 83-91.

- Steyaert R.L. (1948). Contribution à l'étude des parasites des végétaux du Congo belge. [A contribution to the study of the plant parasites of the Belgian Congo.]. *Bulletin de la Société Botanique de Belgique* 80: 11-58.

- Heim R. (1951). Les *Termitomyces* du Congo Belge recueillis par M<sup>me</sup> M. Goossens-Fontana. [The *Termitomyces* of the Belgian Congo collected by M<sup>me</sup> M. Goossens-Fontana.]. *Bulletin du Jardin Botanique, Bruxelles* 21 (3-4): 206-222.

*Descriptive notes (with a key to the African species of the genus) are given on six species of Termitomyces, including T. globulus Heim & Goossens n. sp., collected from a termite nest in the Belgian Congo.*

- Meyer J. (1959). *Moisissures du sol et des litières de la région de Yangambi (Congo Belge)*. Publication de l'Institut National des Etudes Agronomiques du Congo, Série Scientifique 75, 211 pp.

*In this monograph, based on work carried out since 1952 at the Laboratoire de Microbiologie des Sols, Centre de Recherches de l'INEAC, Yangambi, the author presents his*

taxonomic observations on the fungi isolated locally by him from soil and litter. All the fungi identified to genus or species are described, and many are figured. A total of 251 species is covered, 191 from soil (13 Mucorales, 31 Ascomycetes – not including ascogenous species of *Penicillium* and *Aspergillus* – and 147 Deuteromycetes) and 60 from litter; 77% are fungi imperfecti. *Penicillium* (17 spp.) and *Aspergillus* (21 spp.) were not studied in detail.

- Meyer J. (1963). *Ecologie et sociologie des microorganismes du sol de la cuvette centrale congolaise*. [Ecology and sociology of the soil microfungi of the Central Congo Basin.]. Publication de l'Institut National des Etudes Agronomiques du Congo, Série Scientifique 101, 137 pp.

*A list of 231 species, including six new records from soil, from certain plant associations at Yangambi, and a discussion of the fungal communities and factors which determine their composition.*

- Meyer J.A. [1964 (1965)]. Micromycètes nouveaux pour la flore de la République Démocratique du Congo. [Micromycetes new for the flora of the Congo Democratic Republic.]. *Revue de Mycologie, Paris, N.S.* 29: 305-311.

- Thoen D. (1974). Premières indications sur les mycorrhizes et les champignons mycorrhiziques des plantations d'exotiques du Haut-Shaba (République du Zaïre). *Bulletin de l'institut agronomique de l'état et des stations de recherches de Gembloux* 9: 215-227.

- Pacumbaba R.P. (1988). Incidence of three major cassava diseases on local susceptible cassava cultivars at three planting dates. *Journal of Phytopathology* 122: 337-342.

*Incidence of African cassava mosaic disease, cassava bacterial blight and cassava anthracnose was investigated on 20 cultivars planted in December, February and April during 1976-78 in Zaire. Results suggested that in the absence of resistant cassava cultivars, susceptible cultivars should be planted in Zaire in April rather than in December or February.*

## Zambia

- Riley E.A. (1956). A preliminary list of plant diseases in Northern Rhodesia. *Mycological Papers* 63: 1-28.

*Bacterial, fungus, and virus pathogens and physiological disorders of plants in Northern Rhodesia are listed under the hosts arranged alphabetically according to their Latin names, notes on symptoms and control being provided where applicable and the provinces in which the diseases have been recorded being indicated. There is an index to pathogens and disorders and a list of vernacular host names with their Latin equivalents. The author also names those diseases for which a watch is being kept and which up to the present have been excluded from the region.*

- Angus A. (1962-66). *Annotated list of plant pests and diseases in Zambia (Northern Rhodesia) recorded in the Plant Pathology Laboratory, Mount Makulu Research Station, Parts 1-7*, 384 pp.

- Angus A. (1966). *Annotated list of plant pests, diseases, and fungi in Zambia*. Supplement, ii + 97 pp. [Cyclostyled, University St. Andrews, Scotland.].

*Specimens received up to the end of June 1964 are listed under host plants arranged alphabetically by botanical name, and corrections to parts 1-7 are appended, with some identifications not previously included.*

- Parker E.J. (1978). *An annotated list of problems which affect some Zambian wild fruit trees*. TIRC / NCSR Research Paper 6, 28 pp.

*The fungi and insects recorded on 14 wild fruit trees are listed.*

- Pearce G.D. (1979). A new vascular wilt disease and its relationship to widespread decline of *Pterocarpus angolensis* in Zambia. *PANS* 25: 37-45.

*A serious decline of this important timber tree has caused concern in southern Africa for many years. A new and discrete vascular wilt disease, characterized by a combination of distinctive crown symptoms with streaks of vascular discolorations in the youngest sapwood, is described from Zambia. *Fusarium oxysporum* is provisionally regarded as the causal organism.*

- Pegler D.N. & Pearce G.D. (1980). The edible mushrooms of Zambia. *Kew Bulletin* 35: 475-491.

- Wellving A.H.A. (Ed.) (1984). *Seed production handbook of Zambia*. Lusaka, Zambia: Department of Agriculture, 391 pp.  
*This revised and updated booklet replaces the Seed Production Recommendations Manual published in 1975.*
- Javaid I. (1985). Crop protection measures in mango orchards in Zambia. *Tropical Pest Management* 31: 33-37.  
*The current status of major pests and diseases in this crop is reported with particular reference to their relative importance and control under Zambian climatic conditions. Plant protection measures are outlined and a spray programme is suggested. Further research to enable an integrated approach to control in these orchards is essential.*
- Mingochi D.S. & Jensen A. (1987). Pests and diseases in tomato cultivars in Zambia; their seasonal occurrence and possible control. *Acta Horticulturae* 190: 131-138. *In Symposium on tomato production in arid land, Cairo, Egypt, 9-15 December 1984 [El-Beltagy A.S. & Persson A.R., eds.].*
- Anonymous (1991). *Joint submission from Zambia. Answers to the questions to be discussed at the consultation on plant protection to be held in Gaborone, Botswana, October 22-26, 1990. Working paper* – International Rural Development Centre, Swedish University of Agricultural Sciences 165: 57-61.  
*A list is included of the important pests and diseases of maize, wheat, sorghum, rice, soybean, sunflowers, groundnuts, beans and cotton in Zambia.*
- Kannaiyan J. & Haciwa H.C. (1993). Diseases of food legume crops and the scope for their management in Zambia. *FAO Plant Protection Bulletin* 41: 73-90.  
*Research carried out during 1983-91 on diseases of food legume crops and the scope for their management in Zambia is described. The 3 major crops, groundnut, bean and cowpea are covered in detail along with the results of a smaller study on the minor food legume crops: bambara groundnut, pigeon and chickpea.*
- Kapooria R.G. (1994). *Powdery mildew fungi and their host range in Zambia*. *In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 609-612.*

## Zimbabwe

- Hopkins J.C.F. (1950). *A descriptive list of plant diseases in Southern Rhodesia and list of bacteria and fungi*. Memoir of the Department of Agriculture of South Rhodesia 2, 106 pp.
- Whiteside J.O. (1966). A revised list of plant diseases in Rhodesia. *Kirkia* 5: 87-196.  
*This list includes records published in the 1950 list and is along the same lines except that information on disease distribution and control has been omitted. Records include Phytophthora cryptogea on Pyrethrum, Fusarium oxysporum f. sp. vasinfectum on cotton, Claviceps paspali on Paspalum dilatatum, Tolyposporium penicillariae on Pennisetum typhoides, Sphaerotheca morsuvae on blackcurrant and gooseberry, sugarcane mosaic virus on sugarcane, Verticillium albo-atrum on potato, and Gloeocercospora sorghi on sorghum.*
- Whiteside J.O. & Herd G.W. (1966). *List of diseases of economic plants in Rhodesia*. Rhodesia Agricultural Journal, Technical Bulletin 5, 28 pp.
- Rothwell A. (1974). Control of plant diseases. *Rhodesia Agricultural Journal* 71: 111-124.  
*A useful, brief outline of the principles used in the control of plant diseases is given. There is a list of fungicides and a table of the most important diseases, giving hosts, symptoms, control and general remarks.*
- Rothwell A. (1975). A revised list of plant diseases in Rhodesia – Additions, 1966-72. *Kirkia* 10: 295-307.
- Anonymous (1979). *Annual Report and Accounts of the Tobacco Research Board of Zimbabwe Rhodesia for the year ended 30 June 1979*. Salisbury, Zimbabwe, Rhodesia; Tobacco Research Board, 32 pp.

- Anonymous (1980). *Agricultural Research Council of Zimbabwe Rhodesia Technical Report 1979*. Salisbury, Zimbabwe; Agricultural Research Council, 44 pp.  
*The report includes current work undertaken at the Plant Pathology Section.*
- Anonymous (1983). *Annual report and accounts of the Tobacco Research Board of Zimbabwe for the year ended 30 June 1983*. Harare, Zimbabwe; Tobacco Research Board, 24 pp.
- Maramba P. (1983). Plant pathology notes. *Zimbabwe Agricultural Journal* 80: 23.  
*The results are given on a cowpea disease survey at two sites in which 9 foliar and other diseases were recorded.*
- Cole D.L. (1985). *Pests, diseases and weeds in groundnuts in Zimbabwe*. In Proceedings of the Regional Groundnut Workshop for Southern Africa. Patancheru, Andhra Pradesh 502 324, India: International Crops Research Institute for Semi-Arid Tropics (ICRISAT): 121-124.
- Cousins L. (1987). *Alternaria a priority for Zimbabwe's researchers*. World Tobacco No. 98, p. 44 and p. 46. From Tobacco Abstracts (1987) 31 (5-6). Abstract 1877.  
*Work done in Zimbabwe for breeding tobacco for multiple resistance is outlined, with details on current breeding work on resistance to Alternaria.*
- Masuka A.J. & Ryvarden L. (1992). Aphyllophorales on pinus and eucalyptus in Zimbabwe. *Mycotaxon* 44: 243-250.
- Masuka A.J. & Ryvarden L. (1993). Aphyllophorales (Basidiomycetes) of Zimbabwe. *African Journal of Mycology and Biotechnology* 1: 24-32.
- Masuka A.J. & Ryvarden L. (1994). *The Coniophoraceae (Aphyllophorales, Basidiomycetes) in pine and eucalypt plantations in Zimbabwe*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 773-778.

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- HENNEBERT G.L., 1994 – *Aspects of African Mycology*. Louvain-la-Neuve: International Mycological Association.
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- JANARDHANAN K.K., RAJENDRAN C., NATARAJAN K. & HAWKSWORTH D.L. (Eds.), 1997 – *Tropical Mycology*. Enfield, New Hampshire: Science Publishers Inc., USA, 315 pp.
- JOHNSTON A. & BOOTH C. (Eds.), 1983 – *Plant Pathologist's Pocketbook*. 2<sup>nd</sup> Ed. – CAB International, UK.
- RAZAK A.A. (Ed.), 1992 – *The Second Regional Mycological Conference RMC 2. ABSTRACTS*, University of Al-Azhar, Cairo, Egypt.
- SUTTON B.C., 1994 – *Contribution of the International Mycological Institute to African Mycology*. In Proceedings of the XIIIth Plenary Meeting AETFAT Congress, Malawi, 2-11 April 1991 (J.H. Seyani & A.C. Chikuni, eds.), vol. 1, Montfort Press and Papulan Publication, Zambia: 659-669.
- WATLING R. & HAWKSWORTH D.L. (Eds.), 1997 – Fungal Biodiversity: a British Mycological Society Symposium. *Biodiversity & Conservation* 6: 659-763.
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