INTERNATIONAL BIBLIOGRAPHY ON AZOLLA

Compiled by
Dionisia T. Capaya

1979
Library and Documentation Center
INTERNATIONAL RICE RESEARCH INSTITUTE
LOS BAÑOS, LAGUNA, PHILIPPINES
MAIL ADDRESS: P.O. BOX 933, MANILA, PHILIPPINES

INTERNATIONAL BIBLIOGRAPHY ON AZOLLA

Compiled by
Dionisia T. Capaya

1979
Library and Documentation Center
INTERNATIONAL RICE RESEARCH INSTITUTE
LOS BAÑOS, LAGUNA, PHILIPPINES
MAIL ADDRESS: P.O. BOX 933, MANILA, PHILIPPINES

The International Rice Research Institute receives support from a number of donors, including The Ford Foundation, The Rockefeller Foundation, the European Economic Community, the United Nations Development Programme, the United Nations Environment Programme, the Asian Development Bank, the International Development Research Centre, the World Bank, and the international aid agencies of the following governments: USA, Canada, Japan, the United Kingdom, the Netherlands, Australia, the Federal Republic of Germany, Iran, Saudi Arabia, New Zealand, Belgium, Denmark, and Sweden.

The responsibility for all aspects of this publication rests with the International Rice Research Institute.

PREFACE

Azolla is a water fern belonging to the family of cryptogamic free floating ferns, established by Lamarck in 1783. It occurs in ponds, ditches and paddy fields in warm temperate and tropical regions.

The economic importance of Azolla is shown by the fact that through its symbiotic relationship with the blue-green algae, Anabaena, it can fix nitrogen for the rice plant in rice paddies. It serves as a supplementary source of nitrogenous fertilizer needed by the rice plant.

The literature on Azolla is widely scattered in scientific journals and papers and written in diverse languages. In countries where it is extensively utilized as a nitrogen-fixer in rice cropping systems such as China and Vietnam, limited literature has been written, and very few are in English.

This bibliography is an offshoot of the Nitrogen and Rice Symposium held at the International Rice Research Institute in September 1978, where it was agreed, inter alia, that "IRRI should compile all information on Azolla from different countries."

It attempts to gather under one cover all literature published from the earliest times to the present. Citations date from 1783 through 1979.

Entries are classified according to a broad scheme. Within each subject category, entries are arranged alphabetically by main entries. All entries are numbered consecutively for easier access.

Each entry gives complete bibliographic data, including the author, title, source, specific pages, and date. Original titles of foreign language publications are given whenever possible. In cases where original titles cannot be obtained, and for those not in Roman characters, only the English titles are given, with an indication of the language of the original.

Reprints of articles with English language translation are available for those entries preceded by an asterisk (*).

Separate author and keyword indexes are provided at the end.

In a work of this nature, omissions and some inaccuracies are inevitable. Mention is made of the difficulty in gathering articles and reprints of articles due to geographic and linguistic constraints. It was also discovered that references taken from secondary sources are often inaccurate although efforts have been made to verify them with original articles. It will be appreciated if information overlooked and inaccuracies committed are brought to our attention.

Many of the items included are available upon request to scientists of all countries at the following nominal charges:

$0.20 (U.S.) for each page or a fraction thereof,
copied from an article or book, plus postage

Payment in any of the following terms is acceptable: Cash, check, or money order made payable to the International Rice Research Institute.

The Institute recognizes that some scientists conducting research on Azolla may not always have access to funds or appropriate foreign exchange to advance significant research. The Institute encourages scientists in such situations to request the literature needed. Within its capabilities, the Institute may wish to finance such distribution. Address all requests to:

Library and Documentation Center
International Rice Research Institute
P.O. Box 933, Manila, Philippines

ACKNOWLEDGMENTS

This compilation would not have been possible without the help of the following people:

Dr. Iwao Watanabe, Head, Soil Microbiology Department, for his advice on the classification used and for unselfishly sharing his own working bibliography;

Mrs. Barbara Bird, Information Specialist, College of Tropical Agriculture, University of Hawaii at Manoa, for giving us a lead on the initial sources of bibliographical citations;

Mr. Thomas Lumpkin, Junior Agronomist, College of Tropical Agriculture, University of Hawaii at Manoa, Ms. R. Katherine Jones, Editorial Assistant, International Plant Protection Center, University of Florida, and Mr. Arthur W. Green, Tropical Products Institute for supplying some of the citations;

Drs. Pierre A. Roger, Visiting Scientist, Soil Microbiology Department and Sugih Wanasuriya, Post-Doctoral Fellow, Agronomy Department, Messrs. Volkmar Hasse, and Ho Dang Than, Research Fellows, Entomology Department, for clarifying and translating French, German, and Vietnamese titles into English;

Special mention goes to Miss Candelaria Banzuela for typing the author and keyword entries and the manuscript.

Sincerest gratitude is also given to all the others who made this piece of work possible.

TABLE OF CONTENTS

	Page
PREFACE	iii
ACKNOWLEDGMENTS	v
TABLE OF CONTENTS	vii
ABBREVIATIONS OF SERIAL TITLES	ix
BIBLIOGRAPHY PROPER	
General	1
Anatomy, Morphology, Cytology, Histology	2
Physiology and Biochemistry	6
Taxonomy and Geographic Distribution	11
Ecology	18
Agronomy	
General	21
Azolla in Cropping Systems (As Fertilizer and Green Manure)	21
Plant Protection	
Pests and Diseases of Azolla	25
Azolla as Pest	26
Analysis and Composition; Non-Agronomic Uses	28
AUTHOR INDEX	31
KEYWORD INDEX	37

ABBREVIATIONS OF SERIAL TITLES

ADAB [Agric. Dev. Agencies Bangladesh] News
ADAB [Agricultural Development Agencies in Bangladesh] News

ASB (Assoc. Southeast. Biol.) Bull.
ASB (Association of Southeastern Biologists) Bulletin

Acta Bot. Neerl.
Acta Botanica Neerlandica

Acta Bot. Sinica
Acta Botanica Sinica

Acta Fac. Rerum Nat. Univ. Comenianae Bot.
Acta Facultatis Rerum Naturalium Universitatis Comenianae, Botanica

Acta Pedol. Sinica
Acta Pedologica Sinica

Acta Zool. Lilloana
Acta Zoologica Lilloana

Adansonia
Adansonia

Aduthurai Rep.
Aduthurai Reporter

Advance. Sci.
Advancement of Science

Agric. Gaz. N. S. W.
Agricultural Gazette of New South Wales

Agric. Pakistan
Agriculture Pakistan

Agric. Sci. Technol.
Agricultural Science and Technology

Agrivita
Agrivita

Am. Fern J.
American Fern Journal

Am. J. Bot.
American Journal of Botany

Am. Sci.
American Scientist

An. Inst. Biol. Univ. Nac. Autom. Mexico
Anales del Instituto de Biologia Universidad Nacional Autonoma de Mexico

Ann. Bogor.
Annales Bogoriensis

Ann. Bot.
Annals of Botany

Ann. Bot. (Rome)
Annali di Botanica (Rome)

Ann. Bot. Gard. Buitenzorg
Annals of the Botanic Garden, Buitenzorg

Ann. Entomol. Soc. Am.
Annals of the Entomological Society of America

Ann. Microbiol. Enzimol.
Annali di Microbiologia ed Enzimologia

Ann. Mo. Bot. Gard.
Annals of the Missouri Botanical Garden

Appl. Environ. Microbiol.
Applied and Environmental Microbiology

Aquat. Bot.
Aquatic Botany

Arch. Hydrobiol.
Archiv fuer Hydrobiologie

Arch. Microbiol.
Archives of Microbiology

Arch. Mikrobiol.
Archiv fuer Mikrobiologie

BIOTROP [Reg. Cent. Trop. Biol.] Newsl.
BIOTROP [Regional Center for Tropical Biology] Newsletter

Bangladesh J. Bot.
Bangladesh Journal of Botany

Beitr. Biol. Pflanzen
Beitrage zur Biologie der Pflanzen

Ber. Dtsch. Bot. Ges.
Berichte der Deutschen Botanischen Gesellschaft

Biol. Plant.
Biologia Plantarum

Biol. Sci. (Tokyo)
Biological Science (Tokyo)

Biologia (Lahore)
Biologia (Lahore)

BioScience
BioScience

Bol. Real Soc. Espan. Hist. Natur. Secc. Biol.
Boletin de la Real Sociedad Española de Historia Natural, Seccion Biologica

Bol. Soc. Argent. Bot.
Boletin de la Sociedad Argentina de Botanica

Bol. Soc. Bot. Mexico
Boletin de la Sociedad Botanica de Mexico

Bol. Soc. Broteriana
Boletim de Sociedad Broteriana

Bot. Arch.
Botanisches Archiv

Bot. Gaz.
Botanical Gazette

Bot. Mag.
Botanical Magazine

Bot. Rev.
Botanical Review

Bot. Zh.
Botanicheskii Zhurnal

Botanique (Nagpur)
Botanique (Nagpur)

Br. Fern Gaz.
British Fern Gazette

Br. Phycol. J.
British Phycological Journal

Bull. Acad. Pol. Sci. Ser. Sci. Biol.
Bulletin de l'Academie Polonaise des Sciences, Serie de Sciences Biologiques

Bull. Aichi Gakugei Univ.
Bulletin of the Aichi Gakugei University

Bull. Bot. Surv. India
Bulletin of the Botanical Survey of India

Bull. Can. Pet. Geol.
Bulletin of the Canadian Petroleum Geology

Bull. Econ. Indochine
Bulletin Economique de l'Indochine

Bull. Inf. Rizicult. Fr.
Bulletin d'Information des Riziculteurs de France

Bull. Kebun Raya
Bulletin Kebun Raya

Bull. Mens. Acad. Sci. Lett. Montpellier
Bulletin Mensuel de l'Academie des Sciences et Lettres de Montpellier

Bull. Mens. Soc. Linn. Lyon
Bulletin Mensuel de la Societe Linneenne de Lyon

Bull. Mus. Hist. Nat. Paris
Bulletin du Museum d'Histoire Naturelle, Paris

Bull. Osaka Mus. Nat. Hist.
Bulletin of the Osaka Museum of Natural History

Bull. Soc. Bot. Fr.
Bulletin de la Societe Botanique de France

Bull. Soc. Hist. Nat. Autun
Bulletin de la Societe d'Histoire Naturelle d'Autun

Bull. Torrey Bot. Club
Bulletin of the Torrey Botanical Club

C. R. Hebd. Seances Acad. Sci. Ser. D Sci. Nat.
Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences, Serie D: Sciences Naturelles

C. R. Trav. Lab. Carlsberg
Comptes Rendus des Travaux du Laboratoire Carlsberg

Calcutta J. Nat. Hist.
Calcutta Journal of Natural History

Calif. Agric.
California Agriculture

Can. J. Bot.
Canadian Journal of Botany

Can. J. Earth Sci.
Canadian Journal of Earth Science

Castanea
Castanea

Cellule
Cellule

Cereal Foods World
Cereal Foods World

Collect. Bot.
Collectanea Botanica

Contrib. Univ. Mich. Mus. Paleontol.
Contributions, University of Michigan Museum of Paleontology

Curr. Sci.
Current Science

Cytologia
Cytologia

Dacca Univ. Stud.
Dacca University Studies

Darwiniana
Darwiniana

Diss. Abstr. Int. B
Dissertation Abstracts International, Section B

Dokl. Akad. Nauk SSSR
Doklady Akademii Nauk SSSR

Ecology
Ecology

Endeavour
Endeavour

Entomol. News
Entomological News

Environ. Entomol.
Environmental Entomology

Experientia
Experientia

FAO [Food Agric. Organ. U. N.] Fish. Rep.
FAO [Food and Agriculture Organization of the United Nations] Fisheries Report

FAO [Food Agric. Organ. U. N.] Soils Bull.
FAO [Food and Agriculture Organization of the United Nations] Soils Bulletin

Farm Factory
Farm and Factory

Farm Sci.
Farm Science

Farming S. Afr.
Farming in South Africa

Fed. Proc. Fed. Am. Soc. Exp. Biol.
Federation Proceedings. Federation of the American Societies for Experimental Biology

Fern Bull.
Fern Bulletin

Fiziol. Biokhim. Kul't. Rast.
Fiziologiya i Biokhimiya Kul'turnykh Rastenii

Flora
Flora

Fortschr. Bot.
Fortschritte der Botanik

Furrow
Furrow

Geobios
Geobios

Geol. Jahrb.
Geologische Jahrbuch

Geol. Mijnbouw
Geologie en Mijnbouw

Geophys. Monogr. Ser
Geophysical Monograph Series

Gesselschaftsmorphologie

Gorteria
Gorteria

Grana
Grana

Hess. Florist Briefe
Hessische Florist Briefe

Hidrobiologia
Hidrobiologia

Hortscience
Hortscience

Hyacinth Contr. J.
Hyacinth Control Journal

Hydrobiologia
Hydrobiologia

IRRI [Int. Rice Res. Inst.] Rep.
IRRI [International Rice Research Institute] Reporter

I. U. C. N. [Int. Union Nat. Nat. Resources] Publ. New Ser.
I. U. C. N. [International Union of Nature and Natural Resources] Publication, New Series

Indian Ecol.
Indian Ecologist

Indian Farming
Indian Farming

Indian J. Agric. Sci.
Indian Journal of Agricultural Sciences

Indian J. Weed Sci.
Indian Journal of Weed Science

Int. Rice Res. Newsl.
International Rice Research Newsletter

Intensive Agric.
Intensive Agriculture

Invest. Zool. Chilenas
Investigaciones Zoologicas Chilenas

Irish Nat. J.
Irish Naturalists' Journal

Irrig. Farmer
Irrigation Farmer

Izv. Bot. Inst. Bulg. Akad. Nauk.
Izvestiya na Botanicheskiya Institut Bulgarska Akademiya na Naukite

J. Agric. Food Chem.
Journal of Agricultural and Food Chemistry

J. Asiat. Soc.
Journal of the Asiatic Society

J. Bot. (London)
Journal of Botany (London)

J. Cell Biol.
Journal of Cell Biology

J. Chi. Agric. Sci.
Journal of Chinese Agricultural Sciences

J. Ecol.
Journal of Ecology

J. Fish Biol.
Journal of Fish Biology

J. Indian Bot. Soc.
Journal of the Indian Botanical Society

J. Inland Fish. Soc. India
Journal of the Inland Fisheries Society of India

J. Jap. Bot.
Journal of Japanese Botany

J. Linn. Soc. Bot.
Journal of the Linnaean Society. Botany

J. Paleontology
Journal of Paleontology

J. Phycol.
Journal of Phycology

J. R. A. M. C. [Roy. Army Med. Corps]
Journal of R. A. M. C. [Royal Army Medical Corps]

J. Roy. Asiatic Soc. Straits Br.
Journal of the Royal Asiatic Society. Straits Branch

J. Sci. Soil Manure
Journal of the Science of Soil and Manure

J. Tenn. Acad. Sci.
Journal of the Tennessee Academy of Science

Kalikasan
Kalikasan

Kerala Karshakan
Kerala Karshakan

Kexue Tongbao
Kexue Tongbao

Khoa Hoc Va Ky Thuat Nong Nghiep
Khoa Hoc Va Ky Thuat Nong Nghiep

Kurtziana
Kurtziana

Levende Nat.
Levende Natuur

Linnaea
Linnaea

MACCO [Mysore Agro Chem. Co.] Agric. Dig.
MACCO [Mysore Agro Chemical Company] Agricultural Digest

Madroño
Madroño

Magyar Bot. Lapok
Magyar Botanikai Lapok

Mem. Indian Bot. Soc.
Memoirs of the Indian Botanical Society

Micropaleontology
Micropaleontology

Monde Plant.
Monde des Plantes

N. Z. J. Agric.
New Zealand Journal of Agriculture

N. Z. J. Agric. Sci.
New Zealand Journal of Agricultural Science

N. Z. J. Mar. Freshwater Res.
New Zealand Journal of Marine and Freshwater Research

Nat. Monspel. Ser. Bot.
Natural Monspeliensia Serie Botanique

Natur Volk
Natur und Volk

Nature
Nature

Nauka Pered. Opyt Sel'sk. Khoz.
Nauka Peredovoi Opyt v Sel'skom Khozyaistve

Ned Kruidk. Arch.
Nederllandsch Kruidkundig Archief

New Phytol.
New Phytologist

News Lett. Limnol. Soc. South Afr.
News Letter, Limnological Society of South Africa

Nogaku
Nogaku

Northwest. Nat.
Northwestern Naturalist

Nova Acta Leopold.
Nova Acta Leopoldina

Oecol. Plant.
Oecologia Plantarum

Ohio Nat.
Ohio Naturalist

Orange River Progr. Rep.
Orange River Progress Report

Outlook Agric.
Outlook on Agriculture

PCARR [Philipp. Counc. Agric. Resources Res.] Monit.
PCARR [Philippine Council for Agriculture and Resources Research] Monitor

Palaeogeogr. Palaeoclimatol. Palaeoecol.
Palaeogeography, Palaeoclimatology, Palaeoecology

Palaeontographica
Palaeontographica

Palaeontol. Z.
Palaeontologische Zeitschrift

Palaeontology
Palaeontology

Peningkatan Penel. Pengembangan Prasarana Penel. Biol. Laporan Teknik
Peningkatan Penelitian dan Pengembangan Prasarana Penelitian Biologi Laporan Teknik

Pflanzenschutz Nachr. Bayer
Pflanzenschutz Nachrichten Bayer

Philipp. Farmers' J.
Philippine Farmers' Journal

Philos. Trans. Roy. Soc. London Ser. B
Philosophical Transactions of the Royal Society of London Series B

Photosynthetica
Photosynthetica

Phykos
Phykos

Physiol. Plant.
Physiologia Plantarum

Physis Secc. B Aguas Cont. Org.
Physis Seccion B las Aguas Continentales y sus Organismos

Phytochemistry
Phytochemistry

Phytologia
Phytologia

Phytomorphology
Phytomorphology

Phyton
Phyton

Plant Physiol.
Plant Physiology

Planta
Planta

Poult. Sci.
Poultry Science

Preslia
Preslia

Proc. Acad. Sci. Amsterdam
Proceedings of the Royal Academy of Sciences of Amsterdam

Proc. Camb. Philos. Soc.
Proceedings of the Cambridge Philosophical Society

Proc. Indian Acad. Sci. Sect. B.
Proceedings of the Indian Academy of Sciences Section B

Proc. Indian Sci. Congr.
Proceedings, Indian Science Congress

Proc. Indiana Acad. Sci.
Proceedings of the Indiana Academy of Sciences

Proc. La. Acad. Sci.
Proceedings of the Louisiana Academy of Sciences

Proc. N. Z. Inst.
Proceedings of the New Zealand Institute

Proc. N. Z. Weed Contr. Conf.
Proceedings of the New Zealand Weed Control Conference

Proc. Nat. Sci. Assoc. Staten Isl.
Proceedings of the Natural Science Association of Staten Island

Proc. Natl. Acad. Sci. India
Proceedings of the National Academy of Sciences of India

Proc. Northeast. Weed Contr. Conf.
Proceedings of the Northeastern Weed Control Conference

Proc. Roy. Soc. Victoria
Proceedings of the Royal Society of Victoria

Progr. Fish Cult.
Progressive Fish and Culturist

Publ. Inst. Bot. Univ. Jagellonicae Cracoviensis
Publicationes Instituti Botanici Universitatis Jagellonicae Cracoviensis

Queensl. Agric. J.
Queensland Agricultural Journal

Queensl. J. Agric. Anim. Sci.
Queensland Journal of Agriculture and Animal Sciences

Recl. Trav. Bot. Neerl.
Recueil des Travaux Botaniques Neerlandais

Rep. Bot. Soc. Exch. Club Br. Isl.
Report of the Botanical Society and Exchange Club of the British Isles

Rev. Bot. Appl. Agric. Colon.
Revue de Botanique Applique et d'Agrieulture Coloniale

Rev. Cytol. Biol. Veg.
Revue de Cytologie et de Biologie Vegetales

Rev. Latinoam. Quim.
Revista Latinoamericana de Quimica

Rev. Palaeobot. Palynol.
Review of Palaeobotany and Palynology

Rhodora
Rhodora

Rice Res. News
Rice Research News

Riso
Il Riso

Riv. Idrobiol.
Rivista di Idrobiologia

Riz Rizicult.
Riz et Riziculture

SIDA Contrib. Bot.
SIDA Contributions to Botany

Sber. Akad. Wiss. Wien Math. Naturwiss. Kl. Abt. I.
Sitzungsberichte der Akademie der Wissenschaften in Wien. Mathematisch-Naturwissenschaftliche Klasse. Abteilung I

Sci. Agric. Sinica
Scientia Agricultura Sinica

Sci. Cult.
Science and Culture

Sci. Mo.
Scientific Monthly

Sci. Rep. Yokosuka City Mus.
Science Reports of the Yokosuka City Museum

Science
Science

Search
Search

Sinensia
Sinensia

S-kh. Biol.
Sel'skokhozyaistvennaya Biologiya

Stain Technol.
Stain Technology

Stud. Cercet. Biol. Ser. Biol. Veg.
Studii si Cercetari de Biologie, Seria Biologia Vegetala

Subtrop. Kul't.
Subtropicheskie Kul'tury

Taiwania
Taiwania

Taxon
Taxon

Third World Agric.
Third World Agriculture

Torreya
Torreya

Tr. Bot. Inst. Akad. Nauk SSSR Ser 8 (Palaeobot.)
Trudy Botanicheskogo Instituta. Akademiya Nauk SSSR. Seriya 8 (Palaeobotanika)

Trop. Ecol.
Tropical Ecology

Tsuchi Biseibutsu
Tsuchi to Biseibutsu

Turang Tongbao
Turang Tongbao

U. S. Dep. Agric. Bull.
United States. Department of Agriculture Bulletin

Ultramicroscopy
Ultramicroscopy

Univ. Kansas Paleontol. Contrib. Pap.
University of Kansas Paleontological Contributions. Papers

Verh. Geol. Mijnbouw Genoot. Ned. Kolon. Geol.
Verhandelingen van het Geologisch-Mijnbouw- Kundig Genootschap voor Nederland en Kolonien. Geologische Serie

Vestn. Ustred. Ustavu Geol.
Vestnik Ustredniho Ustavu Geologickeho

Vestsi Akad. Navuk BSSR Ser. Biyal. Navuk
Vestsi Akademii Navuk Belaruskai SSR, Seryya Biyalagichnykh Navuk

Victorian Nat.
Victorian Naturalist

Wallaceana
Wallaceana

Webbia
Webbia

Weeds
Weeds

Wiss. Z. Wilhelm-Pieck-Univ. Rostock Math.-Naturwiss. R.
Wissenschaftliche Zeitschrift der Wilhelm-Pieck-Universitaet Rostock Mathematisch- Naturwissenschaftliche Reihe

Wrightia
Wrightia

Z. Bot.
Zeitschrift fuer Botanik

Zhegiang Nongye Kexue
Zhegiang Nongye Kexue

Zhongguo Nongye Kexue
Zhongguo Nongye Kexue

GENERAL

1. ABDULKADIR, S. Sekilas uraian mengenai Azolla. [A short note on Azolla.] Bull. Kebun Raya 2(5):171-176, ill. Aug. 1976.
English summary.

2. APP, A., BOULDIN, D. R., and WATANABE, I. Constraints to biological nitrogen fixation in soils of the tropics. Paper presented at the Symposium on Priorities for Alleviating Soil Related Constraints to Food Production in the Tropics, IRRI, Los Baños, Laguna, 1979. 38 p. Ref.

3. AZOLLACEAE. In Willis, J. C. A Dictionary of the flowering plants and ferns, 8th ed., p. 114. Cambridge: Cambridge Univ. Pr., 1973.

4. BALDENSPERGER, J. La nutrition azotee du riz a partir de l'azote atmospherique: actions de recherches et applications pratiques. [The nitrogen nutrition of rice starting with atmospheric nitrogen: researches and practical applications.] Bull. Inf. Rizicult. Fr. 176:20-21. Jan./Mar. 1979.

5. BECKING, J. H. Ecological-hydrobiological study on irrigated rice fields in relation to the fixation of atmospheric nitrogen. Report presented to the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), The Hague, 1972. 42 p.

6. BECKING, J. H. Symbiosen: Stickstoff Bindung. [Symbiosis: Nitrogen association.] Fortschr. Bot. 34:459-467. 1972.

7. BELL, P. and WOODCOCK, C. The procaryotic algae. In Their The Diversity of green plants, 2d ed., p. 17-23, ill. London: Edward Arnold, 1971.

8. BERINGER, J. E. and JOHNSTON, A. W. B. Critique - on "control of biological nitrogen fixation": genetic derepression of nitrogen-fixation genes-- relevance to increasing world food production. In Nitrogen in the environment, ed. by D. R. Nielsen and J. G. MacDonald, p. 417-428. Ref. New York· Academic Pr., 1978.

9. BRILL, W. J. Nitrogen fixation: basic to applied. Am. Sci. 67(4):458-466, ill. Ref. July/Aug. 1979.

10. BURRIS, R. H. Advances in biological nitrogen fixation. In Developments in industrial microbiology: proc. of the 34th General Meeting of the Society for Industrial Microbiology, East Lansing, Michigan, 1977, p. 1-13, ill. Ref. Washington, D. C.: Society for Industrial Microbiology, 1978.

11. COMMONWEALTH AGRICULTURAL BUREAUX. Azolla abstracts from CAB [Commonwealth Agricultural Bureaux] journals 1952-1978. Slough, 1979. 4 p.

12. FJERDINGSTAD, E. Anabaena variabilis status azollae. Arch. Hydrobiol. 49(4 suppl.):377-381. 1976.

13. FUJIWARA, A., TSUBOI, I., and YOSHIDA, F. Fixation of free nitrogen in non-leguminous plants. I. Azolla pinnata. (Japanese) Nogaku 1:361-363. 1947.

14. GRIFFITH, W. Azolla and Salvinia. Calcutta J. Nat. Hist. 5:227-273. 1845.

15. HARDY, R. W. F. and HAVELKA, U. D. Nitrogen fixation research: a key to world food? Science 188(4188):633-643, ill. Ref. May 1975.

16. HAY, A. Vietnam calls its scientists to arms. Nature 273(5658):94-95, ill. May 1978.

17. HOLTTUM, R. E. Water plants. In His plant life in Malaya, p. 205-218, ill. London: Longmans, Green & Co., 1954.

18. HUANG, C. Y. Theoretical and experimental aspects of nitrogen fixation in higher plants. (Chinese) In Genetic engineering and nitrogen fixation, p. 1-29, ill. Ref. Taipei: Academia Sinica, 1978.
Includes Azolla-Nostoc, Anabaena as associative N_2 fixer.

19. INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE. Azolla africana-Anabaena azollae symbiosis. Its Annu. Rep. 1975:23. 1976.

20. INTERNATIONAL RICE RESEARCH INSTITUTE. Nitrogen fixation by Azolla-Anabaena association. Its Annu. Rep. 1976: 232-233. 1977.

21. INTERNATIONAL RICE RESEARCH INSTITUTE. Soils and rice symposium lists research priorities for nitrogen. IRRI [Int. Rice Res. Inst.] Rep. 4:1-2, ill. Dec. 1978.

22. INTERNATIONAL RICE RESEARCH INSTITUTE. DEPT. OF SOIL MICROBIOLOGY. Roles of soil microbes: summary statement. Paper IRRI Res. Program Rev. 1979(22). 5 [7] p.

23. JARA, M. B. Rice savants 'discover' blue-green algae. DataFil 5(23):4-5, ill. Dec. 1978.

24. KACHROO, P. Introduction. In His Handbook of fern gardening, p. 1-2. New Delhi: Indian Council of Agricultural Research, 1968.

25. KACHROO, P. Some common cultivated ferns. In His Handbook of fern gardening, p. 12-30, ill. New Delhi: Indian Council of Agricultural Research, 1968.

26. LE VAN LIEM. Beo hoa dau. [Azolla.] Hanoi: Nha Xuat Ban Nong Thon, 1962. 75 p.

27. MEYEN, F. J. F. Beitrage zur Kenntnis der Azollen. [Contribution to the information on Azolla.] Nova Acta Leopold. 18:505-524. 1836.

28. MITCHELL, D. S. Floating or generally non-rooted aquatic weeds. In His Aquatic vegetation and its use and control, p. 38-39. Paris: UNESCO, 1974.

29. MOORE, A. W. Azolla: Biology and agronomic significance. Bot. Rev. 35:17-34. Ref. 1969.

30. MOORE, A. W., FRENCH, J. E., and DIXON, H. M. Bibliography of Azolla. Paper Workshop on Nitrogen Cycling in South East Asian Wet Monsoonal Ecosystems, University of Chiang Mai, 1979. 89 p.

31. OES, A. Ueber die Assimilation des freien Stickstoffs durch Azolla. [The assimilation of free nitrogen through Azolla.] Z. Bot. 5:145-163. 1913.

32. OOSTSTROOM, S. J. van. Azollaceae. In Flora Neerlandica, I, 1 Pteridophyta, Gymnospermae: 79-80. 1948.

33. POSTGATE, J. Mycorrhizal and algal associations. In His Biological nitrogen fixation, p. 40-42, ill. Watford: Merrow Publ., 1972.

34. POSTGATE, J. R. and HILL, S. Nitrogen fixation. In Microbial ecology: a conceptual approach; edited by J. M. Lynch and N. J. Poole, p. 191-213, ill. Ref. New York: Wiley, 1979.

35. SCOWCROFT, W. R. Aspects of Chinese science - genetics and plant improvement. Search 10(9):300-304, ill. Ref. Sept. 1979.

36. SEGAL, S. Principles on structure, zonation and succession of aquatic macrophytes. Hidrobiologia 12:89-95. 1971.

37. SHAPARENKO, K. K. History of the Salviniaceae. (Russian) Tr. Bot. Inst. Akad. Nauk SSSR Ser. 8(Palaeobot.)2: 7-44. 1956.

38. STRASBURGER, E. Ueber Azolla. [Azolla.] Jena: Verlag Hermann Davis, 1873. 86 p. ill.

39. SUVATABANDHU, K. Azolla pinnata R. Br. In His Weeds in paddy field, p. 20-21, ill. Bangkok: Dep. of Agriculture, 1950 (Tech. Bull. Dep. Agric. Thailand 4).

40. VO MINH KHA and TRAN QUANG THUYET. Beo hoa dau. [Azolla.] Hanoi: Nha Xuat Ban Nong Thon, 1970. 174, [2] p., ill.

41. WITTWER, S. H. Agriculture for the 21st century. Coromandel Lecture, New Delhi, 1979. 57 p. Ref.

42. WITTWER, S. H. Nitrogen fixation and agricultural productivity. BioScience 28(9):55. Sept. 1978.

43. YOSHIDA, T. Symbiotic nitrogen-fixation in non-leguminous plants. (Japanese) Biol. Sci. (Tokyo) 31(1):1-8, ill. Ref. Feb. 1979.
Anabaena azollae.

ANATOMY, MORPHOLOGY, CYTOLOGY, HISTOLOGY

44. AGRICULTURAL INSTITUTE OF WENZHOU. Observations on Azolla's morphology and differentiation of sporocarps, germination of zygotes and nutritional properties of young seedlings. (Chinese) Zhejiang Nongye Kexue 4:13-18, ill. 1979.

45. BAI, K. Z. and YU, S. L. The reproductive property of Azolla imbricata (Roxb.) Nakai in Tancheng county of Shandong province. (Chinese) Kexue Tongbao 24(4):191-192, ill. Feb. 1979.
Wild Azolla imbricata produces sporocarps which can be used for propagation.

46. BELL, P. and WOODCOCK, C. Filicales. In Their The Diversity of green plants, 2d ed., p. 203-227, ill. London: Edward Arnold, 1971.

47. BOLD, H. C. Division Pterophyta - III. In His Morphology of plants, 2d ed., p. 360-377, ill. New York: Harper & Row, 1967.

48. BONGERS, J. M. The formation of threads during the development of the periplasmodium to the perispore in the megasporocarp of Azolla filiculoides. Ultramicroscopy 2(1):121. 1976.

49. BONNET, A. L. M. Contribution a l'etude des Hydropteridiales. III. Recherches sur Azolla filiculoides Lam. [Contribution to the study of the Hydropteridae. III. Researches on Azolla filiculoides Lam.] Rev. Cytol. Biol. Veg. 18(1):1-86, ill. 1957.

50. BOWER, F. O. Heterospory. In His The Ferns (Filicales) treated comparatively with a view to their natural classification, v. 1, p. 267-272, ill. Ref. Cambridge: Cambridge Univ. Pr., 1928.

51. BOWER, F. O. Salvinia Adan. and Azolla Lam. In His The Ferns (Filicales) treated comparatively with a view to their natural classification, v. 3, p. 260-263, ill. Cambridge: Cambridge Univ. Pr., 1928.

52. CAMPBELL, D. H. On the development of Azolla filiculoides Lam. Ann. Bot. 7(26):155-187, ill. June 1893.

52a. CHAUVEAUD, M. G. Sur la structure de la racine de l'Azolla. [On the structure of the root of Azolla.] Bull. Mus. Hist. Nat. Paris 7:366-372. 1901.

53. CHAUVEAUD, M. G. Sur une interpretation recente de la structure attributee a la racine de l'Azolla filiculoides. [On a recent interpretation about the structure attributed to the root of Azolla filiculoides.] Bull. Soc. Bot. Fr. 58:79-82, ill. 1911.

54. CLOWES, F. A. L. Roots with apical cells. In His Apical meristems, p. 115-119, ill. Oxford: Blackwell, 1961.

55. CUTTER, E. G. Transfer cells. In Her Plant anatomy, I: Cells and tissues, 2d ed., p. 195-213, ill. Reading, Mass.: Addison-Wesley, 1978.

56. DEMALSY, P. Etudes sur les Hydropteridiales. III. Le sporophyte d'Azolla nilotica. [Studies on the Hydropteridae. III. The sporophyte of Azolla nilotica.] Cellule 56(1):5-60, ill. 1953.

57. DEMALSY, P. Etudes sur les Hydropteridiales. IV. Nouvelles recherches sur le sporophyte d'Azolla. [Studies on the Hydropteridae. IV. New investigations on the sporophyte of Azolla.] Cellule 59(2):233-268, ill. 1958.

58. DEMALSY, P. and CALLEBAUT, M. Plain water as a rinsing agent preferable to sulfurous acid after the Feulgen nucleal reaction. Stain Technol. 42(3):133-136. Ref. May 1967.
Study of Azolla nilotica.

59. DUBOIS, M. F. W. Azolla filiculoides Lam. en Azolla caroliniana Willd. Fenologische en vergelijkend-morfologische waarnemingen. [Azolla filiculoides Lam. and Azolla caroliniana Willd. Phenological and comparative morphological observations.] Amsterdam: Hugo de Vries Lab., Univ. of Amsterdam, 1967.

60. DUCKETT, J. G., and others. A cytological analysis of Nostoc-Bryophyte relationship. New Phytol. 79(2):349-362, ill. Ref. Sept. 1977.
A. K. S. K. Prasad, D. A. Davies, and S. Walker, joint authors.
Azolla gunnera.

61. DUCKETT, J. G. and PRASAD, A. K. S. K. Ultrastructural studies on the blue-green algae associated with the bryophytes anthoceros and Blasia and the heterosporous fern Azolla. Br. Phycol. J. 10(3):310. 1975.

62. DUCKETT, J. G., TOTH, R., and SONI, S. L. An ultrastructural study of the Azolla, Anabaena azollae relationship. New Phytol. 75(1):111-118, ill. Ref. July 1975.

63. DUNCAN, R. E. The cytology of sporangium development in Azolla filiculoides. Bull. Torrey Bot. Club 67(5):391-412, ill. Ref. May 1940.

64. EAMES, A. J. Salviniaceae. Water ferns. In His Morphology of vascular plants: lower groups, p. 231-259, ill. Ref. New York: McGraw-Hill, 1936.

65. ERDTMAN, G. Azolla. In His Pollen and spore morphology/ plant taxonomy, v. 2, p. 50, ill. New York: Hafner Publ., 1957 (repr. 1972); v.4, p. 31, 215, ill. 1971.

66. ESAU, K. Apical meristems. In His Plant anatomy, 2d ed., p. 89-130, ill. Ref. New York: Wiley, 1965.

67. ESAU, K. Vegetative shoot apex. In His Plant anatomy, p. 99-103, ill. New York: Wiley, 1953.

68. FAHN, A. Shoot apex of Pteridophytes. In His Plant anatomy, p. 52, ill. Oxford: Pergamon Pr., 1967.

69. FOWLER, K. An escape mechanism for spermatozoids in Azolla massulae. Am. Fern J. 65(1):7-10, ill. Mar. 1975.

70. GODFREY, R. K., REINERT, G. W., and HOUK, R. D. Observations on microscopic material of Azolla caroliniana. Am. Fern J. 51(2):89-92, ill. Apr./June 1961.

71. GRABANDT, R. A. J. Morfologie en ontwikkeling van Azolla filiculoides Lam. [Morphology and development of Azolla filiculoides Lam.] Amsterdam: Hugo de Vries Lab., Univ. of Amsterdam, 1967.

72. GRILLI, M. Infrastrutture di Anabaena azollae vivente nelle foglioline di Azolla caroliniana. [Internal structure of Anabaena azollae living on the leaves of Azolla caroliniana, Ann. Microbiol. Enzimol. 14(1/3):69-90. ill. Ref. 1964.
English summary.

73. GUNNING, B. E. S. Age-related and origin-related control of the numbers of plasmodesmata in cell walls of developing Azolla roots. Planta 143(2):181-190, ill. Ref. 1978.

74. GUNNING, B. E. S., HARDHAM, A. R., and HUGHES, J. E. Evidence for initiation of microtubules in discrete regions of the cell cortex in Azolla root-tip cells, and an hypothesis on the development of cortical arrays of microtubules. Planta 143(2):161-179, ill. Ref. 1978.

75. GUNNING, B. E. S., HUGHES, J. E., and HARDHAM, A. R. Formative and proliferative cell divisions, cell differentiation, and developmental changes in the meristem of Azolla roots. Planta 143(2):121-144, ill. Ref. 1978.

76. GUNNING, B. E. S., HARDHAM, A. R., and HUGHES, J. E. Morphogenesis and microtubules in Azolla root apices. (Abstract) J. Cell Biol. 70(2 pt. 2):56A. Aug. 1976.
Paper presented at the 21st International Congress on Cell Biology, Boston, Mass., 1976.

77. GUNNING, B. E. S. and ROBARDS, A. W. Plasmodesmata and symplastic transport. In Transport and transfer processes in plants, p. 15-41, ill. Ref. New York: Academic Pr., 1976.

78. GUNNING, B. E. S., HARDHAM, A. R., and HUGHES, J. E. Pre-prophase bands of microtubules in all categories of formative and proliferative cell division in Azolla roots. Planta 143(2):145-160, ill. Ref. 1978.

79. HALL, J. W. and BERGAD, R. D. A critical study of three Cretaceous Salviniaceous megaspores. Micropaleontology 17(3):345-356, ill. Ref. July 1971.

80. HALL, J. W. A new section of Azolla. Taxon 19(2):302-303. Apr. 1970.

81. HALL, J. W. A reappraisal of the megaspore of two Eocene species of Azolla. J. Paleontology 43:528-531. 1969.

82. HANNIG, E. Ueber die Bedeutung der Periplasmodien. II. Die Bildung der Massulae von Azolla. [The importance of the periplasma. II. The structure of Azolla massulae.] Flora 102:243-278. 1911.

83. HARDHAM, A. R. and GUNNING, B. E. S. The length and disposition of cortical microtubules in plant cells, fixed in glutaraldehyde-osmium tetroxide. Planta 134(2):201-203, ill. Ref. 1977.
Azolla pinnata.

84. HARDHAM, A. R. and GUNNING, B. E. S. Structure of cortical microtubule arrays in plant cells. J. Cell Biol. 77 (1):14-34, ill. Ref. Apr. 1978.
Azolla pinnata.

85. HAUPT, A. W. Salviniaceae. In His Plant morphology, p. 299-303, ill. New York: McGraw-Hill, 1953.

86. JONES, M. G. K. The origin and development of plasmodesmata. In Gunning, B. E. S. and Robards, A. W., eds. Intercellular communication in plants: studies on plasmodesmata, p. 81-105, ill. Berlin: Springer-Verlag, 1976.

87. KACHROO, P. Structure and life history of ferns. In His Handbook of fern gardening, p. 3-5, ill. New Delhi: Indian Council of Agricultural Research, 1968.

88. KAUL, R. B. Anatomical observations on floating leaves. Aquat. Bot. 2(3):215-234, ill. Ref. Sept. 1976.

89. KAWAMATU, S. Electron microscope observations on blue-green algae in the leaf of Azolla imbricata Nakai. Cytologia 30(1):75-79, ill. Ref. Mar. 1965.

90. KAWAMATU, S. Electron microscope observations on the leaf of Azolla imbricata Nakai. Cytologia 30(1):80-87, ill. Ref. Mar. 1965.

91. KAWAMATU, S. Electron microscope observations on the root hair cell of Azolla imbricata Nakai. Cytologia 28(1): 12-20, ill. Ref. Mar. 1963.

92. KAWAMATU, S. Electronmicrographs on the plastids in the root of Azolla imbricata. Experientia 17(7):313-315, ill. 1961.
German summary.

93. KAWAMATU, S. On the granules in the root hair of Azolla imbricata Nakai. (Japanese) Bull. Aichi Gakugai Univ. 9:105-116, ill. Ref. 1960.
English summary.

93a. KEMPF, E. K. Elektronenmikroskopie der Megasporen von Azolla tegeliensis aus dem Altpleistozaen der Niederlande. [Electron microscopy of the megaspores of Azolla tegeliensis in the ancient Pleistocene of the Netherlands.] Palaeontographica 128B:167-179. 1969.

94. KEMPF, E. K. Elektronenmikroskopie der Sporodermis von Kanozoischen Megasporen der Wasserfarne-Gattung Azolla. [Electron microscopy of the sporoderm on the Cenozoic megaspores of the water fern Azolla.] Palaeontol. Z. 43 (1/2):95-108, ill. 1969.

95. KONAR, R. N. and KAPOOR, R. K. Anatomical studies on Azolla pinnata. Phytomorphology 22(3/4):211-223, ill. Ref. Sept./Dec. 1972 (pub. 1974).

96. KONAR, R. N. and KAPOOR, R. K. Embryology of Azolla pinnata. Phytomorphology 24(3/4):228-261, ill. Ref. Sept./ Dec. 1974(pub. 1975).

97. LANG, N. J. Electron microscopic study of heterocyst development in Anabaena azollae Strasburger. J. Phycol. 1(3):127-134, ill. Ref. 1965.

98. LEAVITT, R. G. The root-hairs, cap, and sheath of azolla. Bot. Gaz. 34(6):414-419, ill. 1902.

99. LIMBERGER, A. Zur Frage der Symbiose von Anabaena mit Azolla. II. Mitteilung. [On the issue of the symbiosis of Anabaena with Azolla. II. Report.] Sber. Akad. Wiss. Wien Math. Naturwiss. Kl. Abt. I 134:1-5. 1925.

100. LOYAL, D. S. Cytology of two species of Salviniaceae. Curr. Sci. 27(9):357-358, ill. Ref. Sept. 1958.

101. LOYAL, D. S. The leaf architecture and vasculature in some aquatic ferns. In Recent advances in botany, p. 127-144, ill. Ref. Delhi: Bishen Singh Mahendra Pal Singh, 1976.

102. LUMPKIN, T. A. Azolla: morphology of the symbiosis. Paper presented at the IRRI Saturday Seminar, Los Baños, Laguna, Sept. 3, 1977. 6, [3] p. ill.

103. MARTIN, A. R. H. Some structures in Azolla megaspores, and an anomalous form. Rev. Palaeobot. Palynol. 21(2): 141-169. Ref. Feb. 1976.

104. MICKEL, J. T. Water ferns. In His How to know the ferns and fern allies, p. 13, ill. Dubuque, Iowa: W. C. Brown, c1979.

105. NITAYANGKURA, S. Cell cycle studies of the apical cell and its derivatives in the root of Azolla filiculoides Lam. Davis, 1978. 107 p. ill. Ref.
Thesis (Ph. D.)--University of California.
Abstract in Diss. Abstr. Int. B 39(3):1108. Sept. 1978.

106. PETERS, G. A., and others. The Azolla-Anabaena Azollae relationship. VI. Morphological aspects of the association. New Phytol. 80(3):583-593, ill. Ref. May 1978.
R. E. Toia, Jr., D. Raveed, and N. J. Levine, joint authors.

107. PFEIFFER, W. M. Differentiation of sporocarps in Azolla. Bot. Gaz. 44(6):445-454, ill. Ref. Dec. 1907.

108. PIETERSE, A. H., LANGE, L. de, and VAN VLIET, J. P. A comparative study of Azolla in the Netherlands. Acta Bot. Neerl. 26(6):433-449, ill. Ref. Dec. 1977.

109. QUEVA, C. L'Azolla filiculoides Lam.: etude anatomique. [Azolla filiculoides Lam.: anatomical study.] Bull. Soc. Hist. Nat. Autun 23:233-256. 1910.

110. RAO, H. S. The structure and life history of Azolla pinnata R. Brown with remarks on the fossil history of the Hydropteridae. Proc. Indian Acad. Sci. Sect. B 2(2):175-200, ill. Ref. Aug. 1935.

111. ROBARDS, A. W. Plasmodesmata in higher plants. In Gunning, B. E. S. and Robards, A. W., eds. Intercellular communication in plants: studies on plasmodesmata, p. 15-57, ill. Berlin: Springer-Verlag, 1976.

112. ROBARDS, A. W. and CLARKSON, D. T. The role of plasmodesmata in the transport of water and nutrients across roots. In Gunning, B. E. S. and Robards, A. W., eds. Intercellular communication in plants: studies on plasmodesmata, p. 181-201, ill. Berlin: Springer-Verlag, 1976.

113. RODGERS, G. A. and STEWARD, W. D. P. The Cyanophyte-Hepatic symbiosis. I. Morphology and physiology. New Phytol. 78(2):441-458, ill. Ref. Mar. 1977.

114. SCHLOEMER, A. Ein verwilderter Wasserfarn, Azolla filiculoides. [A wild water fern, Azolla filiculoides.] Natur Volk 83(4):131-134, ill. Apr. 1953.

115. SCULTHORPE, C. D. Certain aspects of the reproduction of aquatic Pteridophytes. In His The Biology of vascular plants, p. 255-267, ill. New York: St. Martin's Pr., 1967.

116. SCULTHORPE, C. D. The morphology of Azolla. In His The Biology of aquatic vascular plants, p. 194-196, ill. New York: St. Martin's Pr., 1967.

117. SCULTHORPE, C. D. Reduction in Azolla and Salvinia. In His The Biology of aquatic vascular plants, p. 192-194, ill. New York: St. Martin's Pr., 1967.

118. SEGAL, S. Structures and waterplants. (Abstract) Gesselschaftsmorphologie p. 157-171. 1970.

119. SHEN, E. Y. F. Anabaena azollae and its host Azolla pinnata. Taiwania 7:1-7, ill. Ref. Dec. 1960.

120. SMITH, G. M. Salviniales. In His Cryptogamic botany, v. 2, p. 371-386, ill. Ref. New York: McGraw-Hill, 1955.

121. SUD, S. R. A preliminary note on the structure of Azolla pinnata. J. Indian Bot. Soc. 13:189-196. 1934.

122. SWEET, A. R. and HILLS, L. V. Morphology speciation evolution and stratigraphic value of Azolla. In Geoscience and man: proceedings of the 3d Annual Meeting of the American Association of Stratigraphic Palynologists, Toronto, 1970, p. 135. Baton Rouge, La.: School of Geoscience, Louisiana State University, 1972.

123. SWEET, A. R. and HILLS, L. V. A study of Azolla pinnata R. Brown. Am. Fern J. 61(1):1-13, ill. map. Ref. Jan./Mar. 1971.

124. TUR, N. M. Nuevos casos de epifitismo acuatico. [New cases of aquatic epiphytes.] Bol. Soc. Argent. Bot. 13(4): 243-249, ill. Ref. July 1971.
English summary.

124a. WARDLAW, C. W. Embryogenesis in Leptosporangiate ferns. In His Embryogenesis in plants, p. 142-170, ill. London: Methuen, 1955.

125. WARDLAW, C. W. The histological organization of root apices. In His Morphogenesis in plants, p.246-251, ill. London: Methuen, 1968.

126. YU, L. H. Preliminary observations on sexual reproduction of Azolla. (Chinese) Zhejiang Nongye Kexue 4:19-22. 1979.

PHYSIOLOGY AND BIOCHEMISTRY

127. AHMAD, G. D. Effect of light intensity and temperature on the growth of Azolla filiculoides. J. Indian Bot. Soc. 20:213-226, ill. Ref. 1941.

128. AHMAD, G. D. The growth of Azolla filiculoides in mineral solution without addition of "auximone". J. Indian Bot. Soc. 20(5/6):285-292. Ref. Oct. 1941.

129. AHMAD, G. D. Interrelationship between the compensation point, temperature coefficient and growth of Azolla filiculoides. J. Indian Bot. Soc. 22(1):101-104. Jan. 1943.

130. ALLEN, M. B. Photosynthetic nitrogen fixation by blue-green algae. Sci. Mo. 83:100-106, ill. Ref. 1956.

131. ALLISON, F. E., HOOVER, S. R., and MORRIS, H. J. Physiological studies with the nitrogen-fixing alga, Nostoc muscorum. Bot. Gaz. 98(3):433-463, ill. Ref. Mar. 1937.

132. ASHTON, P. J. and WALMSLEY, R. D. The aquatic fern Azolla and its Anabaena symbiont. Endeavour 35(124):39-43, ill. Ref. Jan. 1976.

133. ASHTON, P. J. The effect of some environmental factors on the growth of Azolla filiculoides Lam. Orange River Progr. Rep. 1974:123-138, ill. map. Ref.

134. ASHTON, P. J. Factors affecting the growth and development of Azolla filiculoides Lam. In Proc. 2d National Weeds Conference of South Africa, Stellenbosch, 1977, p. 249-268, ill. Ref. Cape Town: A. A. Balkema, 1977?
Sporocarp formation was observed only in established mats and was regulated by photoperiod, light intensity, temperature, pH, and nitrogen supply.

135. BAI, K. Z., and others. Isolation and pure culture of alga-free Azolla and Anabaena Azollae. (Chinese) Kexue Tongbao 14:664-666, ill. Ref. 1979.
S. L. Yu, W. L. Chen, S. Y. Yang, and C. Tsui, joint authors.
English summary.

136. BAI, K. Z., YU, S. L., and SHI, D. J. A simple method for the in situ nitrogen fixation measurement of Azolla imbricata. (Chinese) Acta Bot. Sinica 21(2):197-198, ill. June 1979.

137. BALANDREAU, J. P., and others. Asymbiotic N_2 fixation in paddy soils. In Proc. 1st International Symposium on Nitrogen Fixation, Pullman, Wash., 1974, v. 2, p. 611-628, ill. Ref. Washington, D. C.: Washington State University Pr., 1976.
G. Rinaudo, M. M. Oumarov, and Y. R. Dommergues, joint authors.

138. BARON, W. M. M. Nitrogen-fixing organisms. In His Organization in plants, 3d ed., p. 107-110, ill. New York: Wiley, 1979.

139. BECKING, J. H. Contribution of plant-algal associations. In Proc. 1st International Symposium on Nitrogen Fixation, Pullman, Wash., 1974, v. 2, p. 556-580, ill. Ref. Washington, D. C.: Washington State University Pr., 1976.

140. BECKING, J. H. Ecology and physiological adaptations of Anabaena in the Azolla-Anabaena azollae symbiosis. In Environmental role of nitrogen-fixing blue-green algae and asymbiotic bacteria, p. 266-281, ill. Ref. Stockholm: Swedish Natural Science Research Council, 1978. (Ecological Bulletins 26)

141. BECKING, J. H. Environmental requirements of Azolla for use in tropical rice production. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 31, [10] p. ill. Ref.

142. BECKING, J. H. Nitrogen fixation in some natural ecosystems in Indonesia. In Nutman, P. S., ed. Symbiotic nitrogen fixation in plants, p. 539-550, ill. Ref. Cambridge: Cambridge Univ. Pr., 1976.

143. BECKING, J. H. Symbiotic nitrogen fixation by non-legumes. In Proc. 4th International Conference on Global Impacts of Applied Microbiology, Sao Paulo, Brazil, 1973, pt. 1, p. 421-445. Sao Paulo: Soc. Bras. Microbiol., 1977.

144. BENEDICT, R. C. The mosquito fern (Azolla). Am. Fern J. 13:48-52. 1923.

145. BHAT, P. K., and others. Studies on interspecific association of aquatic plants. Biologia (Lahore) 23(2): 117-124. 1977.
J. C. Dagar, V. P. Singh, and L. P. Mall, joint authors.
Azolla pinnata.

146. BOLD, H. C. Economic aspects of algae. In His Morphology of plants, 2d ed., p. 107-108. New York: Harper & Row, 1967.

147. BOND, G. The incidence and importance of biological fixation of nitrogen. Advance. Sci. 15:382-386. 1959.

148. BOND, G. Some biological aspects of nitrogen fixation. In Hewitt, E. J. and Cutting, C. V., eds. Recent aspects of nitrogen metabolism in plants: proc. of a symposium held at Long Ashton Research Station, Univ. of Bristol, 1967, p. 15-25, ill. Ref. London: Academic Pr., 1968.

149. BORTELS, H. Uber die Bedeutung des Molybdans fur stickstoffbindende Nostocaceen. [On the significance of molybdenum for nitrogen-fixing Nostocaceae.] Arch. Mikrobiol. 11:155-186, ill. Ref. 1940.

150. BOTTARI, F., and others. Alipathic and triterpenoid hydrocarbons from ferns. Phytochemistry 11(8):2519-2523, ill. Ref. Aug. 1972.
A. Marsili, I. Morelli, and M. Pacchiani, joint authors.

151. BOTTOMLEY, W. B. The effect of organic matter on the growth of various water plants in culture solution. Ann. Bot. 34(135):353-365, ill. July 1920.
Azolla filiculoides.

152. BROTONEGRO, S. and ABDULKADIR, S. Growth and nitrogen-fixing activity of Azolla pinnata. Ann. Bogor. 6(2): 69-77, ill. Ref. Feb. 1976.
Indonesian summary.

153. BROTONEGRO, S. and ABDULKADIR, S. Pertumbuhan dan penambatan Zat Lemas oleh Paku Air Tawar Azolla pinnata. [Growth and nitrogen fixation by Paku Air Tawar (Azolla pinnata).] In Proc. 2, Seminar Biologi IV dan Kongres Biologi II di Yogyakarta, 1977, p. 57-68.

154. BURNS, R. C. and HARDY, R. W. F. Description and classification of diazotrophs. In Their Nitrogen fixation in bacteria and higher plants, p. 14-38, ill. New York: Springer-Verlag, 1975.

155. BURRIS, R. H. A synthesis paper on nonleguminous N_2-fixing systems. In Proc. International Symposium on Nitrogen Fixation, 2d, Salamanca, 1976, p. 487-511. Ref. London: Academic Pr., 1977.
Azolla-Anabaena azollae association.

156. CALVERT, H. E. and PETERS, G. A. New morphological observations on the Azolla caroliniana-Anabaena symbiosis relevant to physiological interaction. (Abstract) Plant Physiol. 63(5 suppl.):113. May 1979.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Ohio State University, 1979.

157. CHAPMAN, V. J. and CHAPMAN, D. J. Symbiosis. In Their The Algae, 2d ed., p. 385-387. Ref. London: Macmillan, 1973.

158. CHENG, J. F., XU, S. X., and WANG, S. Z. The sporocarps and cultured young sporophytes of Azolla imbricata. (Chinese) Acta Bot. Sinica 20(1):54-58, ill. Ref. 1978.
English summary.

159. COHN, J. and RENLUND, R. N. Notes on Azolla caroliniana. Am. Fern J. 43(1):7-11. Jan./Mar. 1953.

160. DELWICHE, C. C. Nitrogen fixation. Science 151(3717):1565-1566. Mar. 1966.

161. DOBEREINER, J. Potential for nitrogen fixation in tropical legumes and grasses. In Limitations and potentials for biological nitrogen fixation in the tropics; proc. of the International Latin American Symposium, 15th, Brasilia, 1977, p. 13-24. Ref. New York: Plenum, 1978.

162. DUSEK, W. A. and BONDE, E. K. Effect of gibberellic acid, indoleacetic acid, and maleic hydrazide on Azolla mexicana. Phyton 22(1):51-54, ill. Ref. 1965.

163. ESPINAS, C R., and others. Environmental conditions affecting Azolla growth. Paper presented at the IRRI Saturday Seminar, Los Baños, Laguna, June 16, 1979. 9, [12] p. ill. Ref.
N. S. Berja, D. C. del Rosario, and I. Watanabe, joint authors.
Also presented at the 10th Meeting of the Crop Science Society of the Philippines, Manila, 1979.

164. FLINT, L. H. Behavior of Azolla caroliniana Willd. under ultra-violet radiation. Proc. La. Acad. Sci. 6:43-45. 1941 (pub. Feb 1942).

165. FOGG, G. E., and others Nitrogen metabolism. In Their The Blue-green algae, p. 180-213, ill. London: Academic Pr., 1973
W. D. P. Stewart, P. Fay, and A. E. Walsby, joint authors.

166. FOGG, G. E., and others. Symbiosis. In Their The Blue-green algae, p. 343-357, ill. London: Academic Pr., 1973.
W. D. P. Stewart, P. Fay, and A. E. Walsby, joint authors.

167. GIBSON, A. H., SCOWCROFT, W. R., and PAGAN, J. D. Nitrogen fixation in plants: an expanding horizon? In Proc. International Symposium on Nitrogen Fixation, 2d, Salamanca, 1976, p. 387-417, ill. Ref. London: Academic Pr., 1977.

168. GOPAL, B. Contribution of Azolla pinnata R. Br. to the productivity of temporary ponds at Varanasi. Trop. Ecol. 8(1/2):126-130, ill. Ref. Dec. 1967.

169. GREGOR, M. J. F. Symbiosis and epiphytism. In Verdoorn, F. R., ed. Manual of pteridology, p. 156-158. The Hague: Nijhoff, 1938.

170. HALLER, W. T., SUTTON, D. L., and BARLOWE, W. G. Effects of salinity on growth of several aquatic macrophytes. Ecology 55(4):891-894. Ref. Summer 1974.

171. HILL, D. J. The pattern of development in the Azolla-Anabaena symbiosis. Planta 122(2):179-184, ill. Ref. 1975.

172. HILL, D. J. The role of Anabaena in the Azolla-Anabaena symbiosis. New Phytol. 78(3):611-616, ill. Ref. May 1977.

173. HOLST, R. W. Anthocyanins of Azolla. Am. Fern J. 67(4):99-100. Ref. Oct./Dec. 1977.

174. HOLST, R. W. and YOPP, J. H. Effect of light quantity, osmotic stress, temperature and pH on nitrogen fixation and nitrate reduction by the Azolla-Anabaena symbiosis. (Abstract) Plant Physiol. 57(5 suppl.):103. May 1976.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists with the American Institute of Biological Science, New Orleans, Louisiana, 1976.

175. HOLST, R. W. Studies on the growth and nitrogen metabolism of the Azolla mexicana-Anabaena azollae symbiosis. Carbondale, Ill., 1977. 163 p.
Thesis (Ph. D.)--Southern Illinois University.
Abstract in Diss. Abstr. Int. B 38(5):2012. Nov. 1977.

176. HOVE, G. van. Bacterial leaf symbiosis and nitrogen fixation. In Symbiotic nitrogen fixation in plants, ed. by P. S. Nutman, p. 551-560. Ref. Cambridge: Cambridge Univ. Pr., 1976.

177. HUNEKE, A: Beitraege zur Kenntnis der Symbiose zwischen Azolla und Anabaena. [Contributions to the information of symbioses between Azolla and Anabaena.] Beitr. Biol. Pflanzen 20(3):315-341, ill. 1933.

178. INAMDAR, J. A., PATEL, R. C., and BHATT, D. C. Structure and development of stomata in some leptosporangiate ferns. Ann. Bot. 35(141):643-651, ill. Ref. June 1971.

179. JOHANSEN, D. A. Nostocaceae. In His Plant microtechnique, p. 287-289, ill. New York: McGraw-Hill, 1940.

180. JOHANSEN, D. A. Salviniaceae. In His Plant microtechnique, p. 412-413. New York: McGraw-Hill, 1940.

181. JOHNSON, G. V., MAYEAUX, P. A., EVANS, H. J. A cobalt requirement for symbiotic growth of Azolla filiculoides in the absence of combined nitrogen. Plant Physiol. 41(5):852-855, ill. Ref. May 1966.

182. KEFELI, V. I. Primary mechanisms of integration and growth in plants. (Russian) Fiziol. Biokhim. Kul't. Rast. 10(1):18-25. 1978.

183. LAHDESMAKI, P. Free amino acids in the leaves of Salvinia natans and Azolla filiculoides grown in light and dark. Physiol. Plant. 21(5):1097-1103, ill. Ref. 1968.

184. LIN, L. P. Nitrogen fixation in microorganisms. (Chinese) In Genetic engineering and nitrogen fixation, p.30-41, ill. Ref. Taipei: Academia Sinica, 1978.

185. LIU, C. C., and others. Preliminary study on some physiological aspects of Azolla. (Chinese) Sci. Agric. Sinica 2:63-70. Ref. 1979.
C. Kang, T. G. Ren, and J. K. Lin, joint authors.
English summary.

186. MARX, J. L. Nitrogen fixation: prospects for genetic manipulation. Science 196(4290):638-641, ill. May 1977.

187. MAYBERRY, D. H. Fertilizer and fuel from tiny plants? Agric. Res. 25(1):7-9, ill. July 1976.

188. MAYNE, B. C., and others. Photosynthesis and acetylene reduction in the Azolla-Anabaena symbiosis. (Abstract) Plant Physiol. 61(4 suppl.):102. Apr. 1978.
T. B. Ray, G. A. Peters, and R. E. Toia, Jr., joint authors.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Blacksburg, Va., 1978.

189. MILLBANK, J. W. Associations with blue-green algae. In Quispel, A., ed. The biology of nitrogen fixation, p.238-264, ill. Ref. Amsterdam: North-Holland Publ., 1974.

190. MILLBANK, J. W. Lower plant associations. In A Treatise on dinitrogen fixation, Sect. III: Biology, p. 125-151, ill. Ref. New York: John Wiley & Sons, 1977.

191. NEWTON, J. W. and CAVINS, J. F. Altered nitrogenous pools induced by the Azolla-Anabaena azolla symbiosis. Plant Physiol. 58(6):798-799. Ref. Dec. 1976.

192. NEWTON, J. W., TYLER, D. D., and SLODKI, M. E. Effect of ultraviolet-B (280 to 320 nm) radiation on blue-green algae (cyanobacteria), possible biological indicators of stratospheric ozone depletion. Appl. Environ. Microbiol. 37(6):1137-1141, ill. Ref. June 1979.

193. NEWTON, J. W. and HERMAN, A. Isolation of a blue-green alga from Azolla. (Abstract) Plant Physiol. 59 (6 suppl.):94. June 1977.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists, Univ. of Wisconsin, 1977.

194. NEWTON, J. W. and HERMAN, A. I. Isolation of cyanobacteria from the aquatic fern, Azolla. Arch. Microbiol. 120(2):161-165, ill. Ref. Feb. 1979.

195. NGUYEN HUU THUOC, and others. The effect of 2-Pyridylhydroxymethanesulfonic acid (PHMSA) on glycolate oxidase activity and photosynthesis of soybean and Azolla pinnata R. Br. Photosynthetica 12(4):449- 451. Ref. 1978.
Le Van Quy, Dang Xuyen Nhu, and Huyn Ngoc Thach, joint authors.

196. NGUYEN HUU THUOC, and others. The growth and the photosynthesis of Azolla pinnata as affected by light and temperature conditions. (Vietnamese) Khoa Hoc Va Ky Thuat Nong Nghiep 2:91-95, ill. 1978.
Nhuyen Hoang Tinh, Dang Xuyen Nhu, Nguyen Quoc Thong, and Huynh Ngoc Thach, joint authors.
Russian summary.

197. NGUYEN NHU KHANH. The heat tolerance of Azolla pinnata as influenced by the trace elements Mn and Cu. (Vietnamese) Khoa Hoc Va Ky Thuat Nong Nghiep 8:582-584. 1978.
Russian summary.

198. NICKELL, L. G. Physiological studies with Azolla under aseptic conditions. I. Isolation and preliminary growth studies. Am. Fern J. 48:103-108. 1958.

199. NICKELL, L. G. Physiological studies with Azolla under aseptic conditions. II. Nutritional studies and the effects on growth. Phyton 17(1):49-54, ill. Ref. 1961.

200. ORNES, W. H. Effects of Cadmium (II) on Azolla caroliniana Willd., Salvinia Rotundifolia Willd., Spirodela Polyrhiza L. Schleid., Ceratophyllum Demersum L., and Myriophyllum Spicatum L. var Exalbescens (Fernald) Jepson grown in 10 or 50% Hoagland solution. Ames, 1978. 199 p.
Thesis (Ph. D.)--Iowa State University.
Abstract in Diss. Abstr. Int. B 39(10):4712. Apr. 1979.

201. PAI, K. C., and others. Cultivation of alga-free Azolla, isolation of Anabaena azollae and preliminary attempt at their association. In Proc. Symposium on Plant Tissue Culture, Peking, 1978, p. 455-458, ill. Ref. Peking: Science Press, 1978.
S. L. Yu, W. L. Chen, and S. Y. Yang, joint authors.

202. PETERS, G. A., and others. The Azolla-Anabaena association morphological and physiological studies. In Proc. SteenbockKettering International Symposium on Nitrogen Fixation, 1979. Baltimore: University Park Press, 1979. (In press)
B. C. Mayne, T. B. Ray, R. E. Toia, Jr., joint authors.

203. PETERS, G. A. and MAYNE, B. C. The Azolla, Anabaena azollae relationship. I. Initial characterization of the association. Plant Physiol. 53(6):813-819, ill. Ref. June 1974.

204. PETERS, G. A. and MAYNE, B. C. The Azolla, Anabaena azollae relationship. II. Localization of nitrogenase activity as assayed by acetylene reduction. Plant Physiol. 53(6):820-824, ill. Ref. June 1974.

205. PETERS, G. A. The Azolla-Anabaena azollae relationship. III. Studies on metabolic capabilities and a further characterization of the symbiont. Arch. Microbiol. 103(2):113-122, ill. Ref. 1975.

206. PETERS, G. A., EVANS, W. R., and TOIA, R. E., Jr. The Azolla-Anabaena azollae relationsjip. IV. Photosynthetically driven, nitrogenase-catalyzed H_2 production. Plant Physiol. 58(2):119-126, ill. Ref. Aug. 1976.

207. PETERS, G. A., TOIA, R. E., Jr., and LOUGH, S. M. Azolla-Anabaena azollae relationship. V. $^{15}N_2$ fixation, acetylene reduction, and H_2 production. Plant Physiol. 59(6):1021-1025, ill. Ref. June 1977.

208. PETERS, G. A. The Azolla-Anabaena azollae symbiosis. (Abstract) Plant Physiol. 56(2 suppl.):34. Aug. 1975.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists with the American Institute of Biological Science, Oregon State Univ., 1975.

209. PETERS, G. A. The Azolla-Anabaena azollae symbiosis. In Hollaender, A., ed. Genetic engineering for nitrogen fixation, p. 231-258, ill. Ref. New York, Plenum, 1977.

210. PETERS, G. A., EVANS, W. R., and TOIA, R. E., Jr. The Azolla-Anabaena azollae symbiosis: nitrogenase-catalyzed reactions. (Abstract) Plant Physiol. 57(5 suppl.):103. May 1976.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists with the American Institute of Biological Science, New Orleans, La., 1976.

211. PETERS, G. A. The Azolla-Anabaena symbiosis: morphology and physiology. In Proc. 2d Review Meeting Fertilizer I. N. P. U. T. S. (Increasing Productivity Under Tight Supplies) Project, Honolulu, 1978, p. 153-165, ill. Ref. Honolulu: East-West Center, 1978.

212. PETERS, G. A. Blue-green algae and algal associations. BioScience 28(9):580-585, ill. Sept. 1978.

213. PETERS, G. A., and others. Physiology and biochemistry of the Azolla-Anabaena symbiosis. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 37 p. ill. Ref.
B. C. Mayne, T. B. Ray, and R. E. Toia, Jr., joint authors.

214. PETERS, G. A. Studies on the Azolla-Anabaena azollae symbiosis. In Proc. Int. Symposium on Nitrogen Fixation 1st, Pullman, 1974, v. 2, p. 592-610, ill. Ref. Washington, D. C.: Washington State University Pr., 1976.

215. RAY, T. B., and others. Action spectra for photosynthesis and acetylene reduction in the Azolla-Anabaena symbiosis. (Abstract) Plant Physiol. 63(5 suppl.):112. May 1979.
B. C. Mayne, G. A. Peters, and R. E. Toia, Jr., joint authors.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Ohio State University, 1979.

216. RAY, T. B., and others. Azolla-Anabaena relationship. VII. Distribution of ammonia-assimilating enzymes, protein, and chlorophyll between host and symbiont. Plant Physiol. 62(3):463-467, ill. Ref. Sept. 1978.
G. A. Peters, R. E. Toia, Jr., and B. C. Mayne, joint authors.

217. RAY, T. B., and others. Levels of chlorophyll, protein and enzymes of ammonia assimilation in the Azolla-Anabaena azollae symbiotic association. (Abstract) Plant Physiol. 61(4 suppl.):12. Apr. 1978.
G. A. Peters, B. C. Mayne, and R. E. Toia, Jr., joint authors.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Blacksburg, Va., 1978.

218. RHODES, D. and STEWART, G. R. A procedure for the in-vivo determination of enzyme activity in higher plant tissue. Planta 118(2):133-144, ill. Ref. 1974.

219. SAUBERT, G. G. P. Provisional communication on the fixation of elementary nitrogen by a floating fern. Ann. Bot. Gard. Buitenzorg 51(2):177-197, ill. 1949.

220. SCHAEDE, R. Untersuchungen uber Azolla und ihre Symbiose mit Blaualgen. [Analysis of Azolla and its symbiosis with blue-green algae.] Planta 35(3/4):319-330, ill. Ref. 1947.

221. SCOTT, D. B. Ammonia assimilation in N_2-fixing systems. In Limitations and potentials for biological nitrogen fixation in the tropics; proc. of the International Latin American Symposium, 15th, Brasilia, 1977, p.223-235, ill. Ref. New York: Plenum, 1978.

222. SCULTHORPE, C. D. Regeneration and gemmipary. In His The Biology of vascular plants, p.337-339, ill. New York: St. Martin's Pr., 1967.

223. SHANNON, E. L. The production of root hairs by aquatic plants. Am. Midl. Nat. 50(2):474-479. Ref. Oct. 1953.

224. SHEN, C. A preliminary study of the nitrogen fixation of Azolla japonica. (Chinese) Turang Tongbao 4:46-48. 1963.

225. SHIMURA, Y. and TERADA, S. Preliminary study on the red pigment appearing in Azolla imbricata (Roxb.) Nakai. (Japanese) J. Jap. Bot. 42(9):266-271. Ref. Sept. 1967.
English summary.

226. SINGH, R. N. Biological productivity of inland waters with special reference to water-blooms. In His Role of blue-green algae in nitrogen economy of Indian agriculture, p.112-142. New Delhi: Indian Council of Agricultural Research, 1961.

227. SINGH, R. N. Introduction. In His Role of blue-green algae in nitrogen economy of Indian agriculture, p.11-14. New Delhi: Indian Council for Agricultural Research, 1961.

228. SINGH, R. P. and SHARMA, V. K. Caloric values of hydrophytes at different vertical stratification. Geobios 2(1):26. Jan. 1975.

229. SRIVASTAVA, V. C. and ASTHANA, M. Growth rate of Azolla pinnata R. Br. under laboratory conditions. Sci. Cult. 41(8):395-396. Aug. 1975.

230. STEWART, W. D. P. Associations of blue-green algae with other organisms. In His Nitrogen fixation in plants, p.66-70, ill. London: Athlone Pr., 1966.

231. STEWART, W. D. P. A botanical ramble among the blue-green algae. Br. Phycol. J. 12:89-115. 1977.

232. STEWART, W. D. P., ROWELL, P., and APTE, S. K. Cellular physiology and the ecology of N_2-fixing blue-grren algae. In Proc. International Symposium on Nitrogen Fixation, 2d, Salamanca, 1976, p.287-307, ill. Ref. London: Academic Pr., 1977.

233. STEWART, W. D. P., and others. Nitrogen fixation by soil algae of temperate and tropical soils. In Limitations and potentials for biological nitrogen fixation in the tropics; proc. of the International Latin American Symposium, 15th, Brasilia, 1977, p.41-63, ill. maps. Ref. New York· Plenum, 1978.
M. J. Sampaio, A. O. Isichei, and R. Sylvester-Bradley, joint authors.

234. STEWART, W. D. P. Nitrogen-fixing cyanobacteria and their association with eukaryotic plants. Endeavour 2 (4):170-179, ill. Ref. 1978.

235. STEWART, W. D. P. and RODGERS, G. A. Studies on the symbiotic blue-green algae of Anthoceros, Blasia and Peltigera. In Environmental role of nitrogen-fixing blue-green algae and asymbiotic bacteria, p. 247-259, ill. Ref. Stockholm: Swedish Natural Science Research Council, 1978. (Ecological Bulletins 26).

236. SUBUDHI, B. P. R. and SINGH, P. K. Effect of macronutrients and pH on the growth, nitrogen fixation and soluble sugar content of water fern Azolla pinnata. Biol. Plant. 21(1):66-70, ill. Ref. 1979.

237. SUBUDHI, B. P. R. and SINGH, P. K. Heterocyst spacing in the symbiotic blue-green algae Anabaena azollae. Curr. Sci.47(14):510-511, ill. Ref. July 1978.

238. TALLEY, S. N. and RAINS, D. W. The effect of environmental factors on growth, N_2-fixation and N balance of two Azolla species. (Abstract) Plant Physiol. 61(4 suppl.):2. Apr. 1978.

239. TOIA, R. E., Jr., and others. Initial characterizations and comparisons of five Azolla species: growth parameters. (Abstract) Plant Physiol. 63(5 suppl.):112. May 1979.
D. K. Christ, R. E. Poole, G. A. Peters, W. R. Evans, and B. C. Mayne, joint authors.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Ohio State University, 1979.

240. TYAGI, V. V. S., MAYNE, B. C., and PETERS, G. A. Isolation and characterization of phycobili-proteins from the endophytic cyanobacterium of Azolla. (Abstract) Plant Physiol. 63(5 suppl.):112. May 1979.
Paper presented at the Annual Meeting of the American Society of Plant Physiologists, Ohio State University, 1979.

241. VAUSE, E. H. Photosynthesis, nitrogen fixation and their interrelationship. In Proc. 26th Annual Meeting of the Agricultural Research Institute, Wash., D. C., 1977, p. 72-76. Washington, D. C., 1978?

242. VENKATARAMAN, G. S. Studies on nitrogen fixation by blue-green algae. III. Nitrogen fixation by Anabaena Azollae. Indian J. Agric. Sci. 32(1):22-24, ill. Ref. Mar. 1962.

243. VENKATARAMAN, G. S. and SAXENA, H. K. Studies on nitrogen fixation by blue-green algae. IV. Liberation of free amino acids in the medium. Indian J. Agric. Sci. 33(1):21-24, ill. Ref. Mar. 1963.

244. WALMSLEY, R. D., BREEN, C. M., and KYLE, E. Aspects of the fern-alga relationship in Azolla filiculoides. News Lett. Limnol. Soc. South Afr. 20:13-21. 1973.

245. WEN, Y. H. and TANG, J. M. A measure of nitrogen fixation activity of Azolla imbricata by acetylene reduction. (Chinese) Acta Bot. Sinica 20(3):273-275, ill. 1978.

246. WHITNEY, A. S. Symbiotic and nonsymbiotic nitrogen fixation as viewed by an agronomist. In Proc. Soil and Water Management Workshop, Washington, D. C., 1975, p. 51-75, ill. Ref. Washington, D. C.:Agency for International Development, 1975.

247. WILDEMANN, L. Weitere Beitrage zur Symbiose von Azolla und Anabaena. [Further contribution to the symbiosis of Azolla and Anabaena.] Muenster, 1934.
Thesis (Ph. D.)--Westfaelische Wilhelms- Universitaet Muenster.

TAXONOMY AND GEOGRAPHIC DISTRIBUTION

248. ABRAMS, L. Salviniaceae. In His Illustrated flora of the Pacific states, Washington, Oregon, and California, v.1, p.35, ill. California: Stanford Univ. Pr., 1940.

249. AKADEMIIA NAUK SSSR. BOTANIGHESKII INSTITUT. Genus Azolla Lam. In Its Flora of the USSR, v. 1, p. 70. Leningrad: Izdatel'stvo Akademiia Nauk SSSR, 1934.

250. ALLAN, H. H. Epharmonic response in certain New Zealand species, and its bearing on taxonomic questions. J. Ecol. 14(1):72-91, ill. Ref. Feb. 1926.

251. AQUATIC weeds found in Guyana. In Some prospects for aquatic weed management in Guyana; proc. of the Workshop on Aquatic Weed Management and Utilization, Georgetown, Guyana, 1973, p. 8-10. Georgetown: National Science Research Council of Guyana, 1973.

252. ARNOLD, C. A. The ancient ferns. In His An Introduction to paleobotany, p. 169-203, ill. Ref. New York: McGraw-Hill, 1943.

253. ARNOLD, C. A. A Tertiary Azolla from British Columbia. Contrib. Univ. Mich. Mus. Paleontol. 12(4):37-45, ill. Ref. Jan. 1955.

254. AVENA, G. C., BLASI, C., and RUBECA, L. Azolla caroliniana Willd. esotica naturalizzata, nuova nella Latium (Italy). [Azolla caroliniana Willd., a naturalized exotic, new in the flora of Latium (Italy).] Ann. Bot. (Rome) 33:195-308, ill. map. Ref. 1974(pub. 1975).
English summary.

255. AZOLLA. In Weldon, L. W., and others. Common aquatic weeds, p. 9-10, ill. Washington, D. C.: Agricultural Service, U. S. Dept. of Agriculture, 1969. (Agricultural Handbook no. 352)

256. AZOLLA, ferny. In New Zealand Weed and Pest Control Society. Standard common names for weeds in New Zealand, p. 3. Wellington, 1969.

257. AZOLLA Lam.; Aka-Ukikusa Zoku. In Ohwi, J. Flora of Japan, p. 107-108. Washington, D. C.: Smithsonian Institution, 1965.

258. AZOLLA pinnata var. Africana (Desv.). In Baker, J. G. Handbook of the fern allies, p. 138. London: George Bell, 1887.

259. AZOLLACEAE. In Water plants of the world; a manual for the identification of the genera of freshwater macrophytes, p. 87-88, ill. The Hague: Junk, 1974.

260. BAKER, J. van. Over het Voorkomen van Azolla filiculoides in Pleistocene Zoetwaterkleilagen onder Oosterbeek. [Occurrence of Azolla filiculoides in Pleistocene freshwater clay layer of Oosterbeek (Netherlands).] Verh. Geol. Mijnbouw Genoot. Ned. Kolon. Geol. Ser. 4. 1919.

261. BARBOUR, M. G. Additions and corrections to the flora of Bodega head California. Madroño 21(6):446-448. 1972.

262. BENSON, L. The process of identification; manual of the major taxa of living Pteridophytes. In His Plant classification, p. 536-552, ill. Boston: Heath & Co., 1957.

263. BENTHAM, G. Azolla Linn. In His Flora Australiensis: a description of the plants of the Australian Territory, v. 7, p. 679-680. London: Reeve, 1978.

264. BERGAD, R. D. and HALL, J. W. A Cretaceous Azolla masula with large glochidia. Bot. Gaz. 132(3):237-239, ill. Ref. Sept. 1971.

265. BERGAD, R. D. and HALL, J. W. A critical study of three Cretaceous Salviniaceous megaspores. (Abstract) Am. J. Bot. 58(5 pt. 2):468. May/June 1971.
Paper presented at the Interdisciplinary Meeting of the Canadian Botanical Association and the Botanical Society of America, Univ. of Alberta, 1971.

266. BERGAD, R. D. An ultrastructural comparison of walls of living and fossil Salviniaceous and Marsileaceous megaspores. (Abstract) Am. J. Bot. 59(6 pt. 2):659. July 1972.
Paper presented at the Meeting of the Botanical Society of America, Univ. of Minnesota, 1972.

267. BERTELSEN, F. Azolla species from the Pleistocene of the Central North Sea area. Grana 12(3):131-145. 1972.

268. BERTELSEN, F. Late Tertiary Azolla from Romo, Southwestern Denmark. In Danmarks Geologische Undersogelse Arbog, 1973, p. 15-25, ill. Copenhagen: C. A. Reitzels Forlag, 1974.

269. BIR, S. S. Taxonomy of Indian pteridophytes. In Recent advances in botany, p. 70-104. Ref. Dehra Dun: Bishen Singh Mahendra Pal Singh, 1976.

270. BIRKENBEIL, H. Azolla filiculoides in the Nordheimer Altrhein West Germany district. Hess. Florist Briefe 23 (1):14-16. 1974.

271. BLACK, J. M. Azolla (Fam. Salviniaceae). In Flora of South Australia, 2d ed., pt. 1, p. 42. Adelaide: South Australia Govt. Printer, 1948.

272. BRISTOW, J. M., and others. Salviniaceae: Azolla filiculoides Lam. (Spanish and English) In Their Malezas acuaticas, p. 91-92, ill. Bogota: Instituto Colombiano Agropecuario, n.d.
J. Cardenas, T. M. Fullerton, and J. Sierra F., joint authors.

273. BRUNKER, J. P. Azolla filiculoides Lam. in county Wicklow. Irish Nat. J. 9:340. 1949.

273a. CHATEAU, E. Dissemination de Azolla par les Batrachiens. [Dissemination of Azolla by the batrachians.] Bull. Soc. Hist. Nat. Autun 21:76. 1908.

274. CHRISTENSEN, C. Azollaceae. In Verdoorn, F., ed. Manual of pteridology, p. 550. The Hague: Nijhoff, 1938.

275. CLAUSEN, R. T. Azolla filiculoides on Long Island. Am. Fern J. 32:103. 1942.

276. COPELAND, E. B. Salviniaceae. In His Fern flora of the Philippines, v.3, p.555. Manila: Bureau of Printing, 1960.

277. COPELAND, E. B. Salviniaceae. In His Genera Filicum; the genera of ferns, p. 232. Waltham, Mass.: Chimica Botanica, 1947.

278. CORRELL, D. S. Azolla Lam. In His Fern and fern allies of Texas, p. 170-171. Renner, Texas: Texas Research Foundation, 1956.

279. CORRELL, D. S. A preliminary survey of the distribution of Texas pteridophyta. Wrightia 1:247-278. 1949.

280. CORRELL, D. S. and CORRELL, H. B. Salviniaceae Dum. In Their Aquatic and wetland plants of southwestern United States, v. 1, p. 57-61, ill. Stanford, Calif.: Stanford Univ. Pr., 1975.

281. COTTHEM, W. R. J. van. Stomatal types and systematics. In The Phylogeny and classification of the ferns, p. 59-71, ill. Ref. London: Academic Pr., 1973.

282. DE LA SOTA, E. R. Synopsis of the pteridophytes of the northwest of Argentina. III. (Spanish) Darwiniana 20(1/2):225-232. 1976.
English summary.

283. DeVol, C. E. Azollaceae. In Flora of Taiwan, v. 1, p. 60-61, ill. Taipei: Epoch Publ., 1975.

284. DeVol, C. E. The pteridophyta of Taiwan. 4. The aquatic ferns of Taiwan. [Azollaceae]. Taiwania 13:7-11. Ref. Dec. 1967.

285. DOROFEEV, P. I. O novych vidach Azolla Lam. dlja tretičnoj flory SSSR.]New species of Azolla Lam. in Tertiary floras of the USSR.] Bot. Zh. 44:1756-1763. 1959.

286. DRUCE, G. C. and BRITTON, C. E. Notes on Azolla caroliniana Willd. Rep. Bot. Soc. Exch. Club Br. Isl. 2:609. 1910.

287. DUCKWEEDS: other names. U. S. Dep. Agric. Bull. 205:4. 1915.

288. DUIGAN, S. L. and COOKSON, I. C. The occurrence of Azolla filiculoides L. and associated vascular plants in a Quaternary deposit in Melbourne, Australia. Proc. Roy. Soc. Victoria 69:5-13, ill. Ref. July 1956.

289. DUNCAN, W. H. Azolla caroliniana Willd. in Georgia. Am. Fern J. 50(4):266-267. Oct./Dec. 1960.

290. EEDEN, F. van. Azolla. Levende Nat. 19:499. 1915.

291. ERD, K. Pollen-analytical classification of the Middle Pleistocene in the German Democratic Republic. Palaeogeogr. Palaeoclimatol. Palaeoecol. 8(2/3):129-145, ill. map. 1970.

291a. EVANS, A. M. Mississippi flora: a guide to the ferns and fern allies. SIDA Contrib. Bot. 7(3):282-297, ill. maps. June 1978.

292. FASSETT, N. C. Salvinia family, water velvet; Salviniaceae, Azolla. In His A Manual of aquatic plants, p. 42-43, 363, ill. Madison: Univ. of Wisconsin Pr., 1957.

293. FERAKOVA, V. Bemerkungen zur Flora der Umgebung der Stadt Hlohovec in der Slowakei. III. [Floristic observations from the surroundings of the town of Hlohovec in Slovakia.] Acta Fac. Rerum Nat. Univ. Comenianae Bot. 20:149-158, ill. 1972.
Czech summary.

294. FLORSCHUTZ, F. Azolla filiculoides Lam. uit de Paludina-klei van Berlijn. [Azolla filiculoides Lam. from the Paludina clay of Berlin.] Proc. Acad. Sci. Amsterdam 44(3):339. 1941.

295. FLORSCHUTZ, F. Azolla uit het Nederland Palaeoceen en Pleistocene. [Azolla in the Paleocene and Pleistocene Netherlands.] Verh. Geol. Mijnbouw Genoot. Ned. Kolon. Ser. 14:191-198. 1949.

296. FLORSCHUTZ, F. Die beiden Azolla arten des Niederlaendischen Pleistozaens. [The two species of Azolla from the Pleistocene deposits of the Netherlands.] Recl. Trav. Bot. Neerl. 35:932-945. 1938.

297. FLORSCHUTZ, F. Fossile Azolla in Nederland. [Fossil Azolla in Netherlands.] Ned. Kruidk. Arch. 1:75-81. 1928.

298. FLORSCHUTZ, F. Over Azolla en de Ouiderdomsbespaling van Interglaciale Zoetwaterafzettingen in Nederland. [Azolla and the age determination of interglacial freshwater deposits in the Netherlands.] Geol. Mijnbouw 14: 12-13. 1935.

299. FLORSCHUTZ, F. Ueber die Flora des Mindel-Riss-Interglazials in den Niederlanden. [On the flora during the penultimate interglacial period of the Netherlands.] Recl. Trav. Bot. Neerl. 39:176-188, ill. 1942.

300. FOLLIERI, M. Azolla filiculoides Lam. in the lower Pleistocene of central Italy. Ann. Bot. (Rome) 30:177-182, ill. Ref. 1970/1971 (pub. 1972).
Italian summary.

301. FOLLIERI, M. Classification and phylogeny of living and fossil water ferns of the genus Azolla. Webbia 31(1): 97-104. 1977.
Italian summary.

302. FOSBERG, F. R. Notes on plants of the Pacific Islands. III. [Salviniaceae]. Bull. Torrey Bot. Club 70(4): 386-397. July 1943.

303. FOWLER, K. Megaspores and massulae of Azolla prisca from the Oligocene of the Isle of Wight. J. Paleontol. 18(3):483-508, ill. 1975.

304. FRYE, T. C. Salviniaceae. In His Ferns of the Northwest, p. 158-162, ill. Portland: Metropolitan Pr., 1934.

305. FULVIO, T. E. di. On the epispore of the American species of Azolla with special reference to Azolla mexicana Presl. (Spanish) Kurtziana 1:299-302. Ref. Apr. 1961.
English summary.

306. GARCIA NOVO, F. Cuatro nuevos treboles para Extremadura. [Four new clovers from Extremadura.] Bol. Real Soc. Espan. Hist. Natur. Secc. Biol. 67(3/4):233-242, ill. map. 1969.

307. GAY, P. A. Eichhornia Crassipes in the Nile of the Sudan. Nature 182(4634):539. Aug. 1958.

308. GIBBS, R. D. Azolla. In Botany, an evolutionary approach, p. 26, 179. Toronto: Blakiston, 1950.

309. GODWIN, H. Azolla filiculoides Lam. In His The History of the British flora: a factual basis for phytogeography, p. 287-289, ill. Cambridge: Cambridge Univ. Pr., 1956.

310. GRAY, A. Salviniaceae (Salvinia family). In His Gray's manual of botany, 8th ed., p. 51. Boston: American Book Co., 1950.

311. HALL, J. W. and BERGAD, R. D. Ariadnaesporites and glomerisporites, two Cretaceous megaspores of possible Salviniaceous affinity. (Abstract) Am. J. Bot. 59(6 pt. 2):661. July 1972.

312. HALL, J. W. Cretaceous Salviniaceae. Ann. Mo. Bot. Gard. 61(2):354-367. 1974.

313. HALL, J. W. A new genus of Salviniaceae and a new species of Azolla from the late Cretaceous. Am. Fern J. 58(2):77-88, ill. 1968.

314. HALL, J. W. Notes on fossil Salviniaceae. Taxon 18(6):735. Dec. 1969.

315. HALL, J. W. and NICOLSON, D. H. Paxillitriletes, a new name for fossil megaspores hitherto invalidly named Thomsonia. Taxon 22(2/3):319-320. May 1973.

316. HALL, J. W. and SWANSON, N. P. Studies on fossil Azolla: Azolla Montana, a Cretaceous megaspore with many small floats. Am. J. Bot. 55(9):1055-1061, ill. Ref. Oct. 1968.

317. HALL, J. W. Studies on fossil Azolla: primitive types of megaspores and massulae from the Cretaceous. Am. J. Bot. 56(10):1173-1180, ill. Ref. Nov./Dec. 1969.

318. HALL, J. W. Trends in the evolution of fossil Salviniaceae. (Abstract) In Abstracts of Papers presented at the XI International Botanical Gongress, Seattle, 1969, p.83. Seattle, 1969.

319. HALL, S. A. Cretaceous and Tertiary dinoflagellates from Seymour Island, Antarctica. Nature 267(5608):239-241, ill. Ref. May 19, 1977.
Azolla massulae.

320. HECKMAN, G. W. Azollaceae. In His Rice field ecology in northeastern Thailand: the effect of wet and dry seasons on a cultivated aquatic ecosystem, p. 74. The Hague: Junk, 1979.

320a. HEIMANS, J. Azolla. Levende Nat. 20:281-289. 1915.

321. HEIMANS, J. De verspreiding van Azolla. [The distribution of Azolla.]. Levende Nat. 19:377-378. 1915.

322. HENSHAW, S. Azolla caroliniana Willd. Proc. Nat. Sci. Assoc. Staten Isl. 1:44 45. 1886.

323. HERTER, G. Las dos especies Americanas de Azolla en la Republica del Uruguay. [The two American species of Azolla in Uruguay.] Darwiniana 2(1):14-18, ill. Jan. 1928.

324. HERZOG, R. Geographische Verbreitung der Gattungen Salvinia und Azolla. [Geographic distribution of Salvinia and Azolla.] Bot. Arch. 39:219-225, ill. 1938.

325. HILLS, L. V. and WEINER, N. Azolla geneseana, n. sp. and revision of Azolla primaeva. Micropaleontology 11 (2):255-261, ill. 1965.

326. HILLS, L. V. and GOPAL, B. Azolla primaeva and its phylogenetic significance. Can. J. Bot. 45(8):1179-1191, ill. Ref. Aug. 1967.

327. HILTERMANN, H. Neue Funde von Azolla im Pleistozaen Deutschlands. [New findings of Azolla in Pleistocene Germany.] Geol. Jahrb. 68:653-658. 1954.

328. HOOKER, W. J. Salviniaceae. In His Flora Boreali-Americana, p. 268. London: Henry G. Bohn, 1840 (repr. 1960).

329. HOWELL, J. T. Salviniaceae. In His Marin flora; a manual of flowering plants and ferns of Marin County, California, p. 54. Berkeley: Univ. of California Pr., 1949.

330. HYLANDER, C. J. The fern plants. In His The World of plant life, 2d ed., p. 101-120, ill. New York: Macmillan, 1956.

331. JAIN, R. K. and HALL, J. W. A contribution to the early Tertiary fossil record of the Salviniaceae. Am. J. Bot. 56(5):527-539, ill. Ref. May/June 1969.

332. JAIN, R. K. Pre-Tertiary records of Salviniaceae. Am. J. Bot. 58(6):487-496, ill. Ref. July 1971.

333. JONES, G. N. Keys to the genera and species. Division I. Pteridophyta. Ferns and fern-allies. In His Flora of Illinois, 2d ed., p. 33-41. Notre Dame: Univ. Pr., 1950. (American Midland Naturalist monogr. 5).

334. JORDANOV, D. and KOCHEV, H. Materials and critical notes for the flora in Bulgaria. Izv. Bot. Inst. Bulg. Akad. Nauk. 24:241-245. 1973.

335. KELLY, M. R. The Middle Pleistocene of north Birmingham. Philos. Trans. Roy. Soc. London Ser. B 247:533-592, ill. maps. Ref. July 1964.

336. KEMPF, E. G. Sporen von Azolla und Salvinia im Neogen Westdeutschlands. [Spores of Azolla and Salvinia in the Neocene West Germany.] (Abstract) Rev. Palaeobot. Palynol. 2(1/4):13. 1967.

337. KLINKENBERG, A. Azolla. Levende Nat. 19:419. 1915.

338. KNOBLOCH, I. W. and CORRELL, D. S. Salviniaceae. Salvinia family. In Their Ferns and fern allies in Chihuahua, Mexico, p. 50-51. Renner, Texas: Texas Research Foundation, 1962.

339. KNOWLTON, C. H., RIPLEY, W. S., Jr., and WEATHERBY, C. A. Third report of the Committee on Floral Areas. Rhodora 23(273):209-220. Sept. 1921.

340. KORNAS, J. The pteridophyta new to Zambia. Bull. Acad. Pol. Sci. Ser. Sci. Biol. 22(10):713-718. 1974.
Russian summary.
Azolla nilotica.

341. KORNILOVA, V. S. Aquatic fern, Azolla, in the deposits of Chegan formation. (Russian) Dokl. Akad. Nauk SSSR 93:139-142. Ref. Nov. 1953.

342. KUMMERLE, J. B. Uber das Vorkommen der Azolla filiculoides in Italien und Japan. [Azolla filiculoides in Italy and Japan.] Magyar Bot. Lapok 27(1/12):65-67. 1928 (pub. 1929).

343. LAMARCK, J. B. P. A. M. Azolla filiculoides Lam. In Encyclopedia metodique:Botanique, v. 1: 343. Paris: Chez Panckoncke, 1783.

344. LAMP, C. and COLLET, F. Azolla filiculoides Lam; Pacific or red azolla. In Their A Field guide to weeds in Australia, p. 72, ill. Melbourne: Inkata Press, 1976.

345. LAWALREE, A. Azollaceae. In Tutin, T. C., and others. Flora Europaea 1:25. 1964.

346. LAWRENCE, G. H. M. Salviniaceae. Salvinia family. In His Taxonomy of vascular plants, p. 353-354, ill. New York: Macmillan, 1951.

347. LEARMONTH, N. F. The Darlots Creek (Vic.) sanctuary. Victorian Nat. 69(2):19-20. 1952.
Azolla filiculoides.

348. LUNDELL, C. L. Salviniaceae Dumort. In His Flora of Texas, v. 1, p. 116-117. Renner, Texas: Texas Research Foundation, 1966.

349. MCGREGOR, R. L. Ferns and fern allies in Kansas. Am. Fern J. 50(1):62-66. Jan./Mar. 1960.

350. MAHABALE, T. S. Evolutionary tendencies in the genus Azolla. Mem. Indian Bot. Soc. 4:51-54, ill. Ref. 1963.

351. MARSH, A. S. Azolla in Britain and in Europe. J. Bot. (London) 52:209-213. 1914.

352. MARSH, A. S. The history of the occurrence of Azolla in the British Isles and in Europe generally. Proc. Camb. Philos. Soc. 17:383-386. Ref. 1914.

353. MARTIN, A. R. H. Upper Paleocene Salviniaceae from the Woolwich/Reading beds near Cobham, Kent. Palaeontology 19(1):173-184. 1976.

354. MARTIN, W. Pteridophytes of the Banks Peninsula (eastern portion). Proc. N. Z. Inst. 52:315-322. 1920.

355. MATTHEW, C. G. Enumeration of Chinese ferns. J. Linn. Soc. Bot. 39:339-393. 1911.

356. MAXON, W. R. Notes on American ferns. I. Azolla caroliniana Willd. in central New York. Fern Bull. 8:30. 1900.

356a. METTENIUS, G. Ueber Azolla. [Azolla.] Linnaea 20:259-282. 1847.

357. MICKEL, J. T. Azolla. In His How to know the ferns and fern allies, p. 60-61, ill. Dubuque, Iowa: W. C. Brown, c1979.

358. MIRASHI, M. V. Studies in the hydrophytes of Nagpur; a preliminary study. J. Indian Bot. Soc. 33(4):299-308, ill. map. Ref. 1954.

359. MIRASHI, M. V. Studies in the hydrophytes of Umred. J. Indian Bot. Soc. 36(3):396-407, ill. Ref. 1957.

360. MOHLENBROCK, R. H. Salviniaceae - water fern family. In His Ferns, p. 171-173, ill. Urbana: Illinois Univ. Pr., 1967.

361. MUENSCHER, W. C. Vascular plants. In Edmonson, W. T., ed. Fresh-water biology, 2d ed., p. 1170-1193, ill. Ref. New York: Wiley, 1959.

362. MUENSCHER, W. R. Salviniaceae: water-fern family. In His Aquatic plants of the United States, p. 350-351, ill., maps. New York: Comstock, 1944.

363. MULLER, J. and LEENHOUTS, P. W. A general survey of pollen types in Sapindaceae. In Proc. International Symposium on the Evolutionary Significance of the Exine, Kew, Eng., 1974, p. 407-446, ill. Ref. London: Academic Pr., 1976.

364. MUNZ, P. A. and KECK, D. D. Azolla Lam. In Their A California flora, p. 46-47, ill. Berkeley: Univ. of Calif. Pr., 1959.

365. NAKAI, T. Notes on Japanese ferns. II. [Azolla]. Bot. Mag. 39(463):184-185. July 1925.

366. NELSON, M. L., GANGSTAD, E. O., and SEAMAN, D. E. Summary of aquatic plants observed in northeast Thailand and Laos according to type, common name and scientific name. In Their Report on potential growth of aquatic plants of the lower Mekong River Basin, table 1. [Washington]: Corps of Engineers, 1970.

367. OGUNYOMI, O. and HILLS, L. V. Depositional environments foremost formation. Late Cretaceous Milk River area southern Alberta, Canada. Bull. Can. Pet. Geol. 25(5):929-968. 1977.

368. OSTENFELD, C. H. Salviniaceae. New Phytol. 11(3):127. Mar. 1912.
Azolla in the British Isles.

369. OTT, F. D. and FETRIK-OTT, A. J. Azolla and its occurrence in Virginia. Br. Fern Gaz. 10(6):305-309. Ref. 1973.

370. PALMER, W. E. Azolla in Norfolk. Nature 92(2295):233. Oct. 1913.

371. PANDIT, B. R. and MULAY, B. N. Azolla at Khandalla. (Abstract) Proc. Indian Sci. Congr. 18th:267. 1931.

372. PARADKAR, S. A. Rhizomites dakshini gen. et sp. nov. a new pteridophytic axis from the Deccan intertrappean beds of India. Botanique (Nagpur) 2(1):15-19, ill. 1971.

373. PETERSON, N. F. Azolla in Nebraska. Torreya 35:14. 1935.

374. PICHI-SERMOLLI, R. E. G. Pteridophyta. In Turrill, W. B. Vistas in botany, p. 421-493. Ref. New York: Pergamon Press, 1959.

375. PLANCHAIS, N. The palyno flora of the final Tertiary at Sete Herault Southern France. C. R. Hebd. Seances Acad. Sci. Ser. D. Sci. Nat. 278(7):855-858. 1974.

376. PRICE, M. G. Salviniaceae. In His The Pteridophytes of Mt. Makiling and vicinity, p. 48-50, ill. College, Laguna, 1975.

377. PRICE, M. G. A summary of our present knowledge of the ferns of the Philippines. Kalikasan 1(1):17-53. Ref. 1972.

378. PROCEEDINGS of the Torrey Club. Bull. Torrey Bot. Club 12:32. 1885.

379. PULLE, A. Azolla Lam. In His An enumeration of the vascular plants known from Surinam together with their distribution and synonymy, p. 37. Leiden: Brill, 1960.

380. RACIBORSKI, M. Salviniaceae. (German) In His Die Pteridophyten der Flora von Buitenzorg, p. 233-234. Leiden: E. J. Brill, 1898.

381. REED, C. F. Azolla caroliniana in Maryland. Castanea 16:143-144. 1951.

382. REED, C. F. Distribution of Salvinia and Azolla in South America and Africa, in connection with studies for control by insects. Phytologia 12(3):121-130. Ref. May 1965.

383. REID, E. M. and CHANDLER, M. E. J. Azolla prisca. In Their Catalogue of Cainozoic plants in the Department of Geology, v. 1; The Bembridge Flora, p. 40. London: The British Museum, 1926.

384. RIDLEY, H. N. Azolla (Salviniaceae). In His The Dispersal of plants throughout the world, p. 179-180. Kent: L. Reeve & Co., 1930?

385. RIDLEY, H. N. The distribution of plants. Ann. Bot. 37(145):1-29. Jan. 1923.

386. RIDLEY, H. N. The fern-allies and Characeae of the Malay Peninsula. J. Roy. Asiat. Soc. Straits Br. 80:139-164. 1919.

387. RIDLEY, H. N. Portions of living aquatics transported by birds, batrachians, etc. In His The Dispersal of plants throughout the world, p. 536-543. Kent: L. Reeve & Co., 1930?

388. ROCHOW, M. von. Azolla filiculoides im Interglazial von Wunstorf bei Hannover und das wahrscheinliche Alten dieses interglazials. [Azolla filiculoides in the interglacial deposit of Wunstorf at Hannover and the probable age of this interglacial.] Ber. Dtsch. Bot. Ges. 65(9):315-318, ill. 1952 (pub. 1953).

389. SADEBECK, R. Salviniaceae. (German) In Die Naturlichen Pflanzenfamilien, ed. by A. Eugler and K. Prentl, I Teil, Abt. 4, p. 383-402. Leipzig: Verlag Wilhelm Engelmaan, 1902.

390. SAHNI, B. Indian silicified plants. I. Azolla intertrappea Sah. & H. S. Rao. Proc. Indian Acad. Sci Sect: B 14(6):489-501, ill. Ref. Dec. 1941.

391. SAHNI, B. and RAO, H. S. The silicified flora of the Deccan intertrappean series. IV. Azolla intertrappea sp. nov. (Abstract) Proc. Indian Sci. Congr. 21st:318-319. 1934.

392. SALISBURY, E. Species that have spread or are spreading. In His Weeds & Aliens, p. 50-80, ill. London: Collins, 1961.

393. SCHOFIELD, E. K. and COLINVAUX, P. A. Fossil Azolla from the Galapagos Islands. Bull. Torrey Bot. Club 96 (6):623-628, ill. Ref. Nov./Dec. 1969.

394. SCULTHORPE, C. D. The spread of Azolla filiculoides. In His The Biology of aquatic vascular plants, p. 358-360. New York: St. Martin's Pr., 1967.

395. SETO, K. and NASU, T. Discovery of fossil Azolla massulae from Japan and some notes on recent Japanese species. (Japanese) Bull. Osaka Mus. Nat. Hist. 29:51-60, ill. Ref. Oct. 1975.
English summary.

396. SEWARD, A. C. The Cainozoic era. The Tertiary period. In His Plant life through the ages, p. 415-479, ill. maps. New York: Hafner Publ. Co., 1966.

397. SEWARD, A. C. A classification of plants. In His Plant life through the ages, p. 60-73, ill. New York: Hafner Publ. Co., 1966.

398. SEWARD, A. C. The Cretaceous period. In His Plant life through the ages, p. 378-414, ill. New York: Hafner Publ. Co., 1966.

399. SEWARD, A. C. The later Carboniferous vegetation with some account of Permian floras. In His Plant life through the ages, p. 203-288, ill. map. Ref. New York: Hafner Publ. Co., 1966.

400. SEWARD, A. C. Salviniaceae. In His Fossil plants; a textbook for students of botany and geology, v. 2; p.475-477. Ref. New York: Hafner, 1969.

401. SHAVER, J. M. The mosquito fern (Azolla caroliniana Willd.) in Tennessee. J. Tenn. Acad. Sci. 29:99-106, ill., map. Ref. 1954.

402. SHEN, E. Y. F. Concerning Azolla imbricata. Am. Fern J. 51(3):151-155, ill. Ref. July/Sept. 1961.

403. SMITH, L. B., and others. Reports on the flora of Massachusetts. II. Rhodora 35(419):351-359. Nov. 1933.
J. R. Churchill, A. S. Goodale, R. H. Goodwin, F. W. Grigg, S. K. Harris, D. Potter, G. B. Rossbach, and S. N. F. Sanford, joint authors.

404. SOBOLEWSKA, M. Azolla filiculoides Lam. w starszym interglajale w Polsce. [Azolla filiculoides Lam. in the older interglacial of Poland.] Publ. Inst. Bot. Univ. Jagellonicae Cracoviensis 7(17):241-248, ill. 1956.

405. SOBOLEWSKA, M. Pleistocene vegetation of Syrniki on the river Wieprz. (Polish) Publ. Inst. Bot. Univ. Jagellonicae Cracoviensis 17(5):143-192, ill. 1956.
English summary.
Azolla filiculoides.

406. SOUREK, J. Azolla filiculoides Lam. - neue eingeschleppte Art in der CSR. [Azolla filiculoides Lam. - newly introduced species in Czechoslovakia.] Preslia 30(1):84-85. 1958.

407. SRIVASTAVA, S. K. Azolla from the Upper Cretaceous Edmonton formation, Alberta, Canada. Can. J. Earth Sci. 5:915-919, ill. maps. Ref. 1968.

408. STANLEY, T. D. Aquatic plants of Queensland. Queensl. Agric. J. 104(4):371-376, ill. July/Aug. 1978.

409. STEWARD, A. N. Salviniaceae. In His Manual of vascular plants of the lower Yangtze Valley, China, p. 26. Corvallis: Oregon State College, 1958.

410. STOUGH, J. B. Palynomorphs from South America. I. New late Cretaceous palynomorphs from southern South America. Univ. Kansas Paleontol. Contrib. Pap. 32:1-8, ill. map. 1968.

411. SVENSON, H. K. The new world species of Azolla. Am. Fern J. 34(3):69-84, ill. July/Sept. 1944.

412. SWEET, A. R. and HILLS, L. V. A detailed study of the genus Azollopsis. Can. J. Bot. 52(7):1625-1642, ill. Ref. July 1974.

413. SWEET, A. R. and HILLS, L. V. Early Tertiary species of Azolla subg. Azolla sect. Kremastopora from western and arctic Canada. Can. J. Bot. 54(3/4):334-351, ill. Ref. Feb. 1976.
French summary.

414. SWEET, A. R. and HILLS, L. V. Evolution of Azolla and Azollopsis during the Upper Cretaceous and lower Tertiary. (Abstract) Am. J. Bot. 58(5 pt. 2):473. May/June 1971.
Paper presented at the Interdisciplinary Meeting of the Canadian Botanical Association and the Botanical Society of America, Univ. of Alberta, 1971.

415. SWEET, A. R. The taxonomy, evolution, and stratigraphic value of Azolla and Azollopsis in the Upper Cretaceous and Lower Tertiary. Calgary, Algerta, 1972.
Thesis (Ph. D.)--University of Calgary.

416. SWEET, A. R. and CHANDRASEKHARAM, A. Vegetative remains of Azolla schopfii Dijkstra from Genesee, Alberta. Can. J. Bot. 51(8):1491-1496, ill. Ref. Aug. 1973.
French summary.

417. TEWARI, R. B. Pteridophytic flora of Lucknow District (U. P.) [Uttar Pradesh]. Bull. Bot. Surv. India 15 (1/2):129-130. 1973 (pub. 1976).

418. TUTIN, T. G., and others. Azollaceae. In Their Flora Europaea, v. 1, p. 25. Cambridge: Univ. Pr., 1964.
V. H. Heywood, N. A. Burges, D. H. Valentine, S. M. Walters, and D. A. Webb, joint editors.

419. VELICHKEVICH, F. Yu. Novyia danyia ab flory razrezu shlave-2 bliz g Anikshchu Litouskai SSR. [New data on the flora of the Shlave-2 layer near Anikshchai in the Lithuanian SSR.] Vestsi Akad. Navuk BSSR Ser. Biyal. Navuk 5:43-51, ill. Ref. 1973.
Azolla interglacialica Nikit.

420. WAGNER, W. H., Jr. Some future challenges of fern systematics and phylogeny. In The Phylogeny and classification of the ferns, p. 245-256. Ref. London: Academic Pr., 1973.

421. WEST, R. G. The occurrence of Azolla in British interglacial deposits. New Phytol. 52(3):267-272, ill. Ref. Sept. 1953.

422. WETTER, C. Ein tropischer Wasserfarn im Rhein. [Tropical water fern in the Rhine.] Natur Volk 80:140-142. 1950.

423. WILLIAMS, E. G. Further notes on Azolla filiculoides Lam. Northwest. Nat. 18:326-327. Dec. 1943.

424. WILLIAMS, E. G. Further notes on the occurrence in Cheshire of Azolla filiculoides Lam. Northwest. Nat. 19: 303. Dec. 1944.

425. WILSON, D. B. Notable plant records from the Cromer-forest bed series. New Phytol. 72(5):1207-1234, ill. Ref. Sept. 1973.
Azolla filiculoides.

426. WOOTON, E. O. and STANDLEY, P. C. Salviniaceae. In Their Flora of New Mexico, p. 27. Washington: Govt. Printing Off., 1915 (repr. 1972).

427. YABE, Y. and YASUI, K. Notes on the Japanese species of Azolla. (Japanese) Bot. Mag. 27(320):379-381. Aug. 1913.

ECOLOGY

428. AMBASHT, R. S. Ecosystem study of a tropical pond in relation to primary production of different vegetational zones. Hidrobiologia 12:57-61. 1970.

429. ANTONIELLI, M. and CAGIOTTI, M. R. Presence of chlorophyllide in hydrophytes and algae of Lake Trasimeno and the variability of pigment content in Spirogyra. (Italian) Riv. Idrobiol. 14(1/2):3-12. 1975 (pub. 1976).

430. AVENA, G. C., BLASI, C., and RUBECA, L. Riccio flutans - Azolla association: a new ecological indicator of water status in the Tiber river. (Italian) Ann. Bot. (Rome) 34:171-190. 1975.

431. BENEDICT, R. C. Notes on the spring growth of Azolla. Am. Fern J. 14(1):23-24. 1924.

432. BERNARD, C. A propos d'Azolla. [Concerning Azolla.] Recl. Trav. Bot. Neerl. 1:1-13. 1904.

433. BISWAS, K. Balanced vegetation and pisciculture. Sci. Cult. 9(4):142-146. Oct. 1943.

434. BONETTO, A. A. Principales rasgos limnologicas del Norte Argentino. [Principal limnologic traits of northern Argentina.] Bol. Soc. Argent. Bot. 11(suppl.):184-209, ill. map. 1970.

435. CHAPMAN, V. J. and BROWN, J. M. A. The lake weed problem in the north island of New Zealand. Phykos 5(1/2): 72-82, ill. Ref. 1966.

436. CHAVAN, A. R. and SABNIS, S. D. A study of the hydrophytes of Baroda and environs. J. Indian Bot. Soc. 40(1): 121-130, ill. map. Ref. 1961.

437. CLEGG, J. Plants of the water-side and the larger aquatic plants. In His The Freshwater life of the British Isles, p. 47-64, ill. London: Frederick Warne & Co., 1965.

438. COKER, R. E. Life in the lake: plants and lower animals. In His Streams, lakes, ponds, p. 197-226, ill. Chapel Hill: Univ. of Carolina Pr., 1954.

439. COLINVAUX, P. A. Climate and the Galapagos Islands. Nature 240(5375):17-20, ill. map. Ref. Nov. 3, 1972.

440. COLINVAUX, P. A. and SCHOFIELD, E. K. Historical ecology in the Galapagos Islands. I. A Holocene pollen record from El-Junco lake, Isla San Cristobal. J. Ecol. 64(3):989-1012, ill. maps. Ref. Nov. 1976.

441. COLINVAUX, P. A. and SCHOFIELD, E. K. Historical ecology in the Galapagos Islands. II. Holocene spore record from El Junco Lake, Isla San Cristobal. J. Ecol. 64(3):1013-1028, ill. Ref. Nov. 1976.

442. COLINVAUX, P. A. Reconnaissance and chemistry of the lakes and bogs of the Galapagos Islands. Nature 219(5154): 590-594, ill. Ref. Aug. 1968.

443. DE BOLOS, O. and MASCLANS, F. La vegetacion de los arrozales en la region Mediterranea. [The vegetation of the rice fields in the Mediterranean region.] Collect. Bot. 4(3):415-434, ill. 1955.

444. DIONI, W. The Camoeban taxocenoses in island basins in the Middle Parana River. II. Biocenology of the Camoebans from the floating vegetation in the Don Felipe Oxbow. (Spanish) Physis Secc. B Aguas Cont. Org. 33(86):114-126, ill. 1974.
English summary.

445. DUIGAN, S. L. Pollen analyses of the Cromer Forest bed series in East Anglia. Philos. Trans. Roy. Soc. London Ser. B 246:149-202, ill. Ref. 1963.

446. GUNNING, G. E. and LEWIS, W. M. The fish population of a spring-fed swamp in the Mississippi bottoms of Southern Illinois. Ecology 36(4):552-558, ill. map. Oct. 1955.

447. GUNNING, G. E. Illinois. In Frey, D. G. Limnology in North America, p. 163-189, ill. maps. Ref. Madison: Univ. of Wisconsin Pr., 1966.

448. HOGEWEG, P. and BRENKERT, A. L. Structure of vegetation: a comparison of aquatic vegetation in India, the Netherlands and Czechoslovakia. Trop. Ecol. 10(1):139-162, ill. Ref. June 1969.

449. HOWARD-WILLIAMS, C. and JUNK, W. J. The chemical composition of Central Amazonian aquatic macrophytes with special reference to their role in the ecosystem. Arch. Hydrobiol. 79(4):446-464. 1977.

450. HURGHISIU, I. Contributii la cunoasterea macrofitelor. [Contributions to macrophyte studies.] Stud. Cercet. Biol. Ser. Biol. Veg. 29(2):129-136. Ref. 1977.
English summary.

451. HUTCHINSON, G. E. Minor metallic elements in lake waters. In His A Treatise on limnology, v. 1, p.801-835, ill. New York: Wiley, 1957.

452. JAEGER, P. Note provisoire sur le comportement de l'Azolla filiculoides Lmk. dans le systeme du confluent de l'Ile (region de Strasbourg). [Note on the behavior of Azolla filiculoides in the Ile river ecosystem near Strasbourg.] Monde Plant. 283/284:61-62. 1951/1952 (pub. 1952).

453. KHARE, V. S. and SHARMA, P. G. Ecology of Solah Sagar pond. Geobios 3(2):66-67. 1976.

454. KIESER, G. Quelques aspects particuliers de la palynologie du Cretace superieur du Senegal. [Some particular palynological aspects of the Upper Cretaceous of Senegal.] Rev. Palaeobot. Palynol. 5(1/4):199-210, ill. Ref. 1967.
English summary.

455. KNOBLOCH, E. The lower Miocene flora from Safov in Southern Moravia, Czechoslovakia. (German) Vestn. Ustred. Ustavu Geol. 53(3):153-162. 1978.

456. KOCHEV, Kh. and IORDANOV, D. The macrophyte vegetation of the Danube waterbodies in Bulgaria and its change under the effect of humans and conservation. (Russian) Bot. Zh. 61(9):1294-1297. 1976.

457. MCLAREN, J. P. Manatees as a naturalistic biological mosquito control method. Mosquito News 27:387-393, ill. Ref. Sept. 1967.

458. MISRA, R. and JHA, U. N. Energy studies in macrophytes of a freshwater pond at Varanasi. (Abstract) In Proc. Indian Science Congress Association, 57th, Kharagpur, 1970, pt.3, p. 322-323.

459. MISRA, R. A study in the ecology of the low-lying lands. Indian Ecol. 1:27-47. 1946.

460. MITCHELL, D. S. The ecology of vascular hydrophytes on Lake Kariba. Hydrobiologia 34:448-464. 1969.

461. MITCHELL, D. S. Plants floating free on the surface. In His Aquatic weeds in Australian inland waters, p. 58-59. Canberra: Australian Govt. Publ. Service, 1978.

461a. NELSON, M. L., GANGSTAD, E. O., and SEAMAN, D. E. General observations. In Their Report on potential growth of aquatic plants of the lower Mekong River Basin, p. 16-19. [Washington]: Corps of Engineers, 1970.

462. NEWTON, J. W. Photoproduction of molecular hydrogen by a plant-algal symbiotic system. Science 191(4227): 559-560. Ref. Feb. 1976.

463. OHTANI, S. Distribution and ecology of fern flora of Kanagawa prefecture, Japan. (Japanese) Sci. Rep. Yokosuka City Mus. 24:51-58. 1978.

464. OLSEN, O. On biological nitrogen fixation in nature, particularly in blue-green algae. C. R. Trav. Lab. Carlsberg 37(12):269-283, ill. 1970.

465. RANWELL, D. S. Introduced aquatic, freshwater and salt marsh plants - case histories and ecological effects. I. U. C. N. [Int. Union Conserv. Nat. Nat. Resources] Publ. New Ser. 9:27-37. 1967.

466. REID, G. K. Aquatic communities. In His Ecology of inland waters and estuaries, p. 288-340, ill. New York: Reinhold Publ. Corp., 1961.

467. REID, G. K. Protists and plants in inland waters and estuaries. In His Ecology of inland waters and estuaries, p. 211-226, ill. New York. Reinhold Publ., 1961.

468. RODGERS, J. H., Jr. and CHERRY, D. S. Ash basin effluent impact on the aquatic flora of a stream and swamp drainage system. ASB (Assoc. Southeast. Biol.) Bull. 22(2):76. 1975.

469. ROGER, P. A. and REYNAUD, P. A. Premieres donnees sur l'ecologie d'Azolla africana en zone saheliene (Senegal). [First information on the ecology of Azolla africana in the Sahelian zone (Senegal).] Oecol. Plant. 14(1):75-83. Ref. 1979.
English summary.

470. RONDEROS, R. A. and BULLA, L. A. Variacion horizontal de la distribucion de la mesofauna del pleuston en la laguna "Las Perdices". [Horizontal variation of the mesofauna of the pleuston distribution in the "Las Perdices" pond.] Acta Zool. Lilloana 28:127-162, ill. 1971.
English summary.

471. ROSSO DE FERRADAS, B. Notas sobre Hidracaridos Argentinos. III. Arrenuridae. [Notes about Argentine Hydracarina. III. Arrenuridae.] Physis Secc. B. Aguas Cont. Org. 32(85):199-205, ill. 1973.
English summary.
Azolla caroliniana.

472. RZEDOWSKI, J. Algunas asociaciones vegetales de los terrenos del lago. [Some plant associations of the soils of Lake Texcoco.] Bol. Soc. Bot. Mexico 21:19-33, ill. maps. Ref. 1957.

473. SCHAFFNER, M. Free-floating plants of Ohio. Ohio Nat. 6:420-421. 1905.

474. SCHNACK, J. A. Variacion espacial y temporal del mesopleuston en la Laguna Yalca (Provincia de Buenos Aires). [Spatial and seasonal variations of the mesopleuston of the Yalca pond (Province of Buenos Aires).] Physis Secc. B Aguas Cont. Org. 32(84):1-12. 1973.
English summary.

475. SCULTHORPE, C. D. The growth of Hydrophyte communities and their interaction with the aquatic environment. In His The Biology of vascular plants, p. 414-455, ill. New York: St. Martin's Pr., 1967.

476. SCULTHORPE, C. D. The salient features of aquatic vascular plants. In His The Biology of vascular plants, p. 1-24, ill. New York: St. Martin's Pr., 1967.

477. SEERWANI, A. B. A study in the hydrophytes and plants of low lying habitats in Jahalpur. Bull. Bot. Surv. India 4(1/4):227-231. 1962.

478. SEGAL, S. and GROENHART, M. C. Het Zuideindigerwiede een uniek verlandingsgebied. [The Zuideindigerwiede, a unique land-making area.] Gorteria 3(11):165-181, ill. map. Ref. Aug. 1967.
English summary.

479. SILVESTER, W. B. Ecological and economic significance of the non-legumes symbioses. In Proc. 1st International Symposium on Nitrogen Fixation, Pullman, Wash., D. C., 1974, v.2, p. 489-506, ill. Ref. Wash., D. C.: Washington State Univ. Pr., 1976.

480. SRIVASTAVA, G. D. and TANDON, R. K. A study of the autecology of Trapa bispinosa Roxb. Proc. Natl. Acad. Sci. India 21(2/6):57-66, ill. 1951.

481. STRAUS, A. Thallophyten, Kryptogamen und Gymnospermen aus dem Pliozan von Willershausen. [Thallophytes, Kryptogams and Gymnosperms from the Pliocene of Willershausen.] Ber. Dtsch. Bot. Ges. 65(4):74-79. Ref. 1952.

482. VYAS, L. N. A study of hydrophytes and marsh plants of Alwar and environs. J. Indian Bot. Soc. 43(1):17-30. Ref. 1964.

483. WALL, J. H., SWEET, A. R., and HILLS, L. V. Paleoecology of the bearpaw and contigous Upper Cretaceous formations in the Canadian Pacific Oil and Gas Strathmore Well, Southern Alberta. Bull. Can. Pet. Geol. 19(3):691-702, ill. 1971.

484. WALTER, H. Other vegetation types of the humid tropics. 1. Swamp and aquatic vegetation. In His Ecology of tropical and sub-tropical vegetation, p. 144-150, ill. New York: Van Nostrand Reinhold Co., 1971.

485. WESTLAKE, D. F. Primary production of freshwater macrophytes. In Proc. IBP Synthesis Meeting on the Functioning of Photosynthetic Systems in Different Environments, Aberystwyth, 1973, p. 189-206. Ref. Cambridge: Cambridge Univ. Pr., 1975.

485a. ZAPTE C., H. Araneus pentacantha Walckenaer en la sabana de Bolivia. [Araneus pentacantha Walckenaer in the savanna of Bolivia.] Invest. Zool. Chilenas 4:29-31, ill. map. 1957.

AGRONOMY

GENERAL

486. AZOLLA multiplication. Aduthurai Rep. 2(10):120-121. Oct. 1978.

487. AZOLLA multiplication and utilization; guide-lines for multiplication. Rice Res. News 4(2):1-2, ill. June 1978.

488. *CHEKIANG ACADEMY OF AGRICULTURAL SCIENCES. INSTITUTE OF SOILS AND FERTILIZERS. Cultivation, propagation, and utilization of Azolla. (Chinese) Chekiang, 1975. 127, [4] p. ill.

489. JIA SHAN COUNTY. TAI YUN COMMUNE. AGRICULTURAL TECHNIQUE STATION. The experiment on effect of ammonia molybdate on the productivities of alfalfa and Azolla. (Chinese) Zhejiang Nongye Kexue 1:38-39. 1978.

490. LUMPKIN, T. A. Environmental constraints to Azolla cultivation. In Proc. 2d Review Meeting I. N. P. U. T. S. (Increasing Productivity Under Tight Supplies) Project, Honolulu, 1978, p. 175-180, ill. Ref. Honolulu: East-West Resource Systems Institute, 1978.

491. *NGUYEN CONG TIEU and NGUYEN CONG HUAN. Conservation de l'Azolla en saison chaude. [Conservation of Azolla in the warm season.] Bull. Econ. Indochine 37:1318-1329. 1934.

492. SINGH, P. K. Biology and agronomic significance of Azolla-Anabaena symbiotic nitrogen fixation. Proc. Indian Sci. Congr. Bot. Sect. 64th:41. 1977.

AZOLLA IN CROPPING SYSTEMS (AS FERTILIZER AND GREEN MANURE)

493. AGARWAL, A. Blue-green algae to fertilize Indian rice paddies. Nature 279(5710):181. May 1979.

494. APP, A. A., and others. Nonsymbiotic nitrogen fixation in flooded soils: association with the rice plant. Paper presented at the 10th Annual Science Meeting of the Crop Science Society of the Philippines, Manila, 1979, 10, [3] p. Ref.
I. Watanabe, M. Alexander, W. Ventura, C. Daez, T. Santiago, and S. K. De Datta, joint authors.

495. AZOLLA a good manure for rice. Farm Factory 13(3/4):20. Jan./Feb. 1979.

496. AZOLLA as a supplemental source for flooded paddy culture. In Proc. Fertilizer I. N. P. U. T. S. (Increasing Productivity Under Tight Supplies) Project. Review Meeting, 2d, Honolulu, 1978, p. 16-18. Honolulu: East-West Center, 1978.

497. AZOLLA - these tiny plants can cut your fertilizer expenses. Philipp. Farmers' J. 21(3):20, ill. Mar. 1979.

498. BACON, P. E. Algae fix nitrogen in rice bays. Agric. Gaz. N. S. W. 90(1):45. Feb. 1979.

499. BIO-FERTILIZERS. FAO [Food Agric. Organ. U. N.] Soils Bull. 40:29-40, ill. 1977.
Also in ADAB [Agric. Dev. Agencies Bangladesh] News 6(6):14-16, ill. June 1979.

500. *BRAEMER, F. La culture des Azolla au Tonkin. [The cultivation of Azolla in Tonkin.] Rev. Bot. Appl. Agric. Colon. 7:815-819, ill. 1927.

501. *BRAEMER, P.. Les engrais verts dans la riziculture Tonkinese. [Green manures in Tonkinese rice cultivation.] Riz Rizicult. 2(5):335-341. 1927.

502. BROTONEGRO, S. and ABDULKADIR, S. Decomposition of Azolla pinnata in moist and flooded soil. Ann. Bogor. 6(4):169-175. 1978.

503. BROTONEGRO, S. and ABDULKADIR, S. Penguraian Azolla pinnata dalam tanah sawah. [Decomposition of Azolla pinnata in lowland rice soils.] Peningkatan Penel. Pengembangan Prasarana Penel. Biol. Laporan Teknik 1975-76:29-33. 1976.

504. BROTONEGRO, S. and ABDULKADIR, S. Penguraian Azolla pinnata dalam tanah sawah. [The decomposision of Azolla pinnata in lowland rice soils.] Peningkatan Penel. Pengembangan Prasarana Penel. Biol. Laporan Teknik 1976-1977:36-43. 1977.

505. BUI, G. D. Spring rice (xuan); an intensifying factor of rice production in North Vietnam. (Russian) S-kh. Biol. 11(2):299-303. 1976.
English summary.

506. *BUI HUY DAP. Planting and cultivation of spring rice. (Vietnam) Agric. Sci. Technol. 59:645-653. Nov. 1966.

507. BUI HUY DAP. Some characteristic features of rice growing in Vietnam. In Agricultural problems 2, p. 38-66. Hanoi: Xunhasaba, 1967. (Vietnamese studies no. 13)
Azolla-rice rotation.

508. BUI HUY DAP. The spring rice and the Green Revolution in North Vietnam. Paper presented at the International Rice Research Conference, IRRI, Los Baños, Laguna, 1976. 5 p.

509. CHEKIANG ACADEMY OF AGRICULTURAL SCIENCE. INSTITUTE OF SOILS AND FERTILIZERS. The nutrient value of water fern to rice crop with relation to soil fertilizer and the methods of application. (Chinese) Zhegiang Nongye Kexue 4:26-29. 1977.

510. CHEN, K., LUI, S., and SHENG, C. A preliminary study of the overwintering of Azolla pinnata as a source of green manure. (Chinese) J. Chi. Agric. Sci. 4:22-25. 1963.

511. *CHEVALIER, A. La culture des Azolla pour la nourriture des animaux de basse-cour et comme engrais vert pour les rizieres. [The cultivation of Azolla for animal feed and as green manure for rice fields.] Rev. Bot. Appl. Agric. Colon. 6(58):356-360. 1926.

512. CHINA, Azolla propagation and small-scale technology. FAO [Food Agric. Organ. U. N.] Soils Bull. 41. 1978.

513. COMMON paddy plant fixes nitrogen needs. Third World Agric. 1(2):14-15, ill. May 1979.

514. *DAO CHU. The development of green manure plants in Vinh Phuc. Agric. Sci. Technol. 58:585-588. (Vietnamese) Oct. 1966.

515. *DAO THE TUAN and DO ANH. A few ideas on equating different kinds of nitrogenous fertilizer with pure nitrogen. (Vietnamese) Agric. Sci. Technol. 93:168-175. Mar. 1970.
Azolla as fertilizer in farming systems in Vietnam.

516. *DAO THE TUAN and TRAN QUANG THUYET. Introducing Azolla in the crop rotation of rice growing areas as a major crop. (Vietnamese) Agric. Sci. Technol. 69:654-658. Nov. 1966.

517. DAO THE TUAN and TRAN QUANG THUYET. Use of Azolla in rice production in Vietnam. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 8, [11] p. ill. Ref.

518. DAY, J. M. and WITTY, J. F. Novel aspects of nitrogen fixation. Outlook Agric. 9(4):180-185. Ref. 1977.
Azolla in paddy-rice culture.

519. *DUMONT, R. L'Azolle. [Azolla.] In His La Culture du riz dans le delta du Tonkin, p. 249-251. Paris: Societe d'Editions Geographiques Maritimes et Coloniales, 1935.

520. ENHANCING biological nitrogen fixation in cereals. In California. University. University at Davis. Enhancing biological production of ammonia from atmospheric nitrogen and soil nitrate, p. 14-18. Davis, 1979.

521. ESPINAS, C. R. and WATANABE, I. Potentiality of nitrogen fixing Azolla-Anabaena complex as fertilizer in paddy soil. Paper presented at the IRRI Saturday Seminar, Los Baños, Laguna, Aug. 14, 1976. 8, [4] p.

522. FOGG, G. E., and others. The ecology of nitrogen fixation by algae. In Their The Blue-green algae, p. 323-342, ill. London: Academic Pr., 1973.
W. D. P. Stewart, P. Fay, and A. E. Walsby, joint authors.

523. FOSBERG, F. R. Uses of Hawaiian ferns. Am. Fern J. 32(1):15-23. Jan./Mar. 1942.

524. GIGINEISHVILI, P. L. Azolla. Subtrop. Kul't. 1:167-168. 1973.

525. GOVINDARAJAN, K., KANNAIYAN, S., and RAMACHANDRAN, M. Azolla manuring to rice. Aduthurai Rep. 3(7):89-90. July 1979.

526. HARDY, R. W. F. Potential impact of current abiological and biological research on the problem of providing fixed nitrogen. In Proc. 1st International Symposium on Nitrogen Fixation, Pullman, Wash., 1974, Washington State University Pr., 1976.

527. INDONESIA. LEMBAGA BIOLOGI NASIONAL. Nitrogen fixation by free-living microorganisms and by non-leguminous plants. In Its Highlights of research activities, 1974-1979, p. 8-9, ill. Bogor, 1979.

528. INTERNATIONAL RICE RESEARCH INSTITUTE. Nitrogen fixation in Banaue rice terrace soil and Pangil phosphorus-deficient oxisol. Its Annu. Rep. 1975:277. 1976.

529. KANNAIYAN, S. Nitrogen fixation by Azolla: a brief review. Farm Sci. 5(3):19-27. 1978.

530. KANNAIYAN, S. Nitrogen fixation by Azolla for rice crop. MACCO [Mysore Agro-Chem. Co.] Agric. Dig. 4(1): 28-33. May 1979.

531. KARAMYSHEV, V. P. Azolla-udobreniye. [Azolla as fertilizer.] Nauka Pered. Opyt Sel'sk. Khoz. 7(10):75-77. 1957.

532. KULASOORIYA, S. A. and DE SILVA, R. S. Y. Effect of Azolla on yield of rice. Int. Rice Res. Newsl. 3:10. June 1977.

533. KULASOORIYA, S. A. and SILVA, R. S. Y. de. Nitrogen fixing blue-green algae in rice soils of Sri Lanka and their potential as a fertilizer in rice cultivation. (Abstract) In Limitations and potentials for biological nitrogen fixation in the tropics; proc. of the International Latin American Symposium, 15th, Brasilia, 1977, p. 345-346. New York: Plenum, 1978.

534. *LA XUAN DINH. Various aspects of the 1966-1967 fertilizer mission and procedures. (Vietnamese) Agric. Sci. Technol. 58:581-585. Oct. 1966.

535. LAMBORG, M. R. The role of blue-green algae [in] enhancing crop production. In Report of the Public Meeting on Genetic Engineering for Nitrogen Fixation, Wash., D. C., 1977, p. 56-60. Ref. Wash., D. C.: National Science Foundation, 1978.

536. *LE VAN KAN and SOBOCHKIN, A. A. The problems on the utilization of Azolla as a green manure in Democratic Republic of Vietnam. (Russian) In Proc. Timiryazev Moscow Agric. Acad. 94:93-97. 1963.

537. LIU, C. C. Studies on cultivation of Azolla in the rice fields for most of the year. [Fukien]: Soil and Fertilizer Research Institute, Fukien Academy of Agricultural Sciences, 1978. 31 p.

538. LIU, C. C. The use of Azolla in rice production in China. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 8 p.

539. LU, S. Y., and others. Study on the biological characteristics of Azolla pinnata, a green manure crop in paddy fields. (Chinese) Zhongguo Nongye Kexue 11:35-40. Nov. 1963.
K. T. Ch'en, C. H. Shen, and S. A. Ko, joint authors.

540. LUMPKIN, T. A. Azolla in Kwangtung province, People's Republic of China. Int. Rice Res. Newsl. 6:18. Dec. 1977.

541. MISHUSTIN, E. N. Biological nitrogen fixation in agriculture and prospects of utilizing nitrogen fixing blue-green algae in agriculture. In Proc. Sci. Adv. Comm. for Physiology and Biochemistry of Microorganisms, 1964, p. 1-47. Moscow: Acad. Sci., 1964.
Azolla in Vietnam.

542. MISHUSTIN, E. N. and SHIL'NIKOVA, V. K. Nitrogen fixation by blue-green algae. In Their Biological Fixation of atmospheric nitrogen, p. 284-312, ill. Ref. University Park: Pennsylvania State Univ. Pr., 1971.

543. NEW strategy to increase rice production. Seeds Farms 4(5/6):55-56. June 1978.

544. NGO GIA DINH. The effect of Azolla pinnata R. Br. on growth. Paper presented at the 2d Indonesian Weed Science Conference, Yogyakarta, 1973. 11 p.

545. NGUYEN CONG HUAN. Future of Azolla as fertilizer to winter rice. (Vietnamese) Hanoi, 1951. 24 p.

546. *NGUYEN CONG TIEU. L'Azolle cultivee comme engrais vert. [The Azolla plant cultivated for use as a green fertilizer.] Bull. Econ. Indochine 33:335-350, ill. Ref. 1930.

547. *NGUYEN NGOC XUAN. Six years of development of the spring rice harvest in Ha Tay. (Vietnamese) Agric. Sci. Technol. 59:661-664. Nov. 1966.

548. NOSTOC: From delicacy to nitrogen powerhouse. PCARR [Philipp. Counc. Agric. Resources Res.] Monit. 7(5):8-9, ill. May 1979.

549. PHILLIPS, D. A., and others. Enhancing biological nitrogen fixation. Cereal Foods World 23(1):26-29, ill. Ref. Jan. 1978.
D. W. Rains, R. C. Valentine, and R. C. Huffaker, joint authors.

550. RAINS, D. W. The use of Azolla as a source of nitrogen fertilizer for California rice culture. In Proc. 26th Annual California Fertilizer Conference, 1978, p. 1-2.

551. RAINS, D. W. and TALLEY, S. N. Use of Azolla as a source of nitrogen for temperature zone in rice culture. In Proc. 2d Review Meeting Fertilizer I. N. P. U. T. S. (Increasing Productivity Under Tight Supplies) Project, Honolulu, 1978, p. 167-173, ill. Ref. Honolulu: East-West Center, 1978.

552. RAINS, D. W. and TALLEY, S. N. Uses of Azolla in North America. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 15, [6] p. ill. Ref.

553. RAMACHANDRAN, J. and SUBRAMANIAN, D. Latest technology in agriculture. MACCO [Mysore Agro Chem. Co.] Agric. Dig. 4(6):5-6. Oct. 1979.

554. RICE RESEARCH STATION, PATTAMBI. Observational trial with Azolla. Its Annu. Rep. 1977-78:61. 1979?

555. RICE without chemicals. Furrow 84(5):8-9, ill. Sept./Oct. 1979.

556. ROYCHOUDHURY, P., and others. Effect of blue-green algae and Azolla application on the aggregation status of the soil. Curr. Sci. 48(10):454-455. May 20, 1979.
B. D. Kaushik, G. S. R. Krishnamurthy, and G. S. Venkataraman, joint authors.

557. SAWATDEE, P., and others. Azolla research studies in Thailand; study on self-supply manures. Paper presented at the International Rice Research Conference, IRRI, Los Baños, Laguna, 1979. 14 p. Ref.
W. Seetanun, C. Chevmsiri, C. Kanareugsa, and J. Takahashi, joint authors.

558. SAWATDEE, P., and others. Effect of Azolla as a green manure crop on rice yields in northeastern Thailand. Int. Rice Res. Newsl. 3(3):22-23. June 1978.
W. Seetanun, C. Chermsiri, C. Kanareugsa, and J. Takahashi, joint authors.

559. SHANMUGAM, K. T., and others. Control of biological nitrogen fixation. In Nitrogen in the environment, ed. by D. R. Nielsen and J. G. MacDonald, v. 2, p. 393-416, ill. Ref. New York: Academic Pr., 1978.
F. O'Gara, K. Anderson, C. Morandi, and R. C. Valentine, joint authors.

560. SHANMUGAM, K. T. and VALENTINE, R. C. Solar protein. Calif. Agric. 30(11):4-7, ill. Nov. 1976.
Azolla/Anabaena/rice association to increase rice yields.

561. *SHIH, S. L., and others. Effect of Azolla on the fertility of paddy soils. (Chinese) Acta Pedol. Sinica 15 (1):54-60. Ref. Aug. 1978.
L. L. Ch'eng, H. H. Lin, C. L. Shu, and C. H. Wen, joint authors.
English summary.

562. SILVESTER, W. B. Dinitrogen fixation by plant associations excluding legumes. In A Treatise on dinitrogen fixation, Sect. IV: Agronomy and Ecology, p. 141-190, ill. maps. Ref. New York: John Wiley & Sons, 1977.

563. SINGH, P. K. Azolla: a precious green compost for rice cultivation. Proc. Indian Sci. Congr. Agric. Sci. Sect. 64th:117. 1977.

564. SINGH, P. K. Azolla fern plant rice fertilizer and chicken feed. Kerala Karshakan 26:5-6. 1977.

565. SINGH, P. K. Azolla plants as fertilizer and feed. Indian Farming 27(1):19-20, 22, ill. Apr. 1977.

566. SINGH, P. K. Effect of Azolla on the yield of paddy with and without application of N fertilizer. Curr. Sci. 46(18):642-644. Ref. Sept. 1977.

567. SINGH, P. K. Multiplication and utilization of fern "Azolla" containing nitrogen fixing algal symbiont as green manure in rice cultivation. Riso 26(2):125-136, ill. Ref. June 1977.
Italian summary.

568. SINGH, P. K. Nitrogen economy of rice soils in relation to nitrogen fixation by blue-green algae and Azolla. Paper presented at the National Symposium on Increasing Rice Yield in Kharif, Central Rice Research Institute, 1978. 27 p. Ref.

569. SINGH, P. K. This water fern makes nitrogen for rice. Intensive Agric. 16(4):26-28, ill. June 1978.

570. SINGH, P. K. Use of Azolla in India. Paper presented at the International Rice Research Conference, IRRI, Los Baños, Laguna, 1970. 23, [6] p. Ref.

571. SINGH, P. K. The use of Azolla pinnata as a green manure for rice. Int. Rice Res. Newsl. 2:7, ill. Apr. 1977.
Also in Wallaceana 10:49-50. Sept. 1977.

572. SINGH, P. K. Use of Azolla in rice production in India. Paper presented at the Nitrogen and Rice Symposium, Los Baños, Laguna, 1978. 16, [10] p. ill. Ref.

573. SRINIVASAN, S. Azolla. Aduthurai Rep. 1977:30. 1977.

574. SRINIVASAN, S. and PARI, A. Azolla manuring to rice. Aduthurai Rep. 2(3):32. Mar. 1978.

575. SRINIVASAN, S. Combination of Azolla and N-fertilization. Aduthurai Rep. 1977:63, ill. 1977.

576. TALLEY, S. N., TALLEY, B. J., and RAINS, D. W. Nitrogen fixation by Azolla in rice fields. In Hollaender, A., ed. Genetic engineering for nitrogen fixation, p. 259-281, ill. Ref. New York: Plenum, 1977.

577. TRAN QUANG THUYET and DAO THE TUAN. Azolla: a green compost. In Agricultural problems, v.4, p. 119-127. San Francisco: China Books, 1973. (Vietnamese Studies no. 38)

578. TS'AI, T. C., T'AI, C. C. and CH'ENG, L. L. Research on cultivation of plants with the utilization of paddy field green fertilizer (Azolla). (Chinese) Acta Pedol. Sinica 4:49-53. 1962.

579. *TSUJIMURA, K., IKEDA, F., and TSUKAMOTO, K. Studies on Azolla with reference to a green manure for rice-field. (Japanese) J. Sci. Soil Manure 28(7):275-278, ill. Oct. 1957.

580. USE of Azolla and leaves of Ipomea and Dhiancha as a source of nitrogen. Farm Factory 12(11/12):8. Sept./Oct. 1978.

581. VENKATARAMAN, G. S. The role of blue-green algae in tropical rice cultivation. In Stewart, W. D. P., ed. Nitrogen fixation by free-living microorganisms, p. 207-218. Ref. Cambridge: Cambridge Univ. Pr., 1975. (International Biological Programme 6)

582. WATANABE, I. Azolla and its use in lowland rice culture. Tsuchi Biseibutsu 20:1-10, ill. Ref. Dec. 1978. Japanese summary.

583. WATANABE, I. Azolla utilization in rice culture. Int. Rice Res. Newsl. 3:10. June 1977. Also in Wallaceana 10:50. Sept. 1977.

584. WATANABE, I. and LEE, K. K. Non-symbiotic nitrogen fixation in rice and rice fields. In Biological nitrogen fixation in farming systems of the tropics, p. 289-305, ill. Ref. Chichester: Wiley, 1977.

585. WATANABE, I. Role of microbes. Paper presented at the International Rice Research Institute Annual Program Review, Los Baños, Laguna, 1978. 20 p.

586. WATANABE, I., and others. Utilization of the Azolla-Anabaena complex as a nitrogen fertilizer for rice. Int. Rice Res. Inst. Res Pap. Ser. 11. 15 p. 1977.
C. R. Espinas, N. S. Berja, and B. V. Alimagno, joint authors.
Abstract in Fert. Technol. 15(11):90-91. Jan./Mar. 1978; AACU [Asian Assoc. Agric. Coll. Univ.] Newsl. 7(1):14. Jan./May 1979; ADAB [Agric. Dev. Agencies Bangladesh] News 8:7, 15, ill. Sept. 1977.

587. WITTWER, S. H. Assuring our food supply - technology, resources and policy. In The World food problem: consensus and conflict, p. 487-495. Oxford: Pergamon Pr., 1978.

588. ZOBEL, R. W. and WALLACE, D. H. Potential for nitrogen fixation in vegetables. Hortscience 13(6):679-682. Ref. Dec. 1978.
Paper presented at the 74th Symposium on Increasing the Biological Efficiency of Vegetable Crops, Salt Lake City, Utah, 1977.

PLANT PROTECTION

PESTS AND DISEASES OF AZOLLA

589. GOMEZ P., L. D. Some insect interactions with Azolla mexicana. Am. Fern J. 68(2):60. Apr./June 1978.

590. HANDAYANI, T. and SYED, R. A. Nymphula responsalis attacking Salvinia spp. in Indonesia. (Abstract) BIOTROP [Reg. Cent. Trop. Biol.] Newsl. 15:14. Jan./Mar. 1976.

591. KNOPF, K. W. and HABECK, D. H. Life history and biology of Samea multiplicalis. Environ. Entomol. 5(3):539-542. Ref. June 1976.

592. RAJAN ASARI, P. A. and DALE, D. A new enemy of Azolla. Int. Rice Res. Newsl. 3(3):17. June 1978.

593. RICHERSON, P. J. and GRIGARICK, A. A. The life history of Stenopelmus rufinasus (Coleoptera: Curculionidae). Ann. Entomol. Soc. Am. 60(2):351-354, ill. Ref. Mar. 1967.

594. SASI, P. S., WILSON, K. I., and SASIDHARAN, N. K. Incidence of Rhizoctonia Solani on Azolla pinnata. Curr. Sci. 48(5):216, ill. Mar. 1979.

595. SINGH, P. K. First report on pests of the fern Azolla and their control. Sci. Cult. 44(5):234-236, ill. Ref. May 1978.

596. SUBAGYO, T. Some aspects of the biology of Nymphula responsalis Wlk. attacking Salvinia spp. (Abstract) BIOTROP [Reg. Cent. Trop. Biol.] Newsl. 12:14. Apr./June 1975.

596a. ABE, K., NAKAGAWA, K., and KODAMA, S. Damage and control of Azolla japonica. (Japanese) Proc. Hokuriku Br. Crop Sci. Soc. Japan 2:51-54, ill. 1966.

597. ALLAN, M. The world of weeds. In His Weeds; the unbidden guests in our gardens, p. 12-22, ill. New York: Viking, 1978.

598. AUDIA, W. V. and PRESTON, W. H. The effects of several algaecides on aquatic plant. Proc. Northeast. Weed Contr. Conf. 19:451-455. 1965.
Algaecides tested for phytotoxicity to Azolla caroliniana.

599. BENNETT, F. D. and ZWOLFER, H. Exploration for natural enemies of water hyacinth in northern South America and Trinidad. Hyacinth Contr. J. 7:44-52. 1968.

600. BENNETT, F. D. Insects and pathogens for the control of Salvinia and Pistia. In Proc. Symposium on Water Quality Management Through Biological Control, Gainesville, Fla., 1975, p. 28-35.

601. BILL, S. M. The water weed problem in Australia. Hyacinth Contr. J. 8(1):1-6. 1969.

602. BLACKBURN, R. D. and WELDON, L. W. The sensitivity of duckweeds (Lemnaceae) and Azolla to diquat and paraquat. Weeds 13(2):147-149, ill. Ref. Apr. 1965.

603. BOWMER, K. H. The effects of soil type and temperature on persistence of atrazine herbicide. In Annu. Rep. Division of Irrigation Research. Commonwealth Scientific and Industrial Research Organization 1971-72:27-30. 1972.

604. BREZNEY, O. and MEHTA, I. Aquatic weeds and their distribution in Chambal commanded area in Kota, Rajasthan. Indian J. Weed Sci. 2:70-80. 1970.

605. CHEMICAL controls Azolla red. Irrig. Farmer 5(3):24. Sept. 1978.

606. CHOKDER, A. H. Pond weeds of East Pakistan and their propagation. Agric. Pakistan 9:259-309. 1958.

607. DUTHU, G. S. and KILGEN, R. H. Aquarium studies on the selectivity of 16 aquatic plants as food by fingerling hybrids of the cross between male Ctenopharyngodon idella [grass carp] and female Cyprinus carpio [Israeli common carp]. J. Fish Biol. 7:203-208. Ref. 1975.
Hybrids showed preference for Azolla caroliniana.

608. EDWARDS, D. J. Taking a bite at the waterweed problem. N. Z. J. Agric. 130(1):33-36. 1975.
Grass carp showed preference for water weeds, one of which is Azolla rubra.

609. EDWARDS, D. J. Weed preference and growth of young grass carp in New Zealand. N. Z. J. Mar. Freshwater Res. 8(2):341-350, ill. 1974.
Azolla rubra.

610. FLORIDA. BUREAU OF AQUATIC PLANT RESEARCH AND CONTROL. Water fern - (Azolla caroliniana Willd.) In Its Aquatic weed identification and control manual, p. 37, ill. Tallahassee, 1972?

611. FRANCE. CENTRE TECHNIQUE DU GENIE RURAL DES EAUX ET DES FORETS, GROUPEMENT DE BORDEAUX. SECTION QUALITE DES AUX, PECHE ET PISCICULTURE. Vegetation aquatique. Plantes exotiques du sud-ouest, repartition actuelle et risques d'extension. [Aquatic vegetation. Exotic plants of the South West, present distribution and risks of extension.] Its Compte rendu 45. 26 p. Ref. 1978.
Azolla as weed and problems associated with control.

612. FRANK, P. A. Distribution and utilization research on tropical and subtropical aquatic weeds in the USA. In Aquatic weeds in South East Asia; proc. of a Regional Seminar on Noxious Aquatic Vegetation, New Delhi, 1973, p. 353-359, ill. New Delhi: Junk B. V., 1976.

613. FUNDERBURK, H. H., Jr. Diquat and paraquat. In Kearney, P. C. and Kaufman, D. D., eds. Degradation of herbicides, p. 283-298, ill. Ref. New York: Dekker, 1969.

614. GOPALAKRISHNAN, R. and JOY, P. J. Aquatic weeds Salvinia and Eichhornia. Indian Farming 27(12):39-46, ill. Mar. 1977.

615. HABECK, D. H. and ALLEN, G. E. Lepidopterous insects as biological control agents of aquatic weeds. In Proc. International Symposium on Aquatic Weeds, Vienna, 1974, p. 107-113. Ref. Vienna: European Weed Control Council, 1974?
French and German summaries.

616. HEDDY, S., and others. Penggunaan Azolla untuk memberantas Salvinia dalam budi daya padi sawah dan sekaligus untuk meningkatkan produksi gabah. [The use of Azolla to suppress Salvinia in the rice field and to increase the rice yield.] Agrivita 2(1):1-13. Ref. Feb. 1979.
Nawawi, S. Soekartomo, S. M. Mimbar, and Soetono, joint authors.
English summary.

617. ISLAM, A. K. M. N. and MENDES, F. Limnological studies of a jheel in Sher-e-Bangla Nagar. Dacca Univ. Stud. 24(2):63-71. 1976.

618. KHARE, L. J. Effect of four herbicides on some aquatic weeds. Geobios 4(6):271-272. 1977.
Azolla pinnata.

619. KING, L. J. The classification of weeds. In His Weeds of the world; biology and control, p. 32-48. Ref. New York: Interscience Publ., 1966.

620. KLEINSCHMIDT, H. E. Effect of granular 2, 4-D on some waterweeds and its persistence. Queensl. J. Agric. Anim. Sci. 26(3):587-592. Sept. 1969.

621. LAHSER, C. W. Tilapia mosambica as a fish for aquatic weed control. Progr. Fish Cult. 29(1):48-50. Ref. 1970.
Azolla caroliniana preferred by the fish.

622. LANG, N. J. and SEAMAN, D. E. Ultrastructural effects of herbicides on Lemna and Azolla. (Abstract) Am. J. Bot. 51(6 pt. 2):671. July 1964.
Paper presented at the Meeting of the Botanical Society of America and certain affiliated groups, Boulder, Colo., 1964.

623. LAWRENCE, J. M. Aquatic weed control in fish ponds. FAO [Food Agric. Organ. U. N.] Fish. Rep. 44(5):76-91. 1966.

624. LAWRENCE, J. M. and WELDON, L. W. Identification of aquatic weeds. Paper Aquatic Weed Management Training Course, Nonthaburi, 1977. 13 p. ill. Bangkok: National Research Council, 1977.

625. MATTHEWS, L. J. Aquatic weed control. Proc. N. Z. Weed Contr. Conf. 13:58-61. 1960; 16:16-18. 1963.

626. MATTHEWS, L. J. and MANSON, B. E. These weeds mean trouble. N. Z. J. Agric. 118(4):33-35, 37, 39, ill. map. Apr. 1969.
Azolla rubra.

627. MATTHEWS, L. J. Weed identification and control. Azolla rubra. N. Z. J. Agric. 106(4):297, ill. Apr. 1963.

628. MERLIER, H. Weed flora of irrigated ricefields in the Ivory Coast. (French) In 2e Symposium sur le Desherbage des Cultures Tropicales, Montpellier, 1974, p. 112-126. Paris: Comite Francais de Lutte contre les Mauvaises Herbes, 1975.
English summary.

629. MISRA, G. and DAS, N. Studies on the control of aquatic weeds of Orissa - response of Pistia stratiotes L., Spirodela Polyrhiza Schleid and Ipomoea Aquatica Forsk. to hormone herbicides. Hyacinth Contr. J. 8(1):40-41. 1969.

630. MITCHELL, D. S. Aquatic weeds in man-made lakes. Geophys. Monogr. Ser. 17:606-611. 1973.

631. MITCHELL, D. S. and THOMAS, P. A. Ecology of water weeds in the neotropics: an ecological survey of the aquatic weeds Eichhornia Crassipes and Salvinia species, and their natural enemies in the neotropics. Paris: UNESCO, 1972. 50 p. ill. Ref.

632. MITCHELL, D. S. Specific problem infestations. In His Aquatic weeds in Australian inland waters, p. 67-107, ill. map. Canberra: Australian Govt. Pub. Service, 1978.

633. MITRA, E. Practical methods for controlling the water weeds in fishery tanks. J. Asiat. Soc. 1(1):51-71. 1959.

634. OOSTHUIZEN, G. J. and WALTERS, M. M. Control of water fern with diesoline. Farming S. Afr. 37(2):35-37, ill. May 1961.
Azolla pinnata.

635. PATNAIK, S. Control of some aquatic vegetation in fish ponds at Cuttack. J. Inland Fish. Soc. India 8:221-226. 1977.

636. PIETERSE, A. H. Biological control of aquatic weeds: perspectives fot the tropics. Aquat. Bot. 3(2):133-141. Ref. June 1977.

637. PIETERSE, A. H. Control of tropical aquatic weeds. Amsterdam: Koninklijk Institut voor de Tropen, 1977. 20 p., ill. Ref.

638. RADHAKRISHNAN, S. and BHUIYAN, B. R. Aquatic weeds of ponds in Assam, India. (Abstract) In Proc. 6th Asian-Pacific Weed Science Society Conference, Indonesia, 1977, v. 1, p. 294-299.
Azolla pinnata as one of the aquatic weeds infesting water bodies in Assam.

639. RAMACHANDRAN, V. and RAMAPRABHU, T. Investigation on aquatic weed control with special reference to the use of chemicals. Paper presented at the FAO World Symposium on Warm-Water Pond Fish Culture, Rome, 1966. 17 p. Ref.

640. RICHARDSON, L. V. Water level manipulation: a tool for aquatic weed control. Hyacinth Contr. J. 13:8-11. Ref. 1975.

641. SCULTHORPE, C. D. The control of aquatic weeds. In His The Biology of vascular plants, p. 484-502, ill. New York: St. Martin's Pr., 1967.

642. SHARMA, K. P. and KULSHRESHTHA, S. D. On the utilization of aquatic weed and growth of white amur at different stages of life at Kota and Rawat-Bhata, India. Wiss. Z. Wilhelm-Pieck-Univ. Rostock Math.-Naturwiss. R. 26(2):153-156. Ref. 1977.
German, Russian, and French summaries.

643. SINGH, S. B., and others. Observations on the efficacy of grass carp, Ctenopharyngodon idella (Val.), in controlling and utilizing aquatic weeds in ponds in India. In Proc. Indo-Pacific Fishery Council, Honolulu, 1966, 12(II), p. 220-235. Ref. 1967.
K. K. Sukumaran, K. K. Pillai, and P. C. Chakrabarti, joint authors.

644. STANLEY, T. D. Some of Queensland's aquatic plants. Queensl. Agric. J. 104(4):xxiii-xxiv, ill. July/Aug. 1978.

645. The SUSCEPTIBILITY of aquatic weeds to herbicides. In British Crop Protection Council. Weed control handbook, 7th ed., v. 2, p. 254-259. Oxford: Blackwell, 1972.

646. SWARBRICK, J. T. Weed: herbicide guide. In His The Australian weed control handbook, 4th ed., p. 333-341. Toowoomba: Plant Press, 1979.

647. THOMAS, K. J. Observations on the aquatic vegetation of Trivandrum, Kerala. In Aquatic weeds in South East Asia; proc. of a Regional Seminar on Noxious Aquatic Vegetation, New Delhi, 1973, p. 99-102. Ref. The Hague: Junk, 1976.
Azolla pinnata.

648. U.S. OFFICE OF SCIENCE AND TECHNOLOGY. Economic damage caused by aquatic weeds (preliminary survey). Wash. D. C.: U. S. Agency for International Development, 1971. 13 p.

649. USE grass carp for weed control. Indian Farming 21(5):45-47, ill. Aug. 1971.

650. VARGHESE, T. J., DEVARAJ, K. V., and SHANTHARAM, B. Relative growth of the grass carp, Ctenopharyngodon idella (Val.), fed on Utricularia and a mixture of Azolla and Lemna. J. Inland Fish. Soc. India 8:206-211. Ref. 1976.

651. WALLS, F. Diquat - a new contact weedkiller. Agric. Gaz. N. S. W. 73(12):647-649, ill. Dec. 1962.

652. WHITTET, J. N. Weeds in irrigation channels and ditches. In His Weeds, p. 98-99. Sydney: Blight, 1958.

653. WILD, H. and MITCHELL, D. S. Effect of Bayluscide on the water fern Salvinia auriculata and other aquatic plants. Pflanzenschutz Nachr. Bayer 23(2):105-110. 1970.

654. WILLEY, R. G., DOSKOCIL, M. J., and LEMBI, C. A. Potential of the white amur (Ctenopharyngodon idella Val.) as a biological control for aquatic weeds in Indiana. Proc. Indiana Acad. Sci. 83:173-178. Ref. 1974.

655. YEO, R. R. Influence of water quality on toxicity of aquatic herbicides to certain plants and fish. (Abstract) In Abstracts of the Meeting of the Weed Society of America, Chicago, Ill., 1964, p. 107.
Azolla filiculoides Lam. subjected to aquatic herbicide treatment.

656. YONG, S. H. and GOH, A. K. Weeds in padi fields (Peninsular Malaysia). Kuala Lumpur: Crop Protection Branch, Dep. of Agriculture, 1977. 74 p.

657. ZON, J. C. J. van. The grasscarp in Holland. In Proc. International Symposium on Aquatic Weeds, Vienna, 1974, p. 128-133. Ref. Vienna: European Weed Control Council, 1974?
French and German summaries.

658. ZON, J. C. J. van. Studies on the biological control of aquatic weeds in the Netherlands. In Proc. International Symposium on the Biological Control of Weeds, Montpellier, 1973, p. 31-38. 1974.

ANALYSIS AND COMPOSITION; NON-AGRONOMIC USES

659. ANCONA, H. L. Las lemnaceas y las larvas de los mosquitos. [Lemna and mosquito larvae.] An. Inst. Biol. Univ. Nac. Auton. Mexico 1(1):33-37, ill. 1930.

660. BECERRA, J., SAMMES, P. G., and SILVA, M. Anticancer agents. Some constituents of Azolla filiculoides Lam. Rev. Latinoam. Quim. 9(4):203. 1978.

661. BUCKINGHAM, K. W., and others. Nutritive value of the nitrogen-fixing aquatic fern Azolla filiculoides. J. Agric. Food Chem. 26(5):1230-1234. Ref. Sept./Oct. 1978.
S. W. Ela, J. G. Morris, and C. R. Goldman, joint authors.
Protein source for ruminants.

662. BUCKINGHAM, K., and others. Protein quality evaluation and proximate analysis of Azolla filiculoides. (Abstract) Fed. Proc. Fed. Am. Soc. Exp. Biol. 36(3):4802. Mar. 1977.
S. W. Ela, J. G. Morris, and C. R. Goldman, joint authors.
Paper presented at the 61st Annual Meeting of the Federation of American Societies for Experimental Biology, Chicago, Ill., 1977.

663. DANG KIM LUU. Domestic fowl feed production from Azolla. (Vietnamese) Agric. Sci. Technol. 58:615. Oct. 1966.

664. ISLAM, A. K. M. N. and MENDES, F. Proteins from Lyngbya-Majuscula and Azolla pinnata. Bangladesh J. Bot. 5(1/2):89-92. 1976.

665. MACGREGOR, M. E. The possible use of Azolla filiculoides as a deterrent to anopheline breeding. J. R. A. M. C. [Roy. Army Med. Corps] 34:370-372. 1920.

666. MASSOL, M. L'Azolla caroliniana contra les moustiques. [Azolla caroliniana against mosquitoes.] Bull. Mens. Acad. Sci. Lett. Montpellier 74/77:20-22. 1944/47 (pub. 1950).

667. SCULTHORPE, C. D. The aesthetic and economic value of aquatic vascular plants. In His The Biology of vascular plants, p. 503-522, ill. New York: St. Martin's Pr., 1967.

668. SINGH, P. K. and SUBUDHI, B. P. R. Utilize azolla in poultry feed. Indian Farming 27(10):37-39. Jan. 1978.

669. SMITH, J. B. Azolla vs. mosquitoes. Entomol. News 21(10):437-441. Dec. 1910.

670. SUBUDHI, B. P. R. and SINGH, P. K. Nutritive value of the water fern Azolla pinnata for chicks. Poult. Sci. 57(2):378-380. Ref. Mar. 1978.

671. T'AN, C. C. Study on the natural enemies of culicid larvae and their role in mosquito control. Sinensia 13: 69-88. 1942.

Author Index

A

Abdulkadir, S. 1
152 153
502 - 504
Abe, C. 596a
Abrams, L. 248
Agarwal, A. 493
Agricultural Institute of Wenzhou 44
Ahmad, G. D. 127 - 129
Akademiia Nauk SSSR. Botanicheskii Institut 249
Alexander, M. 494
Alimagno, B. V. 586
Allan, H. H. 250
Allan, M. 597
Allen, G. E. 615
Allen, M. B. 130
Allison, F. E. 131
Ambasht, R. S. 428
Ancona, H. L. 659
Anderson, K. 559
Antonielli, M. 429
App, A. 2 494
Apte, S. K. 232
Arnold, C. A. 252 253
Ashton, P. J. 132 - 134
Asthana, M. 229
Audia, W. V. 598
Avena, G. C. 254 430

B

Bacon, P. E. 498
Bai, K. Z. 45
135 136
Baker, J. van 260
Balandreau, J. P. 137
Baldensperger, J. 4
Barbour, M. G. 261
Barlowe, W. C. 170
Baron, W. M. M. 138
Becerra, J. 660
Becking, J. H. 5 6
139 - 143
Bell, P. 7 46
Benedict, R. C. 144 431
Bennett, F. D. 599 600
Benson, L. 262
Bentham, C. 263
Bergad, R. D. 79
264 - 266
311
Beringer, J. E. 8
Berja, N. S. 163 586
Bernard, C. 432
Bertelsen, F. 267 268
Bhat, P. K. 145
Bhatt, D. C. 178
Bhuiyan, B. R. 638
Bill, S. M. 601
Bir, S. S. 269
Birkenbeil, H. 270
Biswas, K. 433
Black, J. M. 271
Blackburn, R. D. 602
Blasi, C. 254 430
Bold, H. C. 47 146
Bond, G. 147 148
Bonde, E. K. 162
Bonetto, A. A. 434
Bongers, J. M. 48
Bonnet, A. L. M. 49
Bortels, H. 149
Bottari, F. 150
Bottomley, W. B. 151
Bouldin, D. R. 2
Bower, F. O. 50 51
Bowmer, K. H. 603
Braemer, P. 500 501
Breen, C. M. 244
Brenkert, A. L. 448
Brezney, O. 604
Brill, W. J. 9
Bristow, J. M. 272
Britton, C. E. 286
Brotonegro, S. 152 153
502 - 504
Brown, J. M. A. 435
Brunker, J. P. 273
Buckingham, K. W. 661 662
Bui, G. D. 505
Bui Huy Dap 506 - 508
Bulla, L. A. 470
Burges, N. A. 418
Burns, R. C. 154
Burris, R. H. 10 155

C

Cagiotti, M. R. 429
Callebaut, M. 58
Calvert, H. E. 156
Campbell, D. H. 52
Cardenas, J. 272
Cavins, J. F. 191
Chakrabarti, P. C. 643
Chandler, M. E. J. 383
Chandrasekharam, A. 416
Chapman, D. J. 157
Chapman, V. J. 157 435
Chateau, E. 273a
Chauveaud, M. G. 52a 53
Ghavan, A. R. 436
Chekiang Academy of Agricultural Sciences. Institute of Soils and Fertilizers 488 509
Chen, K. 510
Ch'en, K. T. 539
Chen, W. L. 135 201
Cheng, J. F. 158
Ch'eng, L. L. 561 578
Chermsiri, C. 558
Cherry, D. S. 468
Chevalier, A. 511
Chevmsiri, C. 557
Chokder, A. H. 606
Christ, D. K. 239
Christensen, C. 274
Churchill, J. R. 403
Clarkson, D. T. 112
Clausen, R. T. 275
Clegg, J. 437
Clowes, F. A. L. 54
Cohn, J. 159
Coker, R. E. 438
Colinvaux, P. A. 393
439 - 442

Collet, F. 344
Commonwealth Agricultural Bureaux 11
Cookson, I. C. 288
Copeland, I. C. 276
Correll, D. S. 278 - 280
339

Correll, H. B. 280
Cotthem, W. R. J. van 281
Cutter, E. G. 55

D

Daez, C. 494
Dagar, J. C. 145
Dale, D. 592
Dang Kim Luu 663
Dang Xuyen Nhu 195 196
Dao Chu 514
Dao The Tuan 515 - 517
577
629
Das, N. 60
Davies, D. A. 518
Day, J. M. 443
De Bolos, O. 494
De Datta, S. K. 282
De la Sota, E. R. 532
De Silva, R. S. Y. 160
Delwiche, C. C. 56 - 58
Demalsy, P. 650
Devaraj, K. V. 283 284
DeVol, C. E. 444
Dioni, W. 30
Dixon, H. M. 515
Do Anh 161
Dobereiner, J. 137
Dommergues, Y. R. 285
Dorofeev, P. I. 654
Doskocil, M. J. 286
Druce, G. C. 59
Dubois, M. F. W. 60 - 62
Duckett, J. G. 288 445
Duigan, S. L. 519
Dumont, R. 63
Duncan, R. E. 289
Duncan, W. H. 162
Dusek, W. A. 607
Duthu, G. S.

E

Eames, A. J. 64
Edwards, D. J. 608 609
Eeden, F. van 290
Ela, S. W. 661 662
Erd, K. 291
Erdtman, G. 65
Esau, K. 66 67
Espinas, C. R. 163 521
586
Evans, A. M. 291a
Evans, H. J. 181
Evans, W. R. 206 210
239

F

Fahn, A. 68
Fassett, N. C. 292
Fay, P. 165 166 522
Ferakova, V. 293
Fjerdingstad, E. 12
Flint, L. H. 164
Florida. Bureau of Aquatic Plant Research and Control 610

Florschutz, F. 294 - 297
Fogg, G. E. 165 166
522
Follieri, M. 300 301
Fosberg, F. R. 302 523
Fowler, K. 69 303
France. Centre Technique du Genie Rural des Eaux et des Forets, Groupement de Bordeaux. Section Qualite des Eaux, Peche et Pisciculture 611
612
Frank, P. A. 30
French, J. E. 304
Frye, T. C. 13
Fujiwara, A. 272
Fullerton, T. M. 305
Fulvio, T. E. di 613
Funderburk, H. H., Jr.

G

Gangstad, E. O. 366 461a
Garcia Novo, F. 306
Gay, P. A. 307
Gibbs, R. D. 308
Gibson, A. H. 167
Gigineishvili, P. L. 524
Godfrey, R. K. 70
Godwin, H. 309
Goh, A. K. 656
Goldman, C. R. 661 662
Gomez P., L. D. 589
Goodale, A. S. 403
Goodwin, R. H. 403
Gopal, B. 168 326
Gopalakrishnan, R. 614
Govindarajan, K. 525
Grabandt, R. A. J. 71
Gray, A. 310
Gregor, M. J. F. 169
Griffith, W. 14
Grigarick, A. A. 593
Grigg, E. W. 403
Grilli, M. 72
Groenhart, M. G. 478
Gunning, B. E. S. 73 - 78
83 84
Gunning, G. E. 446 447

H

Habeck, D. H. 591 615
Hall, J. W. 79 - 81
264 265
311 - 318
331
Hall, S. A. 319
Haller, W. T. 170
Handayani, T. 590
Hannig, E. 82
Hardham, A. R. 74 - 76
78 83
84
Hardy, R. W. F. 15 154
526
Harris, S. K. 403
Haupt, A. W. 85
Havelka, U. D. 15
Hay, A. 16
Heckman, C. W. 320
Heddy, S. 616
Heimans, J. 320a 321
Henshaw, S. 322

Herman, A. 193
Herman, A. I. 194
Herter, G. 323
Herzog, R. 324
Heywood, V. H. 418
Hill, D. J. 171 172
Hill, S. 34
Hills, L. V. 122
123 325
326 367
412 - 414
483
Hiltermann, H. 327
Hogeweg, P. 448
Holst, R. W. 173 - 175
Holttum, R. E. 17
Hooker, W. J. 328
Hoover, S. R. 131
Houk, R. D. 70
Hove, C. van 176
Howard-Williams, C. 449
Howell, J. T. 329
Huang, C. Y. 18
Huffaker, R. C. 549
Hughes, J. E. 74 - 76
78
Huneke, A. 177
Hurghisiu, I. 450
Hutchinson, G. E. 451
Huynh Ngoc Thach 195 196
Hylander, C. J. 330

I

Ikeda, F. 579
Inamdar, J. A. 178
Indonesia. Lembaga Biologi Nasional 527
International Institute of Tropical Agriculture 19
International Rice Research Institute 20 21
528
International Rice Research Institute. Dept. of Soil Microbiology 22
Iordanov, D. 456
Isichei, A. O. 233
Islam, A. K. M. N. 617 664

J

Jaeger, P. 452
Jain, R. K. 331 332
Jara, M. B. 23
Jha, U. N. 458
Jia Shan County. Tai Yun Commune. Agricultural Technique Station 489
Johansen, D. A. 179 180
Johnson, G. V. 181
Johnston, A. W. B. 8
Jones, G. N. 333
Jones, M. G. K. 86
Jordanov, D. 334
Joy, P. J. 614
Junk, W. J. 449

K

Kachroo, P. 24 25
87
Kanareugsa, C. 557 558
Kang, C. 185
Kannaiyan, S. 525 529
530
Kapoor, R. K. 95 96
Karamyshev, V. P. 531
Kaul, R. B. 88
Kaushik, B. D. 556
Kawamatu, S. 89 - 93
Keck, D. D. 364
Kefeli, V. T. 182
Kelly, M. R. 335
Kempf, E. G. 336
Kempf, E. K. 93a 94
Khare, L. J. 618
Khare, V. S. 453
Kieser, G. 454
Kilgen, R. H. 607
King, L. J. 619
Kleinschmidt, H. E. 620
Klinkenberg, A. 337
Knobloch, E. 455
Knobloch, I. W. 338
Knopf, K. W. 591
Knowlton, C. H. 339
Ko, S. A. 539
Kochev, H. 334
Kochev, Kh. 456
Kodama, S. 596a
Konar, R. N. 95 96
Kornas, J. 340
Kornilova, V. S. 341
Krishnamurthy, G. S. R. 556
Kulasooriya, S. A. 532 533
Kulshrestha, S. D. 642
Kummerle, J. B. 342
Kyle, E. 244

L

La Xuan Dinh 534
Lahdesmaki, P. 183
Lahser, C. W. 621
Lamarck, J. B. P. A. M. 343
Lamborg, M. R. 535
Lamp, C. 344
Lang, N. J. 97 622
Lange, L. de 108
Lawalree, A. 345
Lawrence, G. H. M. 346
Lawrence, J. M. 623 624
Le Van Kan 536
Le Van Liem 26
Le Van Quy 195
Learmonth, N. F. 347
Leavitt, R. G. 98
Lee, K. K. 584
Leenhouts, P. W. 363
Lembi, C. A. 654
Levine, N. J. 106
Lewis, W. M. 446
Limberger, A. 99
Lin, H. H. 561
Lin, J. K. 185
Lin, L. P. 184
Liu, C. C. 185 537
538
Lough, S. M. 207
Loyal, D. S. 100 101
Lu, S. Y. 539
Lui, S. 510
Lumpkin, T. A. 102 490
540
Lundell, C. L. 348

M

MacGregor, M. E. 665
McGregor, R. L. 349
McLaren, J. P. 457
Mahabale, T. S. 350

Mall, L. P. 145
Manson, B. E. 626
Marsh, A. S. 351 352
Marsili, A. 150
Martin, A. R. H. 103 353
Martin, W. 354
Marx, J. L. 186
Masclans, F. 443
Massol, M. 666
Matthew, C. G. 355
Matthews, L. J. 625 - 627
Maxon, W. R. 356
Mayberry, D. H. 187
Mayeaux, P. A. 181
Mayne, B. C. 188
202 - 204
213 215
216 217
239 240
Mehta, I. 604
Mendes, F. 617 664
Merlier, H. 628
Mettenius, G. 356a
Meyen, F. J. F. 27
Mickel, J. T. 104 357
Millbank, J. W. 189 190
Mimbar, S. M. 616
Mirashi, M. V. 358 359
Mishustin, E. N. 541 542
Misra, G. 629
Misra, R. 458 459
Mitchell, D. S. 28
460 461
630 - 632
653
Mitra, E. 633
Mohlenbrock, R. H. 360
Moore, A. W. 29 30
Morandi, C. 559
Morelli, I. 150
Morris, H. J. 131
Morris, J. G. 661 662
Muenscher, W. C. 361
Muenscher, W. R. 362
Mulay, B. N. 371
Muller, J. 363
Munz, P. A. 364

N

Nakagawa, K. 596a
Nakai, T. 365
Nasu, T. 395
Nawawi 616
Nelson, M. L. 366 461a
Newton, J. W. 191 - 194
462
Ngo Gia Dinh 544
Nguyen Cong Huan 491 545
Nguyen Cong Tieu 491 546
Nguyen Hoang Tinh 196
Nguyen Huu Thuoc 195 196
Nguyen Ngoc Xuan 547
Nguyen Nhu Khanh 197
Nguyen Quoc Thong 196
Nickell, L. G. 198 199
Nicolson, D. H. 315
Nitayangkura, S. 105

O

Oes, A. 31
O'Cara, F. 559
Ogunyomi, O. 367
Ohtani, S. 463
Olsen, O. 464
Oosthuizen, G. J. 634
Ooststroom, S. J. van 32
Ornes, W. H. 200
Ostenfeld, C. H. 368
Ott, F. D. 369
Oumarov, M. M. 137

P

Pacchiani, M. 150
Pagan, J. D. 167
Pai, K. C. 201
Palmer, W. E. 370
Pandit, B. R. 371
Paradkar, S. A. 372
Pari, A. 574
Patel, R. C. 178
Patnaik, S. 635
Peters, G. A. 106
156 188
202 - 217
239 240
Peterson, N. F. 373
Petrik-Ott, A. J. 369
Pfeiffer, W. M. 107
Phillips, D. A. 549
Pichi-Sermolli, R. E. G. 374
Pieterse, A. H. 108 636
637
Pillai, K. K. 643
Planchais, N. 375
Poole, R. E. 239
Postgate, J. 33
Postgate, J. R. 34
Potter, D. 403
Prasad, A. K. S. K. 60 61
Preston, W. H. 598
Price, M. G. 376 377
Pulle, A. 379

Q

Queva, C. 109

R

Raciborski, M. 380
Radhakrishnan, S. 638
Rains, D. W. 238
549 - 552
576
Rajan Asari, P. A. 592
Ramachandran, J. 553
Ramachandran, M. 525
Ramachandran, V. 639
Ramaprabhu, T. 639
Ranwell, D. S. 465
Rao, H. S. 110 391
Raveed, D. 106
Ray, T. B. 188
202 213
215 - 217
Reed, C. F. 381 382
Reid, E. M. 383
Reid, G. K. 466 467
Reinert, G. W. 70
Ren, T. G. 185
Renlund, R. N. 159
Reynaud, P. A. 469
Rhodes, D. 218

Rice Research Station, Pattambi 554
Richardson, L. V. 640
Richerson, P. J. 593
Ridley, H. N. 384 - 387
Rinaudo, G. 137
Ripley, W. S., Jr. 339
Robards, A. W. 77 111
112
Rochow, M. von 388
Rodgers, G. A. 113 235
Rodgers, J. H., Jr 468
Roger, P. A. 469
Ronderos, R. A. 470
Rosario, D. C. del 163
Rossbach, G. B. 403
Rosso de Ferradas, B. 471
Rowell, P. 232
Roychoudhury, P. 556
Rubeca, L. 254 430
Rzedowski, J. 472

S

Sabnis, S. D. 436
Sadebeck, R. 389
Sahni, B. 390 391
Salisbury, E. 392
Sammes, P. G. 660
Sampaio, M. J. 233
Sanford, S. N. F. 403
Santiago, T. 494
Sasi, P. S. 594
Sasidharan, N. K. 594
Saubert, G. G. P. 219
Sawatdee, P. 557 558
Saxena, H. K. 243
Schaede, R. 220
Schaffner, M. 473
Schloemer, A. 114
Schnack, J. A. 474
Schofield, E. K. 393 440
441
Scott, D. B. 221
Scowcroft, W. R. 35 167
Sculthorpe, C. D. 115 - 117
222 394
475 476
641 667
Seaman, D. E. 366 461a
622
Seerwani, A. B. 477
Seetanun, W. 557 558
Segal, S. 36 118
478
Seto, K. 395
Seward, A. C. 396 - 400
Shanmugam, K. T. 559 560
Shannon, E. L. 223
Shantharam, B. 650
Shaparenko, K. K. 37
Sharma, K. P. 642
Sharma, P. C. 453
Sharma, V. K. 228
Shaver, J. M. 401
Shen, C. 224
Shen, G. H. 539
Shen, E. Y. F. 119 402
Sheng, C. 510
Shi, D. J. 136
Shih, S. L. 561
Shil'nikova, V. K. 542
Shimura, Y. 225
Shu, C. L. 561
Sierra F., J. 272
Silva, M. 660
Silva, R. S. Y. de 533
Silvester, W. B. 479 562
Singh, P. K. 236
237 492
563 - 572
595 668
670
Singh, R. N. 226 227
Singh, R. P. 228
Singh, S. B. 643
Singh, V. P. 145
Slodki, M. E. 192
Smith, G. M. 120
Smith, J. B. 669
Smith, L. B. 403
Sobochkin, A. A. 536
Sobolewska, M. 404 405
Soekartomo, S. 616
Soetono 616
Soni, S. L. 62
Sourek, J. 406
Srinivasan, S. 573 - 575
Srivastava, G. D. 480
Srivastava, S. K. 407
Srivastava, V. C. 229
Standley, P. C. 426
Stanley, T. D. 408 644
Steward, A. N. 409
Stewart, G. R. 218
Stewart, W. D. P. 113
165 166
230 - 235
522
Stough, J. B. 410
Strasburger, E. 38
Straus, A. 481
Subagyo, T. 596
Subramanian, D. 553
Subudhi, B. P. R. 236 237
668 670
Sud, S. R. 121
Sukumaran, K. K. 643
Sutton, D. L. 170
Suvatabandhu, K. 39
Svenson, H. K. 411
Swanson, N. P. 316
Swarbrick, J. T. 646
Sweet, A. R. 122 123
412 - 416
483
Syed, R. A. 590
Sylvester-Bradley, R. 233

T

T'ai, C. C. 578
Takahashi, J. 557 558
Talley, B. J. 576
Talley, S. N. 238 551
552 576
T'an, C. C. 671
Tandon, R. K. 480
Tang, J. M. 245
Terada, S. 225
Tewari, R. B. 417
Thomas, K. J. 647
Thomas, P. A. 631

Toia, R. E., Jr. 106 188 202 206 207 210 213 215 216 217 239
Toth, R. 62
Tran Quang Thuyet 40 516 517 577 578
Ts'ai, T. C. 13
Tsuboi, I. 135
Tsui, C. 579
Tsujimura, K. 579
Tsukamoto, K. 124
Tur, N. M. 418
Tutin, T. G. 240
Tyagi, V. V. S. 192
Tyler, D. D.

U

U.S. Office of Science and Technology 648

V

Valentine, D. H. 418
Valentine, R. C. 549 559 560
Van Vliet, J. P. 108
Varghese, T. J. 650
Vause, E. H. 241
Velichkevich, F. Yu. 419
Venkataraman, G. S. 242 243 556 581
Ventura, W. 494
Vo Minh Kha 40
Vyas, L. N. 482

W

Wagner, W. H., Jr. 420
Walker, S. 60
Wall, J. H. 483
Wallace, D. H. 588
Walls, F. 651
Walmsley, R. D. 132 244
Walsby, A. E. 165 166 522
Walter, H. 484
Walters, M. M. 634
Walters, S. M. 418
Wang, S. Z. 158
Wardlaw, C. W. 124a 125
Watanabe, I. 2 163 494 521 582 583 584 585 586
Weatherby, C. A. 339
Webb, D. A. 418
Weiner, N. 325
Weldon, L. W. 602 624
Wen, C. H. 561
Wen, Y. H. 245
West, R. G. 421
Westlake, D. F. 485
Wetter, C. 422
Whitney, A. S. 246
Whittet, J. N. 652
Wild, H. 653
Wildemann, L. 247
Willey, R. G. 654
Williams, E. G. 423 424
Wilson, D. B. 425
Wilson, K. I. 594
Wittwer, S. H. 41 42 587
Witty, J. F. 518
Woodcock, C. 7 46
Wooton, E. O. 426

X

Xu, S. X. 158

Y

Yabe, Y. 427
Yang, S. Y. 135 201
Yasui, K. 427
Yeo, R. R. 655
Yong, S. H. 656
Yopp, J. H. 174
Yoshida, F. 13
Yoshida, T. 43
Yu, L. H. 126
Yu, S. L. 45 135 136 201

Z

Zapte C., H. 485a
Zobel, R. W. 588
Zon, J. C. J. van 657 658
Zwolfer, H. 599

Keyword Index

A

Abiological and biological research on the problem of providing fixed nitrogen/Potential impact of 526
Acetylene reduction, and H_2 production/$^{15}N_2$ fixation, 207
Acetylene reduction in the Azolla-Anabaena symbiosis/Action spectra for photosynthesis and 215
Acetylene reduction in the Azolla-Anabaena symbiosis/Photosynthesis and 188
Acetylene reduction/Localization of nitrogenase activity as assayed by 204
Acetylene reduction/A measure of nitrogen fixation activity of Azolla imbricata by 245
Acid, and maleic hydrazide on Azolla mexicana/Effect of gibberellic acid, indoleacetic 162
Acid, indoleacetic acid, and maleic hydrazide on Azolla mexicana/Effect of gibberellic 162
Acids in the leaves of Salvinia natans and Azolla filiculoides grown in light and dark/Free amino 183
Adaptations of Anabaena in the Azolla-Anabaena azollae symbiosis/Ecology and physiological 140
Africa, in connection with studies for control by insects/Distribution of Salvinia and Azolla in South 382
Age determination of interglacial freshwater deposits in the Netherlands/Azolla and the 298
Age-related and origin-related control of the numbers of plasmodesmata in cell walls of developing Azolla 73
Agent preferable to sulfurous acid after the Feulgen nucleal reaction/Plain water as a rinsing 58
Agricultural productivity/Nitrogen fixation and 42
Agriculture and prospects of utilizing nitrogen fixing blue-green algae in agriculture/Biological nitrogen 541
Agriculture for the 21st century 41
Agriculture/Biological nitrogen fixation in agriculture and prospects of utilizing nitrogen fixing blue- 541
Agriculture/Latest technology in 553
Agronomic significance of Azolla-Anabaena symbiotic nitrogen fixation/Biology and 492
Agronomic significance/Azolla: Biology and 29
Agronomist/Symbiotic and nonsymbiotic nitrogen fixation as viewed by an 246
Alberta, Canada/Azolla from the Upper Cretaceous Edmonton formation, 407
Alberta, Canada/Late Cretaceous Milk River area southern 367
Alberta/Paleoecology of the Bearpaw and contiguous Upper Cretaceous formations in the Canadian Pacific Oil 483
Alberta/Vegetative remains of Azolla schopfii Dijkstra from Genesee, 416
Alfalfa and Azolla/The experiment on effect of ammonia molybdate on the productivities of 489
Alga-free Azolla and Anabaena azollae/Isolation and pure culture of 135
Alga-free Azolla, isolation of Anabaena azollae and preliminary attempt at their association/Cultivation 201
Alga from Azolla/Isolation of a blue-green 193
Alga, Nostoc muscorum/Physiological studies with the nitrogen-fixing 131
Alga relationship in Azolla filiculoides/Aspects of the fern- 244
Algae Anabaena azollae/Heterocyst spacing in the symbiotic blue-green 237
Algae and algal associations/Blue-green 212
Algae and Azolla application on the aggregation status of the soil/Effect of blue-green 556
Algae and Azolla/Nitrogen economy of rice soils in relation to nitrogen fixation by blue-green 568
Algae (cyanobacteria), possible biological indicators of stratospheric ozone depletion/Effect of 192
Algae fix nitrogen in rice bays 498
Algae in agriculture/Biological nitrogen fixation in agriculture and prospects of utilizing nitrogen 541
Algae [in] enhancing crop production/The role of blue-green 535
Algae in rice soils of Sri Lanka and their potential as a fertilizer in rice cultivation/Nitrogen fixing 533
Algae in the leaf of Azolla imbricata Nakai/Electron microscope observations on blue-green 89
Algae in tropical rice cultivation/The role of blue-green 581
Algae of Anthoceros, Blasia and Peltigera/Studies on the symbiotic blue-green 235
Algae of Lake Trasimeno and the variability of pigment content in Spirogyra/Presence of chlorophyllide 429
Algae of temperate and tropical soils/Nitrogen fixation by soil 233
Algae to fertilize Indian rice paddies/Blue-green 493
Algae with other organisms/Associations of blue-green 230
Algae/Analysis of Azolla and its symbiosis with blue-green 220
Algae/Associations with blue-green 189
Algae/A botanical ramble among the blue-green 231
Algae/Cellular physiology and the ecology of N_2-fixing blue-green 232
Algae/The ecology of nitrogen fixation by 522
Algae/Economic aspects of 146
Algae/Nitrogen fixation by blue-green 542
Algae/On biological nitrogen fixation in nature, particularly in blue-green 464
Algae/Photosynthetic nitrogen fixation by blue-green 130
Algae/The procaryotic 7
Algae/Rice savants 'discover' blue-green 23
Algae/Studies on nitrogen fixation by blue-green 242
Algaecides on aquatic plant/The effects of several 598
Algal associations/Blue-green algae and 212
Algal associations/Contribution of plant- 139
Algal associations/Mycorrhizal and 33
Algal symbiont as green manure in rice cultivation/Multiplication and utilization of fern "Azolla" 567
Algal symbiotic system/Photoproduction of molecular hydrogen by a plant- 462
Alipathic and triterpenoid hydrocarbons from ferns 150
Alwar and environs/A study of hydrophytes and marsh plants of 482
Amazonian aquatic macrophytes with special reference to their role in the ecosystem/The chemical 449
America and Africa, in connection with studies for control by insects/Distribution of Salvinia and 382
America and Trinidad/Exploration for natural enemies of water hyacinth in northern South 599
America/New late Cretaceous palynomorphs from southern South 410
America/Palynomorphs from South 410

America/Uses of Azolla in North 552
American ferns/Notes on 356
American species of Azolla in Uruguay/The two 323
American species of Azolla with special reference to Azolla mexicana Presl./On the epispore of the 305
Amino acids in the leaves of Salvinia natans and Azolla filiculoides grown in light and dark/Free 183
Amino acids in the medium/Liberation of free 243
Ammonia-assimilating enzymes, protein, and chlorophyll between host and symbiont/Distribution of 216
Ammonia assimilation in N_2-fixing systems 221
Ammonia assimilation in the Azolla-Anabaena azollae symbiotic association/Levels of chlorophyll, protein 217
Ammonia molybdate on the productivities of alfalfa and Azolla/The experiment on effect of 489
Amur at different stages of life at Kota and Rawat-Bhata, India/On the utilization of aquatic weed and 642
Amur (Ctenopharyngodon idella Val.) as a biological control for aquatic weeds in Indiana/Potential of 654
Anabaena association morphological and physiological studies/The Azolla- 202
Anabaena association/Nitrogen fixation by Azolla- 20
Anabaena azolla symbiosis/Altered nitrogenous pools induced by the Azolla- 191
Anabaena azollae and its host Azolla pinnata 119
Anabaena azollae and preliminary attempt at their association/Cultivation of alga-free Azolla, isolation 201
Anabaena azollae living on the leaves of Azolla caroliniana/Internal structure of 72
Anabaena azollae relationship/The Azolla, 106 203 - 207
Anabaena azollae relationship/An ultrastructural study of the Azolla, 62
Anabaena azollae Strasburger/Electron microscopic study of heterocyst development in 97
Anabaena azollae symbiosis: nitrogenase-catalyzed reactions/The Azolla- 210
Anabaena azollae symbiosis/The Azolla- 208 209
Anabaena azollae symbiosis/Azolla africana 19
Anabaena azollae symbiosis/Ecology and physiological adaptations of Anabaena in the Azolla- 140
Anabaena azollae symbiosis/Studies of the growth and nitrogen metabolism of the Azolla mexicana- 175
Anabaena azollae symbiosis/Studies on the Azolla 214
Anabaena azollae symbiotic association/Levels of chlorophyll, protein and enzymes of ammonia 217
Anabaena azollae/Heterocyst spacing in the symbiotic blue-green algae 237
Anabaena azollae/Isolation and pure culture of alga-free Azolla and 135
Anabaena azollae/Nitrogen fixation by 242
Anabaena complex as a nitrogen fertilizer for rice/Utilization of the Azolla- 586
Anabaena complex as fertilizer in paddy soil/Potentiality of nitrogen fixing Azolla- 521
Anabaena in the Azolla-Anabaena azollae symbiosis/Ecology and physiological adaptations of 140
Anabaena in the Azolla-Anabaena symbiosis/The pattern of development of 171
Anabaena in the Azolla-Anabaena symbiosis/The role of 172
Anabaena relationship/Azolla- 216
Anabaena symbiont/The aquatic fern Azolla and its 132
Anabaena symbiosis: morphology and physiology/The Azolla- 211
Anabaena symbiosis relevant to physiological interaction/New morphological observations on the Azolla 156
Anabaena symbiosis/Action spectra for photosynthesis and acetylene reduction in the Azolla- 215
Anabaena symbiosis/Azolla africana- 19
Anabaena symbiosis/Effect of light quantity, osmotic stress, temperature and pH on nitrogen fixation 174
Anabaena symbiosis/The pattern of development of Anabaena in the Azolla- 171
Anabaena symbiosis/Photosynthesis and acetylene reduction in the Azolla- 188
Anabaena symbiosis/Physiology and biochemistry of the Azolla- 213
Anabaena symbiosis/The role of Anabaena in the Azolla- 172
Anabaena symbiotic nitrogen fixation/Biology and agronomic significance of Azolla- 492
Anabaena variabilis status azollae 12
Anabaena with Azolla/On the issue of the symbiosis of 99
Anabaena/Contributions to the information of symbioses between Azolla and 177
Anabaena/Further contribution to the symbiosis of Azolla and 247
Analysis of Nostoc-Bryophyte relationship/A cytological 60
Analytical classification of the Middle Pleistocene in the German Democratic Republic/Pollen- 291
Anatomical observations on floating leaves 88
Anatomical studies on Azolla pinnata 95
Anatomical study/Azolla filiculoides Lam.: 109
Ancient ferns 252
Anglia/Pollen analyses of the Cromer Forest bed series in East 445
Anikshchai in the Lithuanian SSR/New data on the flora of the Shlave-2 layer near 419
Animal feed and as green manure for rice fields/The cultivation of Azolla for 511
Animals/Life in the lake: plants and lower 438
Anopheline breeding/The possible use of Azolla filiculoides as a deterrent to 665
Antarctica/Cretaceous and Tertiary dinoflagellates from Seymour Island, 319
Anthoceros and Blasia and the heterosporous fern Azolla/Ultrastructural studies on the blue-green algae 61
Anthoceros, Blasia and Peltigera/Studies on the symbiotic blue-green algae of 235
Anthocyanins of Azolla 173
Anticancer agents 660
Apex of Pteridophytes/Shoot 68
Apex/Vegetative shoot 67
Apical cell and its derivative in the root of Azolla filiculoides Lam./Cell cycle studies of the 105
Apical cells/Roots with 54
Apical meristems 66
Apices/The histological organization of root 125
Apices/Morphogenesis and microtubules in Azolla root 76
Application of N fertilizer/Effect of Azolla on the yield of paddy with and without 566
Applications/The nitrogen nutrition of rice starting with atmospheric nitrogen: researches and practical 4

Applied/Nitrogen fixation: basic to 9
Aquarium studies on the selectivity of 16 aquatic plants as food by fingerling hybrids of the cross between 607
Aquatic communities 466
Aquatic environment/The growth of Hydrophyte communities and their interaction with the 475
Aquatic epiphytes/New cases of 124
Aquatic fern Azolla and its Anabaena symbiont 132
Aquatic fern Azolla filiculoides/Nutritive value of the nitrogen-fixing 661
Aquatic fern, Azolla, in the deposits of Chegan formation 341
Aquatic fern, Azolla/Isolation of cyanobacteria from the 194
Aquatic ferns of Taiwan 284
Aquatic ferns/The leaf architecture and vasculature in some 101
Aquatic flora of a stream and swamp drainage system/Ash basin effluent impact on the 468
Aquatic, freshwater and salt marsh plants - case histories and ecological effects/Introduced 465
Aquatic herbicides to certain plants and fish/Influence of water quality on toxicity of 655
Aquatic macrophytes with special reference to their role in the ecosystem/The chemical composition of Central 449
Aquatic macrophytes/Effects of salinity on growth of several 170
Aquatic macrophytes/Principles on structure, zonation and succession of 36
Aquatic plant/The effects of several algaecides on 598
Aquatic plants as food by fingerling hybrids of the cross between male Ctenopharyngodon idella [grass carp] 607
Aquatic plants observed in northeast Thailand and Laos according to type, common name and scientific neme 366
Aquatic plants of Queensland 408
Aquatic plants/Effect of Bayluscide on the water fern Salvinia auriculata and other 653
Aquatic plants/Plants of the water-side and the larger 437
Aquatic plants/The production of root hairs by 223
Aquatic plants/Some of Queensland's 644
Aquatic plants/Studies on interspecific association of 145
Aquatic Pteridophytes/Certain aspects of the reproduction of 115
Aquatic vascular plants/The aesthetic and economic value of 667
Aquatic vascular plants/The salient features of 476
Aquatic vegetation 611
Aquatic vegetation in fish ponds at Cuttack/Control of some 635
Aquatic vegetation in India, the Netherlands and Czechoslovakia/Structure of vegetation: a comparison of 448
Aquatic vegetation of Trivandrum, Kerala/Observations on the 647
Aquatic weed and growth of white amur at different stages of life at Kota and Rawat-Bhata, India/On the 642
Aquatic weed control 625
Aquatic weed control in fish ponds 623
Aquatic weed control with special reference to the use of chemicals/Investigation of 639
Aquatic weed control/Tilapia mosambica as a fish for 621
Aquatic weed control/Water level manipulation: a tool for 640
Aquatic weeds and their distribution in Chambal commanded area in Kota, Rajasthan 604
Aquatic weeds Eichhornia crassipes and Salvinia species, and their natural enemies in the neotropics 631
Aquatic weeds found in Guyana 251
Aquatic weeds in Indiana/Potential of the white amur (Ctenopharyngodon idella Val.) as a biological control 654
Aquatic weeds in man-made lakes 630
Aquatic weeds in ponds in India/Observations on the efficacy of grass carp, Ctenopharyngodon idella (Val.), 643
Aquatic weeds in the Netherlands/Studies on the biological control of 658
Aquatic weeds in the USA/Distribution and utilization research on tropical and subtropical 612
Aquatic weeds of Orissa - response of Pistia stratiotes L., Spirodela Polyrhiza Schleid and Ipomoea 629
Aquatic weeds of ponds in Assam, India 638
Aquatic weeds: perspectives for the tropics/Biological control of 636
Aquatic weeds (preliminary survey)/Economic damage caused by 648
Aquatic weeds Salvinia and Eichhornia 614
Aquatic weeds to herbicides/The susceptibility of 645
Aquatic weeds/The control of 641
Aquatic weeds/Control of tropical 637
Aquatic weeds/Effect of four herbicides on some 618
Aquatic weeds/Floating or generally non-rooted 28
Aquatic weeds/Identification of 624
Aquatic weeds/Lepidopterous insects as biological control agents of 615
Aquatics transported by birds, batrachians, etc./Portions of living 387
Araneus pentacantha Walckenaer in the savanna of Bolivia 485a
Argentina/Principal limnologic traits of northern 434
Argentina/Synopsis of the pteridophytes of the northwest of 282
Argentine Hydracarina/Notes about 471
Ariadnaesporites and glomerisporites, two Cretaceous megaspores of possible Salviniaceous affinity 311
Arrays in plant cells/Structure of cortical microtubule 84
Arrenuridae 471
Aseptic conditions/Physiological studies with Azolla under 198 199
Ash basin effluent impact on the aquatic flora of a stream and swamp drainage system 468
Assam, India/Aquatic weeds of ponds in 638
Association with the rice plant/Nonsymbiotic nitrogen fixation in flooded soils: 494
Association/Cultivation of alga-free Azolla, isolation of Anabaena azollae and preliminary attempt at 201
Association/Initial characterization of the 203
Association/Levels of chlorophyll, protein and enzymes of ammonia assimilation in the Azolla-Anabaena 217
Association/Morphological aspects of the 106
Association/Nitrogen fixation by Azolla-Anabaena 20
Associations of the soils of Lake Texcoco/Some plant 472

Associations with blue-green algae 189
Associations with eukaryotic plants/Nitrogen-fixing cyanobacteria and their 234
Associations/Blue-green algae and algal 212
Associations/Contribution of plant-algal 139
Associations/Lower plant 190
Associations/Mycorrhizal and algal 33
Asymbiotic N_2 fixation in paddy soils 137
Atmospheric nitrogen: researches and practical applications/The nitrogen nutrition of rice starting with 4
Atmospheric nitrogen/Ecological-hydrobiological study on irrigated rice fields in relation to the fixation 5
Atrazine herbicide/The effects of soil type and temperature on persistence of 603
Australia/The occurrence of Azolla filiculoides L. and associated vascular plants in a Quaternary deposit 288
Australia/The water weed problem in 601
Autecology of Trapa bispinosa Roxb./A study of the 480
"Auximone"/The growth of Azolla filiculoides in mineral solution without addition of 128
Axis from the Deccan intertrappean beds of India/Rhizomites dakshini gen. et sp. nov. a new pteridophytic 372
Azolla africana-Anabaena azollae symbiosis 19
Azolla africana in the Sahelian zone (Senegal)/First information on the ecology of 469
Azolla caroliniana against mosquitoes 666
Azolla caroliniana-Anabaena symbiosis relevant to physiological interaction/New morphological observations 156
Azolla caroliniana in Maryland 381
Azolla caroliniana/Internal structure of Anabaena azollae living on the leaves of 72
Azolla caroliniana/Notes on 159
Azolla caroliniana/Observations on microscopic material of 70
Azolla caroliniana Willd. 322
Azolla caroliniana Willd., a naturalized exotic, new in the flora of Latium (Italy) 254
Azolla caroliniana Willd. in central New York 356
Azolla caroliniana Willd. in Georgia 289
(Azolla caroliniana Willd.) in Tennessee/The mosquito fern 401
Azolla caroliniana Willd., Salvinia Rotundifolia Willd., Spirodela Polyrhiza L. Schleid., Ceratophyllum 200
Azolla caroliniana Willd. under ultra-violet radiation/Behavior of 164
Azolla caroliniana Willd./Azolla filiculoides Lam. and 59
Azolla caroliniana Willd./Notes on 286
(Azolla caroliniana Willd.)/Water fern - 610
Azolla filiculoides as a deterrent to anopheline breeding/The possible use of 665
Azolla filiculoides grown in light and dark/Free amino acids in the leaves of Salvinia natans and 183
Azolla filiculoides in Italy and Japan 342
Azolla filiculoides in mineral solution without addition of "auximone"/The growth of 128
Azolla filiculoides in Pleistocene freshwater clay layer of the Oosterbeek (Netherlands)/Occurrence of 260
Azolla filiculoides in the absence of combined nitrogen/A cobalt requirement for symbiotic growth of 181
Azolla filiculoides in the Ile river ecosystem near Strasbourg/Note on the behavior of 452
Azolla filiculoides in the interglacial deposit of Wunstorf at Hannover and the probable age of this 388
Azolla filiculoides in the Nordheimer Altrhein West Germany district 270
Azolla filiculoides L. and associated vascular plants in a Quaternary deposit in Melbourne/The occurrence 288
Azolla filiculoides Lam. 309 343
Azolla filiculoides Lam.: anatomical study 109
Azolla filiculoides Lam. and Azolla caroliniana Willd. 59
Azolla filiculoides Lam. from the Paludina clay of Berlin 294
Azolla filiculoides Lam. in county Wicklow 273
Azolla filiculoides Lam. in the older interglacial of Poland 404
Azolla filiculoides Lam. - newly introduced species in Czechoslovakia 406
Azolla filiculoides Lam.; Pacific or red Azolla 344
Azolla filiculoides Lam./Cell cycle studies of the apical cell and its derivative in the root of 105
Azolla filiculoides Lam./The effect of some environmental factors on the growth of 133
Azolla filiculoides Lam./Factors affecting the growth and development of 134
Azolla filiculoides Lam./Further notes on 423
Azolla filiculoides Lam./Further notes on the occurrence in Cheshire of 424
Azolla filiculoides Lam./Morphology and development of 71
Azolla filiculoides Lam./On the development of 52
Azolla filiculoides Lam./Researches on 49
Azolla filiculoides Lam./Salviniaceae: 272
Azolla filiculoides Lam./Some constituents of 660
Azolla filiculoides; new record in the lower Pleistocene of Central Italy 300
Azolla filiculoides on Long Island 275
Azolla filiculoides/Aspects of the fern-alga relationship 244
Azolla filiculoides/The cytology of sporangium development in 63
Azolla filiculoides/Effect of light intensity and temperature on the growth of 127
Azolla filiculoides/The formation of threads during the development of the periplasmodium to the perispore 48
Azolla filiculoides/Interrelationship between the compensation point, temperature coefficient and growth of 129
Azolla filiculoides/Nutritive value of the nitrogen-fixing aquatic fern 661
Azolla filiculoides/On a recent interpretation about the structure attributed to the root of 53
Azolla filiculoides/Protein quality evaluation and proximate analysis of 662
Azolla filiculoides/The spread of 394
Azolla filiculoides/A wild water fern, 114
Azolla geneseana, n. sp. and revision of Azolla primaeva 325
Azolla imbricata by acetylene reduction/A measure of nitrogen fixation activity of 245
Azolla imbricata Nakai/Electron microscope observations on blue-green algae in the leaf of 89
Azolla imbricata Nakai/Electron microscope observations on the leaf of 90

Azolla imbricata Nakai/Electron microscope observations on the root hair cell of 91
Azolla imbricata Nakai/On the granules in the root hair of 93
Azolla imbricata (Roxb.) Nakai in Tancheng county of Shandong province/The reproductive property of 45
Azolla imbricata (Roxb.) Nakai/Preliminary study on the red pigment appearing in 225
Azolla imbricata/Concerning 402
Azolla imbricata/Electronmicrographs on the plastids in the root of 92
Azolla imbricata/A simple method for the in situ nitrogen fixation measurement of 136
Azolla imbricata/The sporocarps and cultured young sporophytes of 158
Azolla intertrappea Sah. & H. S. Rao 390
Azolla intertrappea sp. nov. 391
Azolla japonica/Damage and control of 596a
Azolla japonica/A preliminary study of the nitrogen fixation of 224
Azolla mexicana-Anabaena azollae symbiosis/Studies of the growth and nitrogen-metabolism of the 175
Azolla mexicana Presl./On the epispore of the American species of Azolla with special reference to 305
Azolla mexicana/Effect of gibberellic acid, indoleacetic acid, and maleic hydrazide on 162
Azolla mexicana/Some insect interactions with 589
Azolla Montana, a Cretaceous megaspore with many small floats/Studies on fossil Azolla: 316
Azolla nilotica/The sporophyte of 56
Azolla pinnata 13
Azolla pinnata, a green manure crop in paddy fields/Study on the biological characteristics of 539
Azolla pinnata as a green manure/The use of 571
Azolla pinnata as a source of green manure/A preliminary study of the overwintering of 510
Azolla pinnata as affected by light and temperature conditions/The growth and photosynthesis of 196
Azolla pinnata as influenced by the trace elements Mn and Cu/The heat tolerance of 197
Azolla pinnata for chicks/Nutritive value of the water fern 670
Azolla pinnata in lowland rice soils/Decomposition of 503 504
Azolla pinnata in moist and flooded soil/Decomposition of 502
Azolla pinnata R. Br. 39
Azolla pinnata R. Br. on rice growth/The effect of 544
Azolla pinnata R. Br. to the productivity of temporary ponds at Varanasi/Contribution of 168
Azolla pinnata R. Br. under laboratory conditions/Growth rate of 229
Azolla pinnata R. Br./The effect of 2-Pyridylhydroxymethanesulfonic acid (PHMSA) on glycolate oxidase 195
Azolla pinnata R. Brown with remarks on the fossil history of the Hydropteridae/The structure and life 110
Azolla pinnata R. Brown/A study of 123
Azolla pinnata var. Africana (Desv.) 258
Azolla pinnata/Anabaena azollae and its host 119
Azolla pinnata/Anatomical studies on 95
Azolla pinnata/Effect of macronutrients and pH on the growth, nitrogen fixation and soluble sugar content 236
Azolla pinnata/Embryology of 96
(Azolla pinnata)/Growth and nitrogen fixation by Paku Air Tawar 153
Azolla pinnata/Growth and nitrogen-fixing activity of 152
Azolla pinnata/Incidence of Rhizoctonia Solani on 594
Azolla pinnata/A preliminary note on the structure of 121
Azolla pinnata/Proteins from Lyngbya-Majuscula and 664
Azolla primaeva and its phylogenetic significance 326
Azolla primaeva/Azolla geneseana, n. sp. and revision of 325
Azolla prisca 383
Azolla prisca from the Oligocene of the Isle of Wight/Megaspores and massulae of 303
Azolla rubra 627
Azolla schopfii Dijkstra from Genesee, Alberta/Vegetative remains of 416
Azolla tegeliensis in the ancient Pleistocene of the Netherlands/Electron microscopy of the megaspores 93a
Azollaceae 3 259
274 283
284 418
Azollopsis during the Upper Cretaceous and lower Tertiary/Evolution of Azolla and 414
Azollopsis in the Upper Cretaceous and Lower Tertiary/The taxonomy, evolution, and stratigraphic value 415
Azollopsis/A detailed study of the genus 412

B

B (280 to 320 nm) radiation on blue-green algae (Cyanobacteria), possible biological indicators of 192
Bacterial leaf symbiosis and nitrogen fixation 176
Banaue rice terrace soil and Pangil phosphorus-deficient oxisol/Nitrogen fixation in 528
Bands of microtubules in all categories of formative and proliferative cell division in Azolla roots 78
Banks Peninsula (eastern portion)/Pteridophytes of the 354
Baroda and environs/A study of the hydrophytes of 436
Basic to applied/Nitrogen fixation: 9
Batrachians, etc./Portions of living aquatics transported by birds, 387
Batrachians/Dissemination of Azolla by the 273a
Bayluscide on the water fern Salvinia auriculata and other aquatic plants/Effect of 653
Bearpaw and contiguous Upper Cretaceous formations in the Canadian Pacific Oil and Gas Strathmore Well, 483
Behavior of Azolla filiculoides in the Ile river ecosystem near Strasbourg/Note on the 452
Berlin/Azolla filiculoides Lam. from the Paludina clay of 294
Biocenology of the Camoebans from the floating vegetation in the Don Felipe Oxbow 444
Biochemistry of the Azolla-Anabaena symbiosis/Physiology and 213
Bio-fertilizers 499
Biological aspects of nitrogen fixation/Some 148

Biological characteristics of Azolla pinnata, a green manure crop in paddy fields/Study on the 539
Biological control agents of aquatic weeds/Lepidopterous insects as 615
Biological control of aquatic weeds in the Netherlands/Studies on the 658
Biological control of aquatic weeds: perspectives for the tropics 636
Biological fixation of nitrogen/The incidence and importance of 147
Biological indicators of stratospheric ozone depletion/Effect of ultraviolet-B (280 to 320 nm) radiation 192
Biological mosquito control method/Manatees as a naturalistic 457
Biological nitrogen fixation": genetic derepression of nitrogen-fixation genes -- relevance to increasing 8
Biological nitrogen fixation in agriculture and prospects of utilizing nitrogen fixing blue-green algae 541
Biological nitrogen fixation in cereals/Enhancing 520
Biological nitrogen fixation in nature, particularly in blue-green algae 464
Biological nitrogen fixation in soils of the tropics/Constraints to 2
Biological nitrogen fixation/Advances in 10
Biological nitrogen fixation/Control of 559
Biological nitrogen fixation/Enhancing 549
Biological productivity of inland waters with special reference to water-blooms 226
Biological research on the problem of providing fixed nitrogen/Potential impact of current abiological 526
Biology and agronomic significance of Azolla-Anabaena symbiotic nitrogen fixation 492
Biology and agronomic significance/Azolla: 29
Biology of Nymphula responsalis Wlk. attacking Salvinia spp./Some aspects of the 596
Biology of Samea multiplicalis/Life history and 591
Birds, batrachians, etc./Portions of living aquatics transported by 387
Birmingham/The Middle Pleistocene of north 335
Blasia and Peltigera/Studies on the symbiotic blue-green algae of Anthoceros, 235
Blasia and the heterosporous fern Azolla/Ultrastructural studies on the blue-green algae 61
Blue-green alga from Azolla/Isolation of a 193
Blue-green algae Anabaena azollae/Heterocyst spacing in the symbiotic 237
Blue-green algae and algal associations 212
Blue-green algae and Azolla application on the aggregation status of the soil/Effect of 556
Blue-green algae and Azolla/Nitrogen economy of rice soils in relation to nitrogen fixation by 568
Blue-green algae associated with the bryophytes anthoceros and Blasia and the heterosporous fern Azolla 61
Blue-green algae (cyanobacteria), possible biological indicators of stratospheric ozone depletion/Effect 192
Blue-green algae in agriculture/Biological nitrogen fixation in agriculture and prospects of utilizing 541
Blue-green algae [in] enhancing crop production/The role of 535
Blue-green algae in rice soils of Sri Lanka and their potential as a fertilizer in rice cultivation 533
Blue-green algae in the leaf of Azolla imbricata Nakai/Electron microscope observations on 89
Blue-green algae in tropical rice cultivation/The role of 581
Blue-green algae of Anthoceros, Blasia and Peltigera/Studies on the symbiotic 235
Blue-green algae to fertilize Indian rice paddies 493
Blue-green algae with other organisms/Associations of 230
Blue-green algae/Analysis of Azolla and its symbiosis with 220
Blue-green algae/Associations with 189
Blue-green algae/A botanical ramble among the 231
Blue-green algae/Cellular physiology and the ecology of N_2-fixing 232
Blue-green algae/Nitrogen fixation by 542
Blue-green algae/On biological nitrogen fixation in nature, particularly in 464
Blue-green algae/Photosynthetic nitrogen fixation by 130
Blue-green algae/Rice savants 'discover' 23
Blue-green algae/Studies on nitrogen fixation by 242 243
Bodega head California/Additions and corrections to the flora of 261
Bogs of the Galapagos Islands/Reconnaissance and chemistry of the lakes and 442
Bolivia/Araneus pentacantha Walckenaer in the savanna of 485a
Botanical ramble among the blue-green algae 231
Britain and in Europe/Azolla in 351
British Columbia/Tertiary Azolla from 253
British interglacial deposits/The occurrence of Azolla in 421
British Isles and in Europe generally/The history of the occurrence of Azolla in the 352
Bryophyte relationship/A cytological analysis of Nostoc- 60
Bryophytes anthoceros and Blasia and the heterosporous fern Azolla/Ultrastructural studies on the blue- 61
Buenos Aires)/Spatial and seasonal variations of the mesopleuston of the Yalca pond (Province of 474
Bulgaria and its change under the effect of humans and conservation/The macrophyte vegetation of the 456
Bulgaria/Materials and critical notes for the flora in 334

C

Cadmium (II) on Azolla caroliniana Willd., Salvinia Rotundifolia Willd., Spirodela Polyrhiza L. Schleid., 200
Cainozoic era 396
California rice culture/The use of Azolla as a source of nitrogen fertilizer for 550
California/Additions and corrections to the flora of Bodega head 261
Caloric values of hydrophytes at different vertical stratification 228
Camoeban taxocenoses in island basins in the Middle Parana River 444
Camoebans from the floating vegetation in the Don Felipe Oxbow/Biocenology of the 444
Canada/Azolla from the Upper Cretaceous Edmonton formation, Alberta, 407
Canada/Early Tertiary species of Azolla subg. Azolla sect. Kremastopora from western and arctic 413
Canada/Late Cretaceous Milk River area southern Alberta, 367
Canadian Pacific Oil and Gas Strathmore Well, Southern Alberta/Paleoecology of the Bearpaw and contiguous 483
Cap, and sheath of azolla/The root-hairs, 98
Carboniferous vegetation with some account of Permian floras/The later 399

Carp] and female Cyprinus carpio [Israeli common carp]/Aquarium studies on the selectivity of 16 aquatic 607
Carp, Ctenopharyngodon idella (Val.), fed on Utricularia and a mixture of Azolla and Lemna/Relative 650
Carp, Ctenopharyngodon idella (Val.), in controlling and utilizing aquatic weeds in ponds in India 643
Carp for weed control/Use grass 649
Carp in New Zealand/Weed preference and growth of young grass 609
Cell and its derivative in the root of Azolla filiculoides Lam./Cell cycle studies of the apical 105
Cell cortex in Azolla root-tip cells, and an hypothesis on the development of cortical arrays of 74
Cell cycle studies of the apical cell and its derivative in the root of Azolla filiculoides Lam. 105
Cell differentiation, and developmental changes in the meristem of Azolla roots/Formative and proliferative 75
Cell division in Azolla roots/Pre-prophase bands of microtubules in all categories of formative and 78
Cell divisions, cell differentiation, and developmental changes in the meristem of Azolla roots/Formative 75
Cell of Azolla imbricata Nakai/Electron microscope observations on the root hair 91
Cell walls of developing Azolla roots/Age-related and origin-related control of the numbers of plasmodesmata 73
Cells, and an hypothesis on the development of cortical arrays of microtubules/Evidence for initiation of 74
Cells, fixed in glutaraldehyde-osmium tetroxide/The length and disposition of cortical microtubules in 83
Cells/Roots with apical 54
Cells/Structure of cortical microtubule arrays in plant 84
Cells/Transfer 55
Cellular physiology and the ecology of N_2-fixing blue-green algae 232
Cenozoic megaspores of the water fern Azolla/Electron microscopy of the sporoderm on the 94
Central Amazonian aquatic macrophytes with special reference to their role in the ecosystem/The chemical 449
Central North Sea area/Azolla species from the Pleistocene of the 267
Ceratophyllum Demersum L., and Myriophyllum Spicatum L. var. Exalbescens (Fernald) Jepson grown in 10 or 200
Cereals/Enhancing biological nitrogen fixation 520
Chambal commanded area in Kota, Rajasthan/Aquatic weeds and their distribution in 604
Characeae of the Malay Peninsula/The fern-allies and 386
Characteristic features of rice growing in Vietnam/Some 507
Characteristics of Azolla pinnata, a green manure crop in paddy field/Study on the biological 539
Characterization of phycobiliproteins from the endophytic cyanobacterium of Azolla/Isolation and 240
Characterization of the association/Initial 203
Characterization of the symbiont/Studies on metabolic capabilities and a further 205
Characterizations and comparisons of five Azolla species: growth parameters/Initial 239
Chegan formation/Aquatic fern, Azolla, in the deposits of 341
Chemical composition of Central Amazonian aquatic macrophytes with special reference to 449
Chemical controls azolla red 605
Chemicals/Investigation on aquatic weed control with special reference to the use of 639
Chemicals/Rice without 555
Chemistry of the lakes and bogs of the Galapagos Islands/Reconnaissance and 442
Cheshire of Azolla filiculoides Lam./Further notes on the occurrence in 424
Chicken feed/Azolla fern plant rice fertilizer and 564
Chicks/Nutritive value of the water fern Azolla pinnata for 670
China, Azolla propagation and small-scale technology 512
China/Azolla in Kwangtung province, People's Republic of 540
China/The use of Azolla in rice production in 538
Chinese ferns/Enumeration of 355
Chinese science - genetics and plant improvement/Aspects of 35
Chlorophyll between host and symbiont/Distribution of ammonia-assimilating enzymes, protein, and 216
Chlorophyll, protein and enzymes of ammonia assimilation in the Azolla-Anabaena azollae symbiotic 217
Chlorophyllide in hydrophytes and algae of Lake Trasimeno and the variability of pigment content in 429
Classification of diazotrophs/Description and 154
Classification of plants 397
Clay layer of Oosterbeek (Netherlands)/Occurrence of Azolla filiculoides in Pleistocene freshwater 260
Clay of Berlin/Azolla filiculoides Lam. from the Paludina 294
Climate and the Galapagos Islands 439
Clovers from Extremadura/Four new 306
Cobalt requirement for symbiotic growth of Azolla filiculoides in the absence of combined nitrogen 181
Cobham, Kent/Upper Paleocene Salviniaceae from the Woolwich/Reading beds near 353
(Coleoptera: Curculionidae)/The life history of Stenopelmus rufinasus 593
Combination of Azolla and N-fertilization 575
Comparisons of five Azolla species: growth parameters/Initial characterizations and 239
Compensation point, temperature coefficient and growth of Azolla filiculoides/Interrelationship 129
Compost for rice cultivation/Azolla: a precious green 563
Compost/Azolla: a green 577
Conservation of Azolla in the warm season 491
Conservation/The macrophyte vegetation of the Danube waterbodies in Bulgaria and its change under the 456
Constraints to Azolla cultivation/Environmental 490
Constraints to biological nitrogen fixation in soils of the tropics 2
Control by insects/Distribution of Salvinia and Azolla in South America and Africa, in connection with 382
Control of Azolla japonica/Damage and 596a
Control of tropical aquatic weeds 637
Control of water fern with diesoline 634
Control/First report on pests of the fern Azolla and their 595
Control/Use grass carp for weed 649
Control/Weed identification and 627
Cortical arrays of microtubules/Evidence for initiation of microtubules in discrete regions of the cell 74
Cortical microtubule arrays in plant cells/Structure of 84

Cortical microtubules in plant cells, fixed in glutaraldehyde-osmium tetroxide/The length and disposition 83
Cretaceous and lower Tertiary/Evolution of Azolla and Azollopsis during the Upper 414
Cretaceous and lower Tertiary/The taxonomy, evolution, and stratigraphic value of Azolla and Azollopsis 415
Cretaceous and Tertiary dinoflagellates from Seymour Island, Antarctica 319
Cretaceous Azolla masula with large glochidia 264
Cretaceous Edmonton formation, Alberta, Canada/Azolla from the Upper 407
Cretaceous megaspores of possible Salviniaceous affinity/Ariadnaesporites and glomerisporites, two 311
Cretaceous Milk River area southern Alberta, Canada/Late 367
Cretaceous of Senegal/Some particular palynological aspects of the Upper 454
Cretaceous palynomorphs from southern South America/New late 410
Cretaceous period 398
Cretaceous Salviniaceae 312
Cretaceous Salviniaceous megaspores/A critical study of three 79 265
Cretaceous/A new genus of Salviniaceae and a new species of Azolla from the late 313
Cretaceous/Studies on fossil Azolla: primitive types of megaspores and massulae from the 317
Cromer Forest bed series in East Anglia/Pollen analyses of the 445
Cromer-Forest bed series/Notable plant records from the 425
Crop in paddy fields/Study on the biological characteristics of Azolla pinnata, a green manure 539
Crop on rice yields in northeastern Thailand/Effect of Azolla as a green manure 558
Crop production/The role of blue-green algae [in] enhancing 535
Crop rotation of rice growing areas as a major crop/Introducing Azolla in the 516
Crop with relation to soil fertilizer and the methods of application/The nutrient value of water fern 509
Crop/Introducing Azolla in the crop rotation of rice growing areas as a major 516
Crop/Nitrogen fixation by Azolla for rice 530
Ctenopharyngodon idella [grass carp] and female Cyprinus carpio [Israeli common carp]/Aquarium studies 607
(Ctenopharyngodon idella Val.) as a biological control for aquatic weeds in Indiana/Potential of the white 654
Ctenopharyngodon idella (Val.), fed on Utricularia and a mixture of Azolla and Lemna/Relative growth of 650
Ctenopharyngodon idella (Val.), in controlling and utilizing aquatic weeds in ponds in India/Observations 643
Cu/The heat tolerance of Azolla pinnata as influenced by the trace elements Mn and 197
Culicid larvae and their role in mosquito control/Study on the natural enemies of 671
Cultivated ferns/Some common 25
Cultivation of alga-free Azolla, isolation of Anabaena azollae and preliminary attempt at their 201
Cultivation of Azolla for animal feed and as a green manure for rice fields 511
Cultivation of Azolla in the rice fields for most of the year/Studies on 537
Cultivation of Azolla in Tonkin 500
Cultivation of spring rice/Planting and 506
Cultivation, propagation, and utilization of Azolla 488
Cultivation/Environmental constraints to Azolla 490
Cultivation/Green manures in Tonkinese rice 501
Cultivation/Multiplication and utilization of fern "Azolla" containing nitrogen fixing algal symbiont 567
Cultivation/The role of blue-green algae in tropical rice 581
Culture solution/The effect of organic matter on the growth of various water plants 151
Culture/Azolla and its use in lowland rice 582
Culture/Azolla as a supplemental source for flooded paddy 496
Culture/Azolla utilization in rice 583
Culture/Use of Azolla as a source of nitrogen for temperature zone in rice 551
Curculionidae)/The life history of Stenopelmus rufinasus (Coleoptera: 593
Cuttack/Control of some aquatic vegetation in fish ponds at 635
Cyanobacteria and their associations with eukaryotic plants/Nitrogen-fixing 234
Cyanobacteria from the aquatic fern, Azolla/Isolation of 194
(Cyanobacteria), possible biological indicators of stratospheric ozone depletion/Effect of ultraviolet-B 192
Cyanobacterium of Azolla/Isolation and characterization of phycobiliproteins from the endophytic 240
Cyanophyte-Hepatic symbiosis 113
Cycle studies of the apical cell and its derivative in the root of Azolla filiculoides Lam./Cell 105
Cyprinus carpio [Israeli common carp]/Aquarium studies on the selectivity of 16 aquatic plants as food 607
Cytological analysis of Nostoc-Bryophyte relationship 60
Cytology of sporangium development in Azolla filiculoides 63
Cytology of two species of Salviniaceae 100
Czechoslovakia/Azolla filiculoides Lam. - newly introduced species in 406
Czechoslovakia/The lower Miocene flora from Safov in Southern Moravia, 455
Czechoslovakia/Structure of vegetation: a comparison of aquatic vegetation in India, the Netherlands 448

D

Damage and control of Azolla japonica 596a
Danube waterbodies in Bulgaria and its change under the effect of humans and conservation/The macrophyte 456
Dark/Free amino acids in the leaves of Salvinia natans and Azolla filiculoides grown in light and 183
Darlots Creek (Vic.) sanctuary 347
Deccan intertrappean beds of India/Rhizomites dakshini gen. et sp. nov. a new pteridophytic axis from 372
Deccan intertrappean series/The silicified flora of the 391
Decomposition of Azolla pinnata in lowland rice soils 503 504
Decomposition of Azolla pinnata in moist and flooded soil 502
Delicacy to nitrogen powerhouse/Nostoc: from 548
Democratic Republic of Vietnam/The problems on the utilization of Azolla as a green manure in 536
Denmark/Late Tertiary Azolla from Romo, Southwestern 268
Depositional environments foremost formation 367
Deposits in the Netherlands/Azolla and the age determination of interglacial freshwater 298

Deposits/The occurrence of Azolla in British interglacial 421
Derepression of nitrogen-fixation genes -- relevance to increasing world food production/Critique - 8
Derivative in the root of Azolla filiculoides Lam./Cell cycle studies of the apical cell and its 105
Development of Anabaena in the Azolla-Anabaena symbiosis/The pattern of 171
Development of Azolla filiculoides Lam./Factors affecting the growth and 134
Development of Azolla filiculoides Lam./Morphology and 71
Development of green manure plants in Vinh Phuc 514
Development of plasmodesmata/The origin and 86
Development of stomata in some leptosporangiate ferns/Structure and 178
Developmental changes in the meristem of Azolla roots/Formative and proliferative cell divisions, 75
Dhiancha as a source of nitrogen/Use of Azolla and leaves of Ipomea and 580
Diazotrophs/Description and classification of 154
Diesoline/Control of water fern with 634
Differentiation, and developmental changes in the meristem of Azolla roots/Formative and 75
Dinitrogen fixation by plant associations excluding legumes 562
Dinoflagellates from Seymour Island, Antarctica/Cretaceous and Tertiary 319
Diquat - a new contact weedkiller 651
Diquat and paraquat 613
Diquat and paraquat/The sensitivity of duckweeds (Lemnaceae) and Azolla to 602
Disposition of cortical microtubules in plant cells, fixed in glutaraldehyde-osmium tetroxide 83
Distribution and ecology of fern flora of Kanagawa prefecture, Japan 463
Distribution and risks of extension/Exotic plants of the South West, present 611
Distribution and utilization research on tropical and subtropical aquatic weeds in the USA 612
Distribution of Azolla 321
Distribution of plants 385
Distribution of Salvinia and Azolla in South America and Africa, in connection with studies 382
Division in Azolla roots/Pre-prophase bands of microtubules in all categories of formative 78
Divisions, cell differentiation, and developmental changes in the meristem of Azolla roots 75
Don Felipe Oxbow/Biocenology of the Camoebans from the floating vegetation in the 444
Drainage system/Ash basin effluent impact on the aquatic flora of a stream and swamp 468
Duckweeds (Lemnaceae) and Azolla to diquat and paraquat/The sensitivity of 602
Duckweeds: other names 287

E

Ecological and economic significance of the non-legume symbioses 479
Ecological effects/Introduced aquatic, freshwater and salt marsh plants - case histories and 465
Ecological-hydrobiological study on irrigated rice fields in relation to the fixation of 5
Ecological indicator of water status in the Tiber river/Riccio flutans - Azolla associations: 430
Ecological survey of the aquatic weeds Eichhornia crassipes and Salvinia species, and their 631
Ecology and physiological adaptations of Anabaena in the Azolla-Anabaena azollae symbiosis 140
Ecology in the Galapagos Islands/Historical 440 441
Ecology of Azolla africana in the Sahelian zone (Senegal)/First information on the 469
Ecology of fern flora of Kanagawa prefecture, Japan/Distribution and 463
Ecology of N_2-fixing blue-green algae/Cellular physiology and the 232
Ecology of nitrogen fixation by algae 522
Ecology of Solah Sagar pond 453
Ecology of the low-lying lands/A study in the 459
Ecology of vascular hydrophytes on Lake Kariba 460
Ecology of water weeds in the neotropics: an ecological survey of the aquatic weeds Eichhornia 631
Economic aspects of algae 146
Economic damage caused by aquatic weeds (preliminary survey) 648
Economic significance of the non-legume symbioses/Ecological and 479
Economic value of aquatic vascular plants/The aesthetic and 667
Economy of rice soils in relation to nitrogen fixation by blue-green algae and Azolla/Nitrogen 568
Ecosystem study of a tropical pond in relation to primary production of different vegetational 428
Ecosystem/The chemical composition of Central Amazonian aquatic macrophytes with special reference 449
Ecosystems in Indonesia/Nitrogen fixation in some natural 142
Edmonton formation, Alberta, Canada/Azolla from the Upper Cretaceous 407
Effect of ammonia molybdate on the productivities of alfalfa and Azolla/The experiment on 489
Effect of Azolla as a green manure crop on rice yields in northeastern Thailand 558
Effect of Azolla on the fertility of paddy soils 561
Effect of Azolla on the yield of paddy with and without application of N fertilizer 566
Effect of Azolla on yield of rice 532
Effects on growth/Nutritional studies and the 199
Eichhornia Crassipes and Salvinia species, and their natural enemies in the neotropics/Ecology 631
Eichhornia Crassipes in the Nile of the Sudan 307
Eichhornia/Aquatic weeds Salvinia and 614
El-Junco lake, Isla San Cristobal/A Holocene pollen record from 440
El Junco Lake, Isla San Cristobal/Holocene spore record from 441
Electron microscope observations on blue-green algae in the leaf of Azolla imbricata Nakai 89
Electron microscope observations on the leaf of Azolla imbricata Nakai 90
Electron microscope observations on the root hair cell of Azolla imbricata Nakai 91
Electron microscopic study of heterocyst development in Anabaena azollae Strasburger 97
Electron microscopy of the megaspores of Azolla tegeliensis in the ancient Pleistocene of the 93a
Electron microscopy of the sporoderm on the Cenozoic megaspores of the water fern Azolla 94
Electronmicrographs on the plastids in the root of Azolla imbricata 92
Embryogenesis in Leptosporangiate ferns 124a
Embryology of Azolla pinnata 95
Endophytic cyanobacterium of Azolla/Isolation and characterization of phycobiliproteins from 240

Enemies in the neotropics/Ecology of water weeds in the neotropics: an ecological survey of the aquatic 631
Enemies of culicid larvae and their role in mosquito control/Study on the natural 671
Enemies of water hyacinth in northern South America and Trinidad/Exploration for natural 599
Enemy of Azolla/A new 592
Energy studies in macrophytes of a freshwater pond at Varanasi 458
Enhancing crop production/The role of blue-green algae [in] 535
Environment/The growth of Hydrophyte communities and their interaction with the aquatic 475
Environmental conditions affecting Azolla growth 163
Environmental constraints to Azolla cultivation 490
Environmental factors on growth, N_2-fixation and N balance of two Azolla species/The effect of 238
Environmental factors on the growth of Azolla filiculoides Lam./The effect of some 133
Environmental requirements of Azolla for use in tropical rice production 141
Enzyme activity in higher plant tissue/A procedure for the in-vivo determination of 218
Enzymes of ammonia assimilation in the Azolla-Anabaena azollae symbiotic association/Levels of chlorophyll, 217
Enzymes, protein, and chlorophyll between host and symbiont/Distribution of ammonia-assimilating 216
Eocene species of Azolla/A reappraisal of the megaspore of two 81
Epharmonic response in certain New Zealand species, and its bearing on taxonomic questions 250
Epiphytea/New cases of 124
Epiphytism/Symbiosis and 169
Epispore of the American species of Azolla with special reference to Azolla mexicana Presl./On the 305
Estuaries/Protists and plants in inland waters and 467
Eukaryotic plants/Nitrogen-fixing cyanobacteria and their associations with 234
Europe generally/The history of the occurrence of Azolla in the British Isles and in 352
Europe/Azolla in Britain and in 351
Evolution, and stratigraphic value of Azolla and Azollopsis in the Upper Cretaceous and Lower Tertiary 415
Evolution and stratigraphic value of Azolla/Morphology speciation 122
Evolution of Azolla and Azollopsis during the Upper Cretaceous and lower Tertiary 414
Evolution of fossil Salviniaceae/Trends in the 318
Evolutionary tendencies in the genus Azolla 350
Exotic plants of the South West, present distribution and risks of extension 611
Expenses/Azolla - these tiny plants can cut your fertilizer 497
Experiment on effect of ammonia molybdate on the productivities of alfalfa and Azolla 489
Experimental aspects of nitrogen fixation in higher plans/Theoretical and 18
Extremadura/Four new clovers from 306

F

Features of rice growing in Vietnam/Some characteristic 507
Feed and as green manure for rice fields/The cultivation of Azolla for animal 511
Feed production from Azolla/Domestic fowl 663
Feed/Azolla fern plant rice fertilizer and chicken 564
Feed/Azolla plants as fertilizer and 565
Feed/Utilize azolla in poultry 668
Fern-alga relationship in Azolla filiculoides/Aspects of the 244
Fern-allies and Characeae of the Malay Peninsula 386
Fern allies in Kansas/Ferns and 349
Fern allies/Mississippi flora: a guide to the ferns and 291a
Fern Azolla and its Anabaena symbiont/The aquatic 132
Fern Azolla and their control/First report on pests of the 595
Fern (Azolla caroliniana Willd.) in Tennessee/The mosquito 401
Fern - (Azolla caroliniana Willd.)/Water 610
Fern "Azolla" containing nitrogen fixing algal symbiont as green manure in rice cultivation and 567
Fern Azolla filiculoides/Nutritive value of the nitrogen-fixing aquatic 661
Fern, Azolla filiculoides/A wild water 114
Fern, Azolla, in the deposits of Chegan formation/Aquatic 341
Fern Azolla pinnata for chicks/Nutritive value of the water 670
Fern Azolla pinnata/Effect of macronutrients and pH on the growth, nitrogen fixation and soluble sugar 236
Fern Azolla/Electron microscopy of the sporoderm on the Cenozoic megaspores of the water 94
Fern, Azolla/Isolation of cyanobacteria from the aquatic 194
Fern (Azolla)/The mosquito 144
Fern family/Salviniaceae - water 360 362
Fern flora of Kanagawa prefecture, Japan/Distribution and ecology of 463
Fern in the Rhine/Tropical water 422
Fern makes nitrogen for rice/This water 569
Fern plant rice fertilizer and chicken feed/Azolla 564
Fern plants 330
Fern Salvinia auriculata and other aquatic plants/Effect of Bayluscide on the water 653
Fern systematics and phylogeny/Some future challenges of 420
Fern to rice crop with relation to soil fertilizer and the methods of application/The nutrient value 509
Fern with diesoline/Control of water 634
Fern/Provisional communication on the fixation of elementary nitrogen by a floating 219
Ferns and fern allies in Kansas 349
Ferns and fern allies/Mississippi flora: a guide to the 291a
Ferns of Taiwan/The aquatic 284
Ferns of the genus Azolla/Classification and phylogeny of living and fossil water 301
Ferns of the Philippines/A summary of our present knowledge of the 377
Ferns/Alipathic and triterpenoid hydrocarbons from 150
Ferns/Ancient 252

Ferns/Embryogenesis in Leptosporangiate 124a
Ferns/Enumeration of Chinese 355
Ferns/The leaf architecture and vasculature in some aquatic 101
Ferns/Notes on American 356
Ferns/Notes on Japanese 365
Ferns/Some common cultivated 25
Ferns/Structure and development of stomata in some leptosporangiate 178
Ferns/Structure and life history of 87
Ferns/Uses of Hawaiian 523
Ferns/Water 64 104
Ferny/Azolla, 256
Fertility of paddy soils/Effect of Azolla on the 561
Fertilization/Combination of Azolla and N- 575
Fertilize Indian rice paddies/Blue-green algae to 493
Fertilizer and chicken feed/Azolla fern plant rice 564
Fertilizer and feed/Azolla plants as 565
Fertilizer and fuel from tiny plants? 187
Fertilizer and the methods of application/The nutrient value of water fern to rice crop with relation 509
Fertilizer (Azolla)/Research on cultivation of plants with the utilization of paddy field green 578
Fertilizer expenses/Azolla - these tiny plants can cut your 497
Fertilizer for California rice culture/The use of Azolla as a source of nitrogen 550
Fertilizer for rice/Utilization of the Azolla-Anabaena complex as a nitrogen 586
Fertilizer in paddy soil/Potentiality of nitrogen fixing Azolla-Anabaena complex as 521
Fertilizer in rice cultivation/Nitrogen fixing blue-green algae in rice soils of Sri Lanka and their 533
Fertilizer mission and procedures/Various aspects of the 1966-1967 534
Fertilizer to winter rice/Future of Azolla as 545
Fertilizer with pure nitrogen/A few ideas on equating different kinds of nitrogenous 515
Fertilizer/Azolla as 531
Fertilizer/The Azolla plant cultivated for use as a green 546
Fertilizer/Effect of Azolla on the yield of paddy with and without application of N 566
Feulgen nucleal reaction/Plain water as a rinsing agent preferable to sulfurous acid after the 58
Field and to increase the rice yield/The use of Azolla to suppress Salvinia in the rice 616
Field/Studies on Azolla with reference to a green manure for rice- 579
Fields for most of the year/Studies on cultivation of Azolla in the rice 537
Fields in relation to the fixation of atmospheric nitrogen/Ecological-hydrobiological study on irrigated 5
Fields (Peninsular Malaysia)/Weeds in padi 656
Fields/The cultivation of Azolla for animal feed and as green manure for rice 511
Fields/Nitrogen fixation by Azolla in rice 576
Fields/Non-symbiotic nitrogen fixation in rice and rice 584
Fields/Study on the biological characteristics of Azolla pinnata, a green manure crop in paddy 539
Filicales 46
Fingerling hybrids of the cross between male Ctenopharyngodon idella [grass carp] and female Cyprinus 607
Fish for aquatic weed control/Tilapia mosambica as a 621
Fish ponds at Cuttack/Control of some aquatic vegetation in 635
Fish ponds/Aquatic weed control in 623
Fish population of a spring-fed swamp in the Misssissippi bottoms of Southern Illinois 446
Fish/Influence of water quality on toxicity of aquatic herbicides to certain plants and 655
Fishery tanks/Practical methods for controlling the water weeds in 633
Fixation, acetylene reduction, and H_2 production/$^{15}N_2$ 207
Fixation activity of Azolla imbricata by acetylene reduction/A measure of nitrogen 245
Fixation and agricultural productivity/Nitrogen 42
Fixation and nitrate reduction by the Azolla-Anabaena symbiosis/Effect of light quantity, osmotic stress, 174
Fixation and soluble sugar content of water fern Azolla pinnata/Effect of macronutrients and pH on the 236
Fixation and their interrelationship/Photosynthesis, nitrogen 241
Fixation as viewed by an agronomist/Symbiotic and nonsymbiotic nitrogen 246
Fixation: basic to applied/Nitrogen 9
Fixation by algae/The ecology of nitrogen 522
Fixation by Anabaena Azollae/Nitrogen 242
Fixation by Azolla: a brief review/Nitrogen 529
Fixation by Azolla-Anabaena association/Nitrogen fixation by 20
Fixation by Azolla for rice crop/Nitrogen 530
Fixation by Azolla in rice fields/Nitrogen 576
Fixation by blue-green algae and Azolla/Nitrogen economy of rice soils in relation to nitrogen 568
Fixation by blue-green algae/Nitrogen 542
Fixation by blue-green algae/Photosynthetic nitrogen 130
Fixation by blue-green algae/Studies on 242
Fixation by free-living microorganisms and by non-leguminous plants/Nitrogen 527
Fixation by Paku Air Tawar (Azolla pinnata)/Growth and nitrogen 153
Fixation genes -- relevance to increasing world food production/Critique - on "control of biological 8
Fixation": genetic derepression of nitrogen-fixation -- relevance to increasing world food production 8
Fixation in Banaue rice terrace soil and Pangil phosphorus-deficient oxisol/Nitrogen 528
Fixation in cereals/Enhancing biological nitrogen 520
Fixation in flooded soils: association with the rice plant/Nonsymbiotic nitrogen 494
Fixation in higher plants/Theoretical and experimental aspects of nitrogen 18
Fixation in microorganisms/Nitrogen 184
Fixation in nature, particularly in blue-green algae/On biological nitrogen 464
Fixation in non-leguminous plants/Symbiotic nitrogen- 43

Fixation in paddy soils/Asymbiotic N_2 137
Fixation in plants: an expanding horizon?/Nitrogen 167
Fixation in rice and rice fields/Non-symbiotic nitrogen 584
Fixation in soils of the tropics/Constraints to biological nitrogen 2
Fixation in some natural ecosystems in Indonesia/Nitrogen 142
Fixation of atmospheric nitrogen/Ecological-hydrobiological study on irrigated rice fields in relation 5
Fixation of Azolla japonica/A preliminary study of the nitrogen 224
Fixation of elementary nitrogen by a floating fern/Provisional communication on the 219
Fixation of free nitrogen in non-leguminous plants 13
Fixation of nitrogen/The incidence and importance of biological 147
Fixation: prospects for genetic manipulation/Nitrogen 186
Fixation research: a key to world food?/Nitrogen 15
Fixation/Advances in biological nitrogen 10
Fixation/Biology and agronomic significance of Azolla-Anabaena symbiotic nitrogen 492
Fixation/Control of biological nitrogen 559
Fixation/Enhancing biological nitrogen 549
Fixation/Nitrogen 34
Fixation/Novel aspects of nitrogen 518
Fixation/Some biological aspects of nitrogen 148
Fixing activity of Azolla pinnata/Growth and nitrogen- 152
Fixing algal symbiont as green manure in rice cultivation/Multiplication and utilization of fern "Azolla" 567
Fixing Azolla-Anabaena complex as fertilizer in paddy soil/Potentiality of nitrogen 521
Fixing Nostocaceae/On the significance of molybdenum for nitrogen- 149
Floating free on the surface/Plants 461
Floating leaves/Anatomical observations on 88
Floating or generally non-rooted aquatic weeds 28
Floating vegetation in the Don Felipe Oxbow/Biocenology of the Camoebans from the 444
Floats/Studies on fossil Azolla: Azolla Montana, a cretaceous megaspore with many small 316
Flooded paddy culture/Azolla as a supplemental source for 496
Flooded soil/Decomposition of Azolla pinnata in moist and 502
Flooded soils: association with the rice plant/Nonsymbiotic nitrogen fixation in 494
Flora: a guide to the ferns and fern allies/Mississippi 291a
Flora during the penultimate interglacial period of the Netherlands/On the 299
Flora from Safov in Southern Moravia, Czechoslovakia/The lower Miocene 455
Flora in Bulgaria/Materials and critical notes for the 334
Flora of Bodega head California/Additions and corrections to the 261
Flora of irrigated ricefields in the Ivory Coast/Weed 628
Flora of Kanagawa prefecture, Japan/Distribution and ecology of fern 463
Flora of Lucknow Diatrict (U. P.) [Uttar Pradesh]/Pteridophytic 417
Flora of Massachusetts/Reports on the 403
Flora of the Deccan intertrappean series/The silicified 391
Flora of the final Tertiary at Sete Herault Southern France/The palyno 375
Flora of the Shlave-2 layer near Anikshchai in the Lithuanian SSR/New data on the 419
Floral areas/Third report of the Committee on 339
Floras of the USSR/New species of Azolla Lam. in Tertiary 285
Floras/The later Carboniferous vegetation with some account of Permian 399
Floristic observations from the surroundings of the town of Hlohovec in Slovakia 293
Food by fingerling hybrids of the cross between male Ctenopharyngodon idella [grass carp] and 607
Food production/Critique - on "control of biological nitrogen fixation": genetic derepression of 8
Food supply - technology, resources and policy/Assuring our 587
Food?/Nitrogen fixation research: a key to world 15
Fossil Azolla: Azolla Montana, a Cretaceous megaspore with many small floats/Studies on 316
Fossil Azolla from the Galapagos Islands 393
Fossil Azolla in Netherlands 297
Fossil Azolla massulae from Japan and some notes on recent Japanese species/Discovery 395
Fossil Azolla: primitive types of megaspores and massulae from the Cretaceous/Studies on 317
Fossil history of the Hydropteridae/The structure and life history of Azolla pinnata R. Brown with 110
Fossil megaspores hitherto invalidly named Thomsonia/Paxillitriletes, a new name for 315
Fossil record of the Salviniaceae/A contribution to the early Tertiary 331
Fossil Salviniaceae/Notes on 314
Fossil Salviniaceae/Trends in the evolution of 318
Fossil Salviniaceous and Marsileaceous megaspores/An ultrastructural comparison of walls of living and 266
Fossil water ferns of the genus Azolla/Classification and phylogeny of living and 301
Fowl feed production from Azolla/Domestic 663
France/The palyno flora of the final Tertiary at Sete Herault Southern 375
Free-living microorganisms and by non-leguminous plants/Nitrogen fixation by 527
Freshwater and salt marsh plants - case histories and ecological effects/Introduced aquatic 465
Freshwater clay layer of Oosterbeek (Netherlands)/Occurrence of Azolla filiculoides in Pleistocene 260
Freshwater deposits in the Netherlands/Azolla and the age determination of interglacial 298
Freshwater macrophytes/Primary production of 485
Fuel from tiny plants?/Fertilizer and 187

G

Galapagos Islands/Climate and the 439
Galapagos Islands/Fossil Azolla from the 393
Galapagos Islands/Historical ecology in the 440 441

Galapagos Islands/Reconnaissance and chemistry of the lakes and bogs of the 442
Gemmipary/Regeneration and 222
Genera and species/Keys to the 333
Genes -- relevance to increasing world food production/Critique - on "control of biological nitrogen 8
Genesee, Alberta/Vegetative remains of Azolla schopfii Dijkstra from 416
Genetic derepression of nitrogen-fixation genes -- relevance to increasing world food production 8
Genetic manipulation/Nitrogen fixation: prospects for 186
Genetics and plant improvement/Aspects of Chinese science - 35
Genus of Salviniaceae and a new species of Azolla from the late Cretaceous/A new 313
Geographic distribution of Salvinia and Azolla 324
Georgia/Azolla caroliniana Willd. in 289
German Democratic Republic/Pollen-analytical classification of the Middle Pleistocene in the 291
Germany district/Azolla filiculoides in the Nordheimer Altrhein West 270
Germany/New findings of Azolla in Pleistocene 327
Germany/Spores of Azolla and Salvinia in the Neocene West 336
Germination of zygotes and nutritional properties of young seedlings/Observations on Azolla's morphology 44
Gibberellic acid, indoleacetic acid, and maleic hydrazide on Azolla mexicana/Effect of 162
Glochidia/A Cretaceous Azolla masula with large 264
Glomerisporites, two Cretaceous megaspores of possible Salviniaceous affinity/Ariadnaesporites and 311
Glutaraldehyde-osmium tetroxide/The length and disposition of cortical microtubules in plant cells, 83
Glycolate oxidase activity and photosynthesis of soybean and Azolla pinnata R. Br./The effect of 195
Granular 2, 4-D on some waterweeds and its persistence/Effect of 620
Granules in the root hair of Azolla imbricata Nakai/On the 93
Grass carp, Ctenopharyngodon idella (Val.), fed on Utricularia and a mixture of Azolla and Lemna 650
Grass carp, Ctenopharyngodon idella (Val.), in controlling and utilizing aquatic weeds in ponds in India 643
Grass carp for weed control/Use 649
Grasscarp in Holland 657
Grass carp in New Zealand/Weed preference and growth of young 609
Grasses/Potential for nitrogen fixation in tropical legumes and 161
Green compost for rice cultivation/Azolla: a precious 563
Green compost/Azolla:,a 577
Green fertilizer (Azolla)/Research on cultivation of plants with the utilization of paddy field 578
Green fertilizer/The Azolla plant cultivated for use as a 546
Green manure crop in paddy fields/Study on the biological characteristics of Azolla pinnata, a 539
Green manure crop on rice yields in northeastern Thailand/Effect of Azolla as a 558
Green manure for rice-field/Studies on Azolla with reference to a 579
Green manure for rice fields/The cultivation of Azolla for animal feed and as 511
Green manure for rice/The use of Azolla pinnata as a 571
Green manure in Democratic Republic of Vietnam/The problems on the utilization of Azolla as a 536
Green manure in rice cultivation/Multiplication and utilization of fern "Azolla" containing nitrogen 567
Green manure plants in Vinh Phuc/The development of 514
Green manure/A preliminary study of the overwintering of Azolla pinnata as a source of 510
Green manures in Tonkinese rice cultivation 501
Green revolution in North Vietnam/The spring rice and the 508
Growing in Vietnam/Some characteristic features of rice 507
Growth and development of Azolla filiculoides Lam./Factors affecting the 134
Growth and nitrogen fixation by Paku Air Tawar (Azolla pinnata) 153
Growth and nitrogen-fixing activity of Azolla pinnata 152
Growth and nitrogen metabolism of the Azolla mexicana-Anabaena azollae symbiosis/Studies of the 175
Growth and the photosynthesis of Azolla pinnata as affected by light and temperature conditions 196
Growth in plants/Primary mechanisms of integration and 182
Growth, N_2-fixation and N balance of two Azolla species/The effect of environmental factors on 238
Growth, nitrogen fixation and soluble sugar content of water fern Azolla pinnata/Effect of macronutrients 236
Growth of Azolla filiculoides in mineral solution without addition of "auximone" 128
Growth of Azolla filiculoides in the absence of combined nitrogen/A cobalt requirement for symbiotic 181
Growth of Azolla filiculoides Lam./The effect of some environmental factors on the 133
Growth of Azolla filiculoides/Effect of light intensity and temperature on the 127
Growth of Azolla filiculoides/Interrelationship between the compensation point, temperature coefficient 129
Growth of Azolla/Notes on the spring 431
Growth of several aquatic macrophytes/Effects of salinity on 170
Growth of various water plants in culture solution/The effect of organic matter on the 151
Growth of white amur at different stages of life at Kota and Rawat-Bhata, India/On the utilization 642
Growth of young grass carp in New Zealand/Weed preference and 609
Growth parameters/Initial characterizations and comparisons of five Azolla species: 239
Growth rate of Azolla pinnata R. Br. under laboratory conditions 229
Growth studies/Isolation and preliminary 198
Growth/Environmental conditions affecting Azolla 163
Growth/Nutritional studies and the effects on 199
Guyana/Aquatic weeds found in 251
Gymnosperms from the Pliocene of Willershausen/Thallophytes, Kryptogams and 481

H

H_2 production/$^{15}N_2$ fixation, acetylene reduction, and 207
H_2 production/Photosynthetically driven, nitrogenase-catalyzed 206
Ha Tay/Six years of development of the spring rice harvest in 547
Hair cell of Azolla imbricata Nakai/Electron microscope observations on the root 91
Hair of Azolla imbricata Nakai/On the granules in the root 93

Hairs by aquatic plants/The production of root 223
Hannover and the probable age of this interglacial/Azolla filiculoides in the interglacial deposit 388
Harvest in Ha Tay/Six years of development of the spring rice 547
Hawaiian ferns/Uses of 523
Heat tolerance of Azolla pinnata as influenced by the trace elements Mn and Cu 197
Hepatic symbiosis/The Cyanophyte- 113
Herbicide guide/Weed: 646
Herbicide/The effects of soil type and temperature on persistence of atrazine 603
Herbicides on Lemna and Azolla/Ultrastructural effects of 622
Herbicides on some aquatic weeds/Effect of four 618
Herbicides/Studies on the control of aquatic weeds of Orissa - response of Pistia stratiotes L., Spirodela 629
Herbicides/The susceptibility of aquatic weeds to 645
Heterocyst development in Anabaena azollae Strasburger/Electron microscopic study of 97
Heterocyst spacing in the symbiotic blue-green algae Anabaena azollae 237
Heterosporous fern Azolla/Ultrastructural studies on the blue-green algae associated with the bryophytes 61
Heterospory 50
Histological organization of root apices 125
History and biology of Samea multiplicales/Life 591
History of Azolla pinnata R. Brown with remarks on the fossil history of the Hydropteridae/The structure 110
History of Stenopelmus rufinasus (Coleoptera: Curculionidae)/The life 593
History of the Hydropteridae/The structure and life history of Azolla pinnata R. Brown with remarks on 110
History of the occurrence of Azolla in the British Isles and in Europe generally 352
Hlohovec in Slovakia/Floristic observations from the surroundings of the town of 293
Hoagland solution/Effects of Cadmium (II) on Azolla caroliniana Willd., Salvinia Rotundifolia Willd., 200
Holland/The grasscarp in 657
Holocene pollen record from El-Junco lake, Isla San Cristobal 440
Holocene spore record from El Junco Lake, Isla San Cristobal 441
Hormone herbicides/Studies on the control of aquatic weeds of Orissa - response of Pistia stratiotes L., 629
Host and symbiont/Distribution of ammonia-assimilating enzymes, protein, and chlorophyll between 216
Host Azolla pinnata/Anabaena azollae and its 119
Humans and conservation/The macrophyte vegetation of the Danube waterbodies in Bulgaria and its change 456
Humid tropics/Other vegetation types of the 484
Hyacinth in northern South America and Trinidad/Exploration for natural enemies of water 599
Hybrids of the cross between male Ctenopharyngodon idella [grass carp] and female Cyprinus carpio 607
Hydracarina/Notes about Argentine 471
Hydrazide on Azolla mexicana/Effect of gibberellic acid, indoleacetic acid, and maleic 162
Hydrobiological study on irrigated rice fields in relation to the fixation of atmospheric nitrogen 5
Hydrocarbons from ferns/Alipathic and triterpenoid 150
Hydrogen by a plant-algal symbiotic system/Photoproduction of molecular 462
Hydrophyte communities and their interaction with the aquatic environment/The growth of 475
Hydrophytes and algae of Lake Trasimeno and the variability of pigment content in Spirogyra/Presence 429
Hydrophytes and marsh plants of Alwar and environs/A study of 482
Hydrophytes and plants of low lying habitats in Jahalpur/A study in the 477
Hydrophytes at different vertical stratification/Caloric values of 228
Hydrophytes of Baroda and environs/A study of the 436
Hydrophytes of Nagpur; a preliminary study/Studies in the 358
Hydrophytes of Umred/Studies in the 359
Hydrophytes on Lake Kariba/The ecology of vascular 460
Hydropteridae/Contribution to the study of the 49
Hydropteridae/The structure and life history of Azolla pinnata R. Brown with remarks on the fossil 110
Hydropteridae/Studies on the 56 57

I

Identification and control/Weed 627
Identification; manual of the major taxa of living Pteridophytes/The process of 262
Ile river ecosystem near Strasbourg/Note on the behavior of Azolla filiculoides in the 452
Illinois 447
Illinois/The fish population of a spring-fed swamp in the Mississippi bottoms of Southern 446
Improvement/Aspects of Chinese science - genetics and plant 35
In situ nitrogen fixation measurement of Azolla imbricata/A simple method for the 136
In-vivo determination of enzyme activity in higher plant tissue/A procedure for the 218
Increase rice production/New strategy to 543
Increase the rice yield/The use of Azolla to suppress Salvinia in the rice field and to 616
India, the Netherlands and Czechoslovakia/Structure of vegetation: a comparison of aquatic vegetation in 448
India/Aquatic weeds of ponds in Assam, 638
India/Observations on the efficacy of grass carp, Ctenopharyngodon idella (Val.), in controlling and 643
India/On the utilization of aquatic weed and growth of white amur at different stages of life at Kota 642
India/Rhizomites dakshini gen. et sp. nov. a new pteridophytic axis from the Deccan intertrappean beds 372
India/Use of Azolla in 570
India/Use of Azolla in rice production in 572
Indian pteridophytes/Taxonomy of 269
Indian rice paddies/Blue-green algae to fertilize 493
Indian silicified plants 390
Indiana/Potential of the white amur (Ctenopharyngodon idella Val.) as a biological control for aquatic 654
Indoleacetic acid, and maleic hydrazide on Azolla mexicana/Effect of gibberellic acid, 162
Indonesia/Nitrogen fixation in some natural ecosystems in 142
Indonesia/Nymphula responsalis attacking Salvinia spp. in 590

Infestations/Specific problem 632
Inland waters and estuaries/Protists and plants in 467
Inland waters with special reference to water-blooms/Biological productivity of 226
Insect interactions with Azolla mexicana/Some 589
Insects and pathogens for the control of Salvinia and Pistia 600
Insects as biological control agents of aquatic weeds/Lepidopterous 615
Insects/Distribution of Salvinia and Azolla in South America and Africa, in connection with studies 382
Integration and growth in plants/Primary mechanisms of 182
Intensity and temperature on the growth of Azolla filiculoides/Effect of light 127
Interaction/New morphological observations on the Azolla caroliniana-Anabaena symbiosis relevant to 156
Interglacial deposit of Wunstorf at Hannover and the probable age of this interglacial/Azolla filiculoides 388
Interglacial deposits/The occurrence of Azolla in British 421
Interglacial freshwater deposits in the Netherlands/Azolla and the age determination of 298
Interglacial of Poland/Azolla filiculoides Lam. in the older 404
Interglacial period of the Netherlands/On the flora during the penultimate 299
Interglacial/Azolla filiculoides in the interglacial deposit of Wunstorf at Hannover and the probable 388
Interrelationship between the compensation point, temperature coefficient and growth of Azolla filiculoides 129
Interrelationship/Photosynthesis, nitrogen fixation and their 241
Intertrappean beds of India/Rhizomites dakshini gen. et sp. nov. a new pteridophytic axis from the Deccan 372
Ipomea and Dhiancha as a source of nitrogen/Use of Azolla and leaves of 580
Ipomoea Aquatica Forsk. to hormone herbicides/Studies on the control of aquatic weeds of Orissa - response 629
Irrigated rice fields in relation to the fixation of atmospheric nitrogen/Ecological-hydrobiological study 5
Irrigated ricefields in the Ivory Coast/Weed flora of 628
Irrigation channels and ditches/Weeds in 652
Isla San Cristobal/A Holocene pollen record from El-Junco lake, 440
Isla San Cristobal/Holocene spore record from El Junco Lake, 441
Island basins in the Middle Parana River/The Camoeban taxocenoses in 444
Isle of Wight/Megaspores and massulae of Azolla prisca from the Oligocene of the 303
Isolation and characterization of phycobiliproteins from the endophytic cyanobacterium of Azolla 240
Isolation and preliminary growth studies 198
Isolation and pure culture of alga-free Azolla and Anabaena azollae 135
Isolation of a blue-green alga from Azolla 193
Isolation of Anabaena azollae and preliminary attempt at their association/Cultivation of alga-free 201
Isolation of cyanobacteria from the aquatic fern, Azolla 194
[Israeli common carp]/Aquarium studies on the selectivity of 16 aquatic plants as food by fingerling 607
Italy and Japan/Azolla filiculoides in 342
(Italy)/Azolla caroliniana Willd., a naturalized exotic, new in the flora of Latium 254
Italy/Azolla filiculoides; new record in the lower Pleistocene of Central 300
Ivory Coast/Weed flora of irrigated ricefields in the 628

J

Jahalpur/A study in the hydrophytes and plants of low lying habitats in 477
Japan and some notes on recent Japanese species/Discovery of fossil Azolla massulae from 395
Japan/Azolla filiculoides in Italy and 342
Japan/Distribution and ecology of fern flora of Kanagawa prefecture, 463
Japanese ferns/Notes on 365
Japanese species of Azolla/Notes on the 427
Japanese species/Discovery of fossil Azolla massulae from Japan and some notes on recent 395
Jheel in Sher-e-Bangla Nagar/Limnological studies of a 617

K

Kanagawa prefecture, Japan/Distribution and ecology of fern flora of 463
Kansas/Ferns and fern allies in 349
Kariba/The ecology of vascular hydrophytes on Lake 460
Kent/Upper Paleocene Salviniaceae from the Woolwich/Reading beds near Cobham, 353
Kerala/Observations on the aquatic vegetation of Trivandrum, 647
Key to world food?/Nitrogen fixation research: a 15
Khandalla/Azolla at 371
Kota and Rawat-Bhata, India/On the utilization of aquatic weed and growth of white amur at different 642
Kota, Rajasthan/Aquatic weeds and their distribution in Chambal commanded area in 604
Kremastopora from western and arctic Canada/Early Tertiary species of Azolla subg. sect. 413
Kryptogams and Gymnosperms from the Pliocene of Willershausen/Thallophytes, 481
Kwangtung province, People's Republic of China/Azolla in 540

L

Laboratory conditions/Growth rate of Azolla pinnata R. Br. under 229
Lake: plants and lower animals/Life in the 438
Lake Texcoco/Some plant associations of the soils of 472
Lake Trasimeno and the variability of pigment content in Spirogyra/Presence of chlorophyllide in 429
Lake waters/Minor metallic elements in 451
Lake weed problem in the north island of New Zealand 435
Lakes and bogs of the Galapagos Islands/Reconnaissance and chemistry of the 442
Laos according to type, common name and scientific name/Summary of aquatic plants observed in northeast 366

Larvae and their role in mosquito control/Study on the natural enemies of culicid 671
Larvae/Lemna and mosquito 659
"Las Perdices" pond/Horizontal variation of the mesofauna of the pleuston distribution in the 470
Latium (Italy)/Azolla caroliniana Willd., a naturalized exotic, new in the flora of 254
Layer of Oosterbeek (Netherlands)/Occurrence of Azolla filiculoides in Pleistocene freshwater clay 260
Leaf architecture and vasculature in some aquatic ferns 101
Leaf of Azolla imbricata Nakai/Electron microscope observations on blue-green algae in the 89
Leaf of Azolla imbricata Nakai/Electron microscope observations on the 90
Leaf symbiosis and nitrogen fixation/Bacterial 176
Leaves of Azolla caroliniana/Internal structure of Anabaena azollae living on the 72
Leaves of Ipomea and Dhiancha as a source of nitrogen/Use of Azolla and 580
Leaves of Salvinia natans and Azolla filiculoides grown in light and dark/Free amino acids in the 183
Leaves/Anatomical observations on floating 88
Legume symbioses/Ecological and economic significance of the non- 479
Legumes and grasses/Potential for nitrogen fixation in tropical 161
Legumes/Dinitrogen fixation by plant associations excluding 562
Legumes/Symbiotic nitrogen fixation by non- 143
Leguminous plants/Symbiotic nitrogen-fixation in non- 43
Lemna and Azolla/Ultrastructural effects of herbicides on 622
Lemna and mosquito larvae 659
Lemna/Relative growth of the grass carp, Ctenopharyngodon idella (Val.), fed on Utricularia and a 650
(Lemnaceae) and Azolla to diquat and paraquat/The sensitivity of duckweeds 602
Length and disposition of cortical microtubules in plant cells, fixed in glutaraldehyde-osmium tetroxide 83
Lepidopterous insects as biological control agents of aquatic weeds 615
Leptosporangiate ferns/Embryogenesis in 124a
Leptosporangiate ferns/Structure and development of stomata in some 178
Life history and biology of Samea multiplicalis 591
Life history of Azolla pinnata R. Brown with remarks on the fossil history of the Hydropteridae 110
Life history of ferns/Structure and 87
Life history of Stenopelmus rufinasus (Coleptera: Curculionidae) 593
Life in the lake: plants and lower animals 438
Light and dark/Free amino acids in the leaves of Salvinia natans and Azolla filiculoides grown in 183
Light and temperature conditions/The growth and the photosynthesis of Azolla pinnata as affected by 196
Light intensity and temperature on the growth of Azolla filiculoides/Effect of 127
Light quantity, osmotic stress, temperature and pH on nitrogen fixation and nitrate reduction by the 174
Limnologic traits of northern Argentina/Principal 434
Limnological studies of a jheel in Sher-e-Bangla Nagar 617
Lithuanian SSR/New data on the flora of the Shlave-2 layer near Anikshchai in the 419
Living and fossil Salviniaceous and Marsileaceous megaspores/An ultrastructural comparison of walls of 266
Living and fossil water ferns of the genus Azolla/Classification and phylogeny of 301
Living aquatics transported by birds, batrachians, etc./Portions of 387
Localization of nitrogenase activity as assayed by acetylene reduction 204
Long Island/Azolla filiculoides on 275
Lower Tertiary/The taxonomy, evolution, and stratigraphic value of Azolla and Azollopsis in the Upper 415
Lowland rice culture/Azolla and its use in 582
Lowland rice soils/Decomposition of Azolla pinnata in 503 504
Lucknow District (U. P.) [Uttar Pradesh]/Pteridophytic flora of 417
Lyngbya-Majuscula and Azolla pinnata/Proteins from 664

M

Macronutrients and pH on the growth, nitrogen fixation and soluble sugar content of water fern Azolla 236
Macrophyte studies/Contributions to 450
Macrophyte vegetation of the Danube waterbodies in Bulgaria and its change under the effect of humans 456
Macrophytes of a freshwater pond at Varanasi/Energy studies in 458
Macrophytes with special reference to their role in the ecosystem/The chemical compoaition of Central 449
Macrophytes/Effects of salinity on growth of several aquatic 170
Macrophytes/Primary production of freshwater 485
Macrophytes/Principles on structure, zonation and succession of aquatic 36
Majuscula and Azolla pinnata/Proteins from Lyngbya- 664
Malay Peninsula/The fern-allies and Characeae of the 386
Malayaia)/Weeds in padi fields (Peninsular 656
Maleic hydrazide on Azolla mexicana/Effect of gibberellic acid, indoleacetic acid, and 162
Manatees as a naturalistic biological mosquito control method 457
Manure crop in paddy fields/Study on the biological characteristics of Azolla pinnata, a green 539
Manure crop on rice yielda in northeastern Thailand/Effect of Azolla as a green 558
Manure for rice field/Studies on Azolla with reference to a green 579
Manure for rice fields/The cultivation of Azolla for animal feed and as green 511
Manure for rice/Azolla a good 495
Manure for rice/The use of Azolla pinnata as a green 571
Manure in Democratic Republic of Vietnam/The problems on the utilization of Azolla as a green 536
Manure in rice cultivation/Multiplication and utilization of fern "Azolla" containing nitrogen fixing 567
Manure plants in Vinh Phuc/The development of green 514
Manures in Tonkinese rice cultivation/Green 501
Manures/Azolla research studies in Thailand; study on self-supply 557
Manuring to rice/Azolla 525 574
Marsh plants - case histories and ecological effects/Introduced aquatic, freshwater and salt 465

Marsh plants of Alwar and environs/A study of hydrophytes and 482
Marsileaceous megaspores/An ultrastructural comparison of walls of living and fossil Salviniaceous and 266
Maryland/Azolla caroliniana in 381
Massachusetts/Reports on the flora of 403
Massulae from Japan and some notes on recent Japanese species/Discovery of fossil Azolla 395
Massulae from the Cretaceous/Studies on fossil Azolla: primitive types of megaspores and 317
Massulae of Azolla prisca from the Oligocene of the Isle of Wight/Megaspores and 303
Massulae/An escape mechanism for spermatozoids in Azolla 69
Massulae/The structure of Azolla 82
Masula with large glochida/A cretaceous Azolla 264
Matter on the growth of various water plants in culture solution/The effect of organic 151
Mediterranean region/The vegetation of the rice fields in the 443
Megaspore of two Eocene species of Azolla/A reappraisal of the 81
Megaspore with many small floats/Studies on fossil Azolla: Azolla Montana, a cretaceous 316
Megaspores, and an anomalous form/Some structures in Azolla 103
Megaspores and massulae from the Cretaceous/Studies on fossil Azolla: primitive types of 317
Megaspores and massulae of Azolla prisca from the Oligocene of the Isle of Wight 303
Megaspores hitherto invalidly named Thomsonia/Paxillitriletes, a new name for fossil 315
Megaspores of possible Salviniaceous affinity/Ariadnaesporites and glomerisporites, two Cretaceous 311
Megaspores of the Azolla tegeliensis in the ancient Pleistocene of the Netherlands/Electron microscopy 93a
Megaspores of the water fern Azolla/Electron microscopy of the sporoderm on the Cenozoic 94
Megaspores/A critical study of three Cretaceous Salviniaceous 79 265
Megaspores/An ultrastructural comparison of walls of living and fossil Salviniaceous and Marsileaceous 266
Megasporocarp of Azolla filiculoides/The formation of threads during the development of the periplasmodium 48
Melbourne, Australia/The occurrence of Azolla filiculoides L. and associated vascular plants in a 288
Meristem of Azolla roots/Formative and proliferative cell divisions, cell differentiation, and 75
Meristems/Apical 66
Mesofauna of the pleuston distribution in the "Las Perdices" pond/Horizontal variation of the 470
Mesopleuston of the Yalca pond (Province of Buenos Aires)/Spatial and seasonal variations of the 474
Metabolic capabilities and a further characterization of the symbiont/Studies on 205
Metabolism of the Azolla mexicana-Anabaena azollae symbiosis/Studies of the growth and nitrogen 175
Metabolism/Nitrogen 165
Metallic elements in lake waters/Minor 451
Microbes: summary statement/Roles of 22
Microbes/Role of 585
Microorganisms and by non-leguminous plants/Nitrogen fixation by free-living 527
Microorganisms/Nitrogen fixation in 184
Microscope observations on blue-green algae in the leaf of Azolla imbricata Nakai/Electron 89
Microscope observations on the leaf of Azolla imbricata Nakai/Electron 90
Microscope observations on the root hair cell of Azolla imbricata Nakai/Electron 91
Microscopic material of Azolla caroliniana/Observations on 70
Microscopic study of heterocyst development in Anabaena azollae Strasburger/Electron 97
Microscopy of the megaspores of Azolla tegeliensis in the ancient Pleistocene of the Netherlands 93a
Microscopy of the sporoderm on the Cenozoic megaspores of the water fern Azolla/Electron 94
Microtubule arrays in plant cells/Structure of cortical 84
Microtubules in all categories of formative and proliferative cell division in Azolla roots/Pre-prophase 78
Microtubules in Azolla root apices/Morphogenesis and 76
Microtubules in discrete regions of the cell cortex in Azolla root-tip cells, and an hypothesis on the 74
Microtubules in plant cells, fixed in glutaraldehyde-osmium tetroxide/The length and disposition of 83
Microtubules/Evidence for initiation of microtubules in discrete regions of the cell cortex in Azolla 74
Middle Parana River/The Camoeban taxocenoses in island basins in the 444
Middle Pleistocene in the German Democratic Republic/Pollen-analytical classification of the 291
Milk River area southern Alberta, Canada/Late Cretaceous 367
Mineral solution without addition of "auximone"/The growth of Azolla filiculoides in 128
Miocene flora from Safov in Southern Moravia, Czechoslovakia/The lower 455
Mission and procedures/Various aspects of the 1966-1967 fertilizer 534
Mississippi bottoms of Southern Illinois/The fish population of a spring-fed swamp in the 446
Mississippi flora: a guide to the ferns and fern allies 291a
Mn and Cu/The heat tolerance of Azolla pinnata as influenced by the trace elements 197
Moist and flooded soil/Decomposition of Azolla pinnata in 502
Molecular hydrogen by a plant-algal symbiotic system/Photoproduction of 462
Molybdate on the productivities of alfalfa and Azolla/The experiment on effect of ammonia 489
Molybdenum for nitrogen-fixing Nostocaceae/On the significance of 149
Moravia, Czechoslovakia/The lower Miocene flora from Safov in Southern 455
Morphogenesis and microtubules in Azolla root apices 76
Morphological and physiological studies/The Azolla-Anabaena association 202
Morphological aspects of the association 106
Morphological observations on the Azolla caroliniana-Anabaena symbiosis relevant to physiological 156
Morphological observations/Phenological and comparative 59
Morphology and development of Azolla filiculoides Lam. 71
Morphology and differentiation of sporocarps, germination of zygotes and nutritional properties of 44
Morphology and physiology 113
Morphology and physiology/The Azolla-Anabaena symbiosis: 211
Morphology of Azolla 116
Morphology of the symbiosis/Azolla: 102
Morphology speciation evolution and stratigraphic value of Azolla 122
Mosquito control method/Manatees as a naturalistic biological 457

Mosquito control/Study on the natural enemies of culicid larvae and their role in 671
Mosquito fern (Azolla) 144
Mosquito fern (Azolla caroliniana Willd.) in Tennessee 401
Mosquito larvae/Lemna and 659
Mosquitoes/Azolla caroliniana against 666
Mosquitoes/Azolla v. s. 669
Multiplication and utilization; guide-lines for multiplication/Azolla 487
Multiplication and utilization of fern "Azolla" containing nitrogen fixing algal symbiont as green 567
Multiplication/Azolla 486
Mycorrhizal and algal associations 33
Myriophyllum Spicatum L. var. Exalbescens (Fernald) Jepson grown in 10 or 50% Hoagland solution/Effects 200

N

N balance of two Azolla species/The effect of environmental factors on growth, N_2-fixation and 238
N-fertilization/Combination of Azolla 575
N fertilizer/Effect of Azolla on the yield of paddy with and without application of 566
$^{15}N_2$ fixation, acetylene reduction, and H_2 production 207
N_2-fixation and N balance of two Azolla species/The effect of environmental factors on growth, 238
N_2 fixation in paddy soils/Asymbiotic 137
N_2-fixing blue-green algae/Cellular physiology and the ecology of 232
N_2-fixing systems/Ammonia assimilation in 221
N_2-fixing systems/A synthesis paper on nonleguminous 155
Nāgpur; a preliminary study/Studies in the hydrophytes of 358
Nakai in Tancheng county of Shandong province/The reproductive property of Azolla imbricata (Roxb.) 45
Natural ecosystems in Indonesia/Nitrogen fixation in some 142
Nature, particularly in blue-green algae/On biological nitrogen fixation in 464
Nebraska/Azolla in 373
Neocene West Germany/Spores of Azolla and Salvinia in the 336
Neotropics: an ecological survey of the aquatic weeds Eichhornia crassipes and Salvinia species, and 631
Neotropics/Ecology of water weeds in the neotropics: an ecological survey of the aquatic weeds 631
Netherlands and Czechoslovakia/Structure of vegetation: a comparison of aquatic vegetation in India, 448
Netherlands/Azolla and the age determination of interglacial freshwater deposits in the 298
Netherlands/Azolla in the Paleocene and Pleistocene 295
Netherlands/A comparative study of Azolla in the 108
Netherlands/Electron microscopy of the megaspores of Azolla tegeliensis in the ancient Pleistocene 93a
Netherlands/Fossil Azolla in 297
(Netherlands)/Occurrence of Azolla filiculoides in Pleistocene freshwater clay layer of Oosterbeek 260
Netherlands/On the flora during the penultimate interglacial period of the 299
Netherlands/Studies on the biological control of aquatic weeds in the 658
Netherlands/The two species of Azolla from the Pleistocene deposits of the 296
New York/Azolla caroliniana Willd. in central 356
New Zealand species, and its bearing on taxonomic questions/Epharmonic response in certain 250
New Zealand/The lake weed problem in the north island of 435
New Zealand/Weed preference and growth of young grass carp in 609
Nile of the Sudan/Eichhornia Crassipes in the 307
1966-1967 fertilizer mission and procedures/Various aspects of the 534
Nitrate reduction by the Azolla-Anabaena symbiosis/Effect of light quantity, osmotic stress, temperature 174
Nitrogen association/Symbiosis: 6
Nitrogen by a floating fern/Provisional communication on the fixation of elementary 219
Nitrogen economy of rice soils in relation to nitrogen fixation by blue-green algae and Azolla 568
Nitrogen fertilizer for California rice culture/The use of Azolla as a source of 550
Nitrogen fertilizer for rice/Utilization of the Azolla-Anabaena complex as a 586
Nitrogen fixation 34 160
Nitrogen fixation activity of Azolla imbricata by acetylene reduction/A measure of 245
Nitrogen fixation and agricultural productivity 42
Nitrogen fixation and nitrate reduction by the Azolla-Anabaena symbiosis/Effect of light quantity, 174
Nitrogen fixation and soluble sugar content of water fern Azolla pinnata/Effect of macronutrients and pH 236
Nitrogen fixation and their interrelationship/Photosynthesis 241
Nitrogen fixation as viewed by an agronomist/Symbiotic and nonsymbiotic 246
Nitrogen fixation: basic to applied 9
Nitrogen fixation by algae/The ecology of 522
Nitrogen fixation by Anabaena Azollae 242
Nitrogen fixation by Azolla: a brief review 529
Nitrogen fixation by Azolla-Anabaena association 20
Nitrogen fixation by Azolla for rice crop 530
Nitrogen fixation by Azolla in rice fields 576
Nitrogen fixation by blue-green algae 542
Nitrogen fixation by blue-green algae and Azolla/Nitrogen economy of rice soils in relation to 568
Nitrogen fixation by blue-green algae/Photosynthetic 130
Nitrogen fixation by blue-green algae/Studies on 242 243
Nitrogen fixation by free-living microorganisms and by non-leguminous plants 527
Nitrogen fixation by non-legumes/Symbiotic 143
Nitrogen fixation by Paku Air Tawar (Azolla pinnata)/Growth and 153
Nitrogen fixation by soil algae of temperate and tropical soils 233
Nitrogen-fixation genes -- relevance to increasing world food production/Critique - on "control 8
Nitrogen fixation": genetic derepression of nitrogen-fixation genes -- relevance to increasing world 8
Nitrogen fixation in agriculture and prospects of utilizing nitrogen fixing blue-green algae in 541

Nitrogen fixation in Banaue rice terrace soil and Pangil phosphorus-deficient oxisol 528
Nitrogen fixation in cereals/Enhancing biological 520
Nitrogen fixation in flooded soils: association with the rice plant/Nonsymbiotic 494
Nitrogen fixation in higher plants/Theoretical and experimental aspects of 18
Nitrogen fixation in microorganisms 184
Nitrogen fixation in nature, particularly in blue-green algae/On biological 464
Nitrogen-fixation in non-leguminous plants/Symbiotic 43
Nitrogen fixation in plants: an expanding horizon? 167
Nitrogen fixation in rice and rice fields/Non-symbiotic 584
Nitrogen fixation in soils of the tropics/Constraints to biological 2
Nitrogen fixation in some natural ecosystems in Indonesia 142
Nitrogen fixation in tropical legumes and grasses/Potential for 161
Nitrogen fixation in vegetables/Potential for 588
Nitrogen fixation measurement of Azolla imbricata/A simple method for the in situ 136
Nitrogen fixation of Azolla japonica/A preliminary study of the 224
Nitrogen fixation: prospects for genetic manipulation 186
Nitrogen fixation research: a key to world food? 15
Nitrogen fixation/Advances in biological 10
Nitrogen fixation/Bacterial leaf symbiosis and 176
Nitrogen fixation/Biology and agronomic significance of Azolla-Anabaena symbiotic 492
Nitrogen fixation/Control of biological 559
Nitrogen fixation/Enhancing biological 549
Nitrogen fixation/Novel aspects of 518
Nitrogen fixation/Some biological aspects of 148
Nitrogen-fixing activity of Azolla pinnata/Growth and 152
Nitrogen-fixing alga, Nostoc muscorum/Physiological studies with the 131
Nitrogen fixing algal symbiont as green manure in rice cultivation/Multiplication and utilization 567
Nitrogen-fixing aquatic fern Azolla filiculoides/Nutritive value of the 661
Nitrogen-fixing Azolla-Anabaena complex as fertilizer in paddy soil/Potentiality of 521
Nitrogen fixing blue-green algae in agriculture/Biological nitrogen fixation in agriculture and 541
Nitrogen fixing blue-green algae in rice soils of Sri Lanka and their potential as a fertilizer in 533
Nitrogen-fixing cyanobacteria and their associations with eukaryotic plants 234
Nitrogen-fixing Nostocaceae/On the significance of molybdenum for 149
Nitrogen-fixing organisms 138
Nitrogen for rice/This water fern makes 569
Nitrogen for temperature zone in rice culture/Use of Azolla as a source of 551
Nitrogen in non-leguminous plants/Fixation of free 13
Nitrogen in rice bays/Algae fix 498
Nitrogen metabolism 165
Nitrogen metabolism of the Azolla mexicana-Anabaena azollae symbiosis/Studies of the growth and 175
Nitrogen needs/Common paddy plant fixes 513
Nitrogen nutrition of rice starting with atmospheric nitrogen: researches and practical applications 4
Nitrogen powerhouse/Nostoc: from delicacy to 548
Nitrogen: researches and practical applications/The nitrogen nutrition of rice starting with atmospheric 4
Nitrogen through Azolla/The assimilation of free 31
Nitrogen/A cobalt requirement for symbiotic growth of Azolla filiculoides in the absence of combined 181
Nitrogen/Ecological-hydrobiological study on irrigated rice fields in relation to the fixation of 5
Nitrogen/A few ideas on equating different kinds of nitrogenous fertilizer with pure 515
Nitrogen/The incidence and importance of biological fixation of 147
Nitrogen/Potential impact of current abiological and biological research on the problem of providing 526
Nitrogen/Soils and rice symposium lists research priorities for 21
Nitrogen/Use of Azolla and leaves of Ipomea and Dhiancha as a source of 580
Nitrogenase activity as assayed by acetylene reduction/Localization of 204
Nitrogenase-catalyzed H_2 production/Photosynthetically driven, 206
Nitrogenase-catalyzed reactions/The Azolla-Anabaena azollae symbiosis: 210
Nitrogenous fertilizer with pure nitrogen/A few ideas on equating different kinds of 515
Nitrogenous pools induced by the Azolla-Anabaena azolla symbiosis/Altered 191
Non-legume symbioses/Ecological and economic significance of the 479
Non-legumes/Symbiotic nitrogen fixation by 143
Nonleguminous N_2-fixing systems/A synthesis paper on 155
Non-leguminous plants/Fixation of free nitrogen in 13
Non-leguminous plants/Nitrogen fixation by free-living microorganisms and by 527
Nonsymbiotic nitrogen fixation as viewed by an agronomist/Symbiotic and 246
Nonsymbiotic nitrogen fixation in flooded soils: association with the rice plant 494
Non-symbiotic nitrogen fixation in rice and rice fields 584
Nordheimer Altrhein West Germany district/Azolla filiculoides in the 270
Norfolk/Azolla in 370
North Sea area/Azolla species from the Pleistocene of the Central 267
North Vietnam/Spring rice (xuan); an intensifying factor of rice production in 505
Northern Argentina/Principal limnologic traits of 434
Nostoc-Bryophyte relationship/A cytological analysis of 60
Nostoc: from delicacy to nitrogen powerhouse 548
Nostoc muscorum/Physiological studies with the nitrogen-fixing alga, 131
Nostocaceae 179
Nostocaceae/On the significance of molybdenum for nitrogen-fixing 149
Nucleal reaction/Plain water as a rinsing agent preferable to sulfurous acid after the Feulgen 58
Nutrient value of water fern to rice crop with relation to soil fertilizer and the methods of 509
Nutrients across roots/The role of plasmodesmata in the transport of water and 112

Nutrition of rice starting with atmospheric nitrogen: researches and practical application 4
Nutritional properties of young seedlings/Observations on Azolla's morphology and differentiation 44
Nutritional studies and the effects on growth 199
Nutritive value of the nitrogen-fixing aquatic fern Azolla filiculoides 661
Nutritive value of the water fern Azolla pinnata for chicks 670
Nymphula responsalis attacking Salvinia spp. in Indonesia 590
Nymphula responsalis Wlk. attacking Salvinia spp./Some aspects of the biology of 596

O

Occurrence of Azolla in British interglacial deposits 421
Ohio/Free-floating plants of 473
Oligocene of the Isle of Wight/Megaspores and massulae of Azolla prisca from the 303
Oosterbeek (Netherlands)/Occurrence of Azolla filiculoides in Pleistocene freshwater clay layer 260
Organic matter on the growth of various water plants in culture solution/The effect of 151
Organisms/Nitrogen-fixing 138
Origin and development of plasmodesmata 86
Origin-related control of the numbers of plasmodesmata in cell walls of developing Azolla roots 73
Orissa - response of Pistia stratiotes L., Spirodela Polyrhiza Schleid and Ipomoea Aquatica Forsk. 629
Osmotic stress, temperature and pH on nitrogen fixation and nitrate reduction by the Azolla-Anabaena 174
Oxisol/Nitrogen fixation in Banaue rice terrace soil and Pangil phosphorus-deficient 528
Ozone depletion/Effect of ultraviolet-B (280 to 320 nm) radiation on blue-green algae (cyanobacteria), 192

P

Pacific Islands/Notes on plants of the 302
Pacific or red azolla/Azolla filiculoides Lam.; 344
Paddies/Blue-green algae to fertilize Indian rice 493
Paddy culture/Azolla as a supplemental source for flooded 496
Paddy field green fertilizer (Azolla)/Research on cultivation of plants with the utilization of 578
Paddy fields/Study on the biological characteristics of Azolla pinnata, a green manure crop in 539
Paddy plant fixes nitrogen needs/Common 513
Paddy soil/Potentiality of nitrogen fixing Azolla-Anabaena complex as fertilizer in 521
Paddy soils/Asymbiotic N_2 fixation in 137
Paddy soils/Effect of Azolla on the fertility of 561
Paddy with and without application of N fertilizer/Effect of Azolla on the yield of 566
Padi fields (Peninsular Malaysia)/Weeds in 656
Pakistan and their propagation/Pond weeds of East 606
Paku Air Tawar (Azolla pinnata)/Growth and nitrogen fixation by 153
Paleocene and Pleistocene Netherlands/Azolla in the 295
Paleocene Salviniaceae from the Woolwich/Reading beds near Cobham, Kent/Upper 353
Paleoecology of the Bearpaw and contiguous Upper Cretaceous formations in the Canadian Pacific Oil 483
Paludina clay of Berlin/Azolla filiculoides Lam. from the 294
Palyno flora of the final Tertiary at Sete Herault Southern France 375
Palynological aspects of the Upper Cretaceous of Senegal/Some particular 454
Palynomorphs from South America 410
Palynomorphs from southern South America/New late Cretaceous 410
Pangil phosphorus-deficient oxisol/Nitrogen fixation in Banaue rice terrace soil and 528
Parameters/Initial characterizations and comparisons of five Azolla species: growth 239
Parana River/The Camoeban taxocenoses in island basins in the Middle 444
Paraquat/Diquat and 613
Paraquat/The sensitivity of duckweeds (Lemnaceae) and Azolla to diquat and 602
Pathogens for the control of Salvinia and Pistia/Insects and 600
Pattern of development of Anabaena in the Azolla-Anabaena symbiosis 171
Paxillitriletes, a new name for fossil megaspores hitherto invalidly named Thomsonia 315
Peltigera/Studies on the symbiotic blue-green algae of Anthoceros, Blasia and 235
Penultimate interglacial period of the Netherlands/On the flora during the 299
People's Republic of China/Azolla in Kwangtung province, 540
Periplasma/The importance of the 82
Periplasmodium to the perispore in the megasporocarp of Azolla filiculoides/The formation of 48
Perispore in the megasporocarp of Azolla filiculoides/The formation of threads during the 48
Permian floras/The later Carboniferous vegetation with some account of 399
Pests of the fern Azolla and their control/First report on 595
pH on nitrogen fixation and nitrate reduction by the Azolla-Anabaena symbiosis/Effect of light 174
pH on the growth, nitrogen fixation and soluble sugar content of water fern Azolla pinnata 236
Phenological and comparative morphological observations 59
Philippines/A summary of our present knowledge of the ferns of the 377
Phosphorus-deficient oxisol/Nitrogen fixation in Banaue rice terrace soil and Pangil 528
Photoproduction of molecular hydrogen by a plant-algal symbiotic system 462
Photosynthesis and acetylene reduction in the Azolla-Anabaena symbiosis 188
Photosynthesis and acetylene reduction in the Azolla-Anabaena symbiosis/Action spectra for 215
Photosynthesis, nitrogen fixation and their interrelationship 241
Photosynthesis of Azolla pinnata as affected by light and temperature conditions/The growth 196
Photosynthesis of soybean and Azolla pinnata R. Br./The effect of 2-Pyridylhydroxymethanesulfonic 195
Photosynthetic nitrogen fixation by blue-green algae 130
Photosynthetically driven, nitrogenase-catalyzed H_2 production 206
Phycobiliproteins from the endophytic cyanobacterium of Azolla/Isolation and characterization of 240
Phylogenetic significance/Azolla primaeva and its 326

Phylogeny of living and fossil water ferns of the genus Azolla/Classification and 301
Phylogeny/Some future challenges of fern systematics and 420
Physiological adaptations of Anabaena in the Azolla-Anabaena azollae symbiosis/Ecology and 140
Physiological aspects of Azolla/Preliminary study on some 185
Physiological interaction/New morphological observations on the Azolla caroliniana-Anabaena 156
Physiological studies with Azolla under aseptic conditions 198 199
Physiological studies with the nitrogen-fixing alga, Nostoc muscorum 131
Physiological studies/The Azolla-Anabaena association morphological and 202
Physiology and biochemistry of the Azolla-Anabaena symbiosis 213
Physiology and the ecology of N_2-fixing blue-green algae/Cellular 232
Physiology/The Azolla-Anabaena symbiosis: morphology and 211
Physiology/Morphology and 113
Pigment appearing in Azolla imbricata (Roxb.) Nakai/Preliminary study on the red 225
Pigment content in Spirogyra/Presence of chlorophyllide in hydrophytes and algae of Lake 429
Pisciculture/Balanced vegetation and 433
Pistia stratiotes L., Spirodela Polyrhiza Schleid and Ipomoea Aquatica Forsk. to hormone 629
Pistia/Insects and pathogens for the control of Salvinia and 600
Plant-algal associations/Contribution of 139
Plant-algal symbiotic system/Photoproduction of molecular hydrogen by a 462
Plant associations excluding legumes/Dinitrogen fixation by 562
Plant associations of the soils of Lake Texcoco/Some 472
Plant associations/Lower 190
Plant fixes nitrogen needs/Common paddy 513
Plant improvement/Aspects of Chinese science - genetics and 35
Plant records from the Cromer-forest bed series/Notable 425
Plant tissue/A procedure for the in-vivo determination of enzyme activity in higher 218
Plant/The effects of several algaecides on aquatic 598
Plant/Nonsymbiotic nitrogen fixation in flooded soils: association with the rice 494
Planting and cultivation of spring rice 506
Plants: an expanding horizon?/Nitrogen fixation in 167
Plants and fish/Influence of water quality on toxicity of aquatic herbicides to certain 655
Plants and lower animals/Life in the lake: 438
Plants as fertilizer and feed/Azolla 565
Plants as food by fingerling hybrids of the cross between male Ctenopharyngodon idella [grass carp] 607
Plants can cut your fertilizer expenses/Azolla - these tiny 497
Plants floating free on the surface 461
Plants in culture solution/The effect of organic matter on the growth of various water 151
Plants in inland waters and estuaries/Protists and 467
Plants in Vinh Phuc/The development of green manure 514
Plants observed in northeast Thailand and Laos according to type, common name and scientific 366
Plants of low lying habitats in Jahalpur/A study in the hydrophytes and 477
Plants of Queensland/Aquatic 408
Plants of the Pacific Islands/Notes on 302
Plants of the South West, present distribution and risks of extension/Exotic 611
Plants of the water-side and the larger aquatic plants 437
Plants with the utilization of paddy field green fertilizer (Azolla)/Research on cultivation of 578
Plants/The aesthetic and economic value of aquatic vascular 667
Plants/A classification of 397
Plants/Effect of Bayluscide on the water fern Salvinia auriculata and other aquatic 653
Plants?/Fertilizer and fuel from tiny 187
Plants/Indian silicified 390
Plants/Nitrogen fixation by free-living microorganisms and by non-leguminous 527
Plants/Nitrogen-fixing cyanobacteria and their associations with eukaryotic 234
Plants/Plasmodesmata in higher 111
Plants/Primary mechanisms of integration and growth in 182
Plants/The salient features of aquatic vascular 476
Plants/Some of Queensland's aquatic 644
Plants/Studies on interspecific association of aquatic 145
Plants/Symbiotic nitrogen-fixation in non-leguminous 43
Plants/Theoretical and experimental aspects of nitrogen fixation in higher 18
Plants/Water 17
Plasmodesmata and symplastic transport 77
Plasmodesmata in cell walls of developing Azolla roots/Age-related and origin-related control 73
Plasmodesmata in higher plants 111
Plasmodesmata in the transport of water and nutrients across roots/The role of 112
Plasmodesmata/The origin and development of 86
Plastids in the root of Azolla imbricata/Electronmicrographs on the 92
Pleistocene deposits of the Netherlands/The two species of Azolla from the 296
Pleistocene freshwater clay layer of Oosterbeek (Netherlands)/Occurrence of Azolla filiculoides in 260
Pleistocene Germany/New findings of Azolla in 327
Pleistocene in the German Democratic Republic/Pollen-analytical classification of the Middle 291
Pleistocene Netherlands/Azolla in the Paleocene and 295
Pleistocene of Central Italy/Azolla filiculoides; new record in the lower 300
Pleistocene of north Birmingham/The Middle 335
Pleistocene of the Central North Sea area/Azolla species from the 267
Pleistocene of the Netherlands/Electron microscopy of the megaspores of Azolla tegeliensis in the 93a
Pleistocene vegetation of Syrniki on the river Wieprz 405

Pleuston distribution in the "Las Perdices" pond/Horizontal variation of the mesofauna of the 470
Pliocene of Willershausen/Thallophytes, Kryptogams and Gymnosperms from the 481
Protists and plants in inland waters and estuaries 467
Poland/Azolla filiculoides Lam. in the older interglacial of 404
Policy/Assuring our food supply - technology, resources and 587
Pollen analyses of the Cromer Forest bed series in East Anglia 445
Pollen-analytical classification of the Middle Pleistocene in the German Democratic Republic 291
Pollen record from El-Junco lake, Isla San Cristobal/A Holocene 440
Pollen types in Sapindaceae/A general survey of 363
Pond at Varanasi/Energy studies in macrophytes of a freshwater 458
Pond in relation to primary production of different vegetational zones/Ecosystem study of a 428
Ponds at Cuttack/Control of some aquatic vegetation in fish 635
Ponds at Varanasi/Contribution of Azolla pinnata R. Br. to the productivity of temporary 168
Ponds in India/Observations on the efficacy of grass carp, Ctenopharyngodon idella (Val.), 643
Ponds/Aquatic weed control in fish 623
Pools induced by the Azolla-Anabaena azolla symbiosis/Altered nitrogenous 191
Poultry feed/Utilize azolla in 668
Powerhouse/Nostoc: from delicacy to nitrogen 548
Pre-prophase bands of microtubules in all categories of formative and proliferative cell 78
Problem infestations/Specific 632
Problems on the utilization of Azolla as a green manure in Democratic Republic of Vietnam 536
Procaryotic algae 7
Procedures/Various aspects of the 1966-1967 fertilizer mission and 534
Production in China/The use of Azolla in rice 538
Production in India/Use of Azolla in rice 572
Production in Vietnam/Use of azolla in rice 517
Production/Environmental requirements of Azolla for use in tropical rice 141
Production/New strategy to increase rice 543
Production/The role of blue-green algae [in] enhancing crop 535
Productivities of alfalfa and Azolla/The experiment on effect of ammonia molybdate on the 489
Productivity of temporary ponds at Varanasi/Contribution of Azolla pinnata R. Br. to the 168
Productivity/Nitrogen fixation and agricultural 42
Propagation and small-scale technology/China, Azolla 512
Propagation, and utilization of Azolla/Cultivation, 488
Protein, and chlorophyll between host and symbiont/Distribution of ammonia-assimilating enzymes, 216
Protein and enzymes of ammonia assimilation in the Azolla-Anabaena azollae symbiotic association 217
Protein from Lyngbya-Majuscula and Azolla pinnata 664
Protein quality evaluation and proximate analysis of Azolla filiculoides 662
Protein/Solar 560
Protists and plants in inland waters and estuaries 467
Pteridophyta 374
Pteridophyta new to Zambia 340
Pteridophyta of Taiwan 284
Pteridophyta/A preliminary survey of the distribution of 279
Pteridophytes of the Banks Peninsula (eastern portion) 354
Pteridophytes of the northwest of Argentina/Synopsis of the 282
Pteridophytes/Certain aspects of the reproduction of aquatic 115
Pteridophytes/The process of identification; manual of the major taxa of living 262
Pteridophytes/Shoot apex of 68
Pteridophytes/Taxonomy of Indian 269
Pteridophytic axis from the Deccan intertrappean beds of India/Rhizomites dakshini gen. et sp. nov. 372
Pteridophytic flora of Lucknow District (U. P.) [Uttar Pradesh] 417
Pterophyta - III/Division 47
Pyridylhydroxymethanesulfonic acid (PHMSA) on glycolate oxidase activity and photosynthesis of 195

Q

Quality on toxicity of aquatic herbicides to certain plants and fish/Influence of water 655
Quaternary deposit in Melbourne, Australia/The occurrence of Azolla filiculoides L. and 288
Queensland/Aquatic plants of 408
Queensland's aquatic plants/Some of 644

R

Radiation on blue-green algae (cyanobacteria),possible biological indicators of stratospheric 192
Radiation/Behavior of Azolla caroliniana Willd. under ultra-violet 164
Rajasthan/Aquatic weeds and their distribution in Chambal commanded area in Kota, 604
Rawat-Bhata, India/On the utilization of aquatic weed and growth of white amur at different 642
Reaction/Plain water as a rinsing agent preferable to sulfurous acid 58
Reading beds near Cobham, Kent/Upper Paleocene Salviniaceae from the Woolwich 353
Reconnaissance and chemistry of the lakes and bogs of the Galapagos Islands 442
Red Azolla/Azolla filiculoides Lam.; Pacific or 344
Red pigment appearing in Azolla imbricata (Roxb.) Nakai/Preliminary study on the 225
Red/Chemical controls Azolla 605
Reduction, and H_2 production/$^{15}N_2$ fixation, acetylene 207
Reduction by the Azolla-Anabaena symbiosis/Effect of light quantity, osmotic stress, temperature 174
Reduction in Azolla and Salvinia 117
Reduction in the Azolla-Anabaena symbiosis/Action spectra for photosynthesis and acetylene 215

Reduction in the Azolla-Anabaena symbiosis/Photosynthesis and acetylene 188
Reduction/Localization of nitrogenase activity as assayed by acetylene 204
Reduction/A measure of nitrogen fixation activity of Azolla imbricata by acetylene 245
Regeneration and gemmipary 222
Regions of the cell cortex in Azolla root-tip cells, and hypothesis on the development of cortical 74
Relationship/The Azolla, Anabaena azollae 106
203 - 207
Relationship/An ultrastructural study of the Azolla, Anabaena azollae 61
Reproduction of aquatic Pteridophytes/Certain aspects of the 115
Reproduction of Azolla/Preliminary observations on sexual 126
Reproductive property of Azolla imbricata (Roxb.) Nakai in Tancheng county of Shandong province 45
Research: a key to world food?/Nitrogen fixation 15
Research on tropical and subtropical aquatic weeds in the USA/Distribution and utilization 612
Research priorities for nitrogen/Soils and rice symposium lists 21
Research studies in Thailand; study on self-supply manures/Azolla 557
Researches and practical applications/The nitrogen nutrition of rice starting with atmospheric 4
Resources and policy/Assuring our food supply - technology, 587
Rhine/Tropical water fern in the 422
Rhizoctonia Solani on Azolla pinnata/Incidence of 594
Rhizomites dakshini gen. et sp. nov. a new pteridophytic axis from the Deccan intertrappean beds 372
Riccio flutans - Azolla association: a new ecological indicator of water status in the Tiber 430
Rice and rice fields/Non-symbiotic nitrogen fixation in 584
Rice and the Green Revolution in North Vietnam/The spring 508
Rice bays/Algae fix nitrogen in 498
Rice crop with relation to soil fertilizer and the methods of application/The nutrient value 509
Rice crop/Nitrogen fixation by Azolla for 530
Rice cultivation/Azolla: a precious green compost for 563
Rice cultivation/Green manures in Tonkinese 501
Rice cultivation/Multiplication and utilization of fern "Azolla" containing nitrogen fixing 567
Rice cultivation/Nitrogen fixing blue-green algae in rice soils of Sri Lanka and their potential 533
Rice cultivation/The role of blue-green algae in tropical 581
Rice culture/Azolla and its use in lowland 582
Rice culture/Azolla utilization in 583
Rice culture/The use of Azolla as a source of nitrogen fertilizer for California 550
Rice culture/Use of Azolla as a source of nitrogen for temperature zone in 551
Rice fertilizer and chicken feed/Azolla fern plant 564
Rice field and to increase the rice yield/The use of Azolla to suppress Salvinia in the 616
Rice-field/Studies on Azolla with reference to a green manure for 579
Rice fields for most of the year/Studies on cultivation of Azolla in the 537
Rice fields in relation to the fixation of atmospheric nitrogen/Ecological-hydrobiological 5
Rice fields in the Mediterranean region/The vegetation of the 443
Rice fields/The cultivation of Azolla for animal feed and as green manure for 511
Rice fields/Nitrogen fixation by Azolla in 576
Rice fields/Non-symbiotic nitrogen fixation in rice and 584
Rice growing areas as a major crop/Introducing Azolla in the crop rotation of 516
Rice growing in Vietnam/Some characteristic features of 507
Rice growth/The effect of Azolla pinnata R. Br. on 544
Rice harvest in Ha Tay/Six years of development of the spring 547
Rice paddies/Blue-green algae to fertilize Indian 493
Rice plant/Nonsymbiotic nitrogen fixation in flooded soils: association with the 494
Rice production in China/The use of Azolla in 538
Rice production in India/Use of Azolla in 572
Rice production in North Vietnam/Spring rice (xuan); an intensifying factor of 505
Rice production in Vietnam/Use of azolla in rice 517
Rice production/Environmental requirements of Azolla for use in tropical 141
Rice production/New strategy to increase 543
Rice savants 'discover' blue-green algae 23
Rice soils in relation to nitrogen fixation by blue-green algae and Azolla/Nitrogen economy of 568
Rice soils of Sri Lanka and their potential as a fertilizer in rice cultivation/Nitrogen fixing 533
Rice soils/Decomposition of Azolla pinnata in lowland 503 504
Rice starting with atmospheric nitrogen: researches and practical applications/The nitrogen 4
Rice symposium lists research priorities for nitrogen/Soils and 21
Rice terrace soil and Paugil phosphorus-deficient oxisol/Nitrogen fixation in Banaue 528
Rice without chemicals 555
Rice (xuan); an intensifying factor of rice production in North Vietnam/Spring 505
Rice yield/The use of Azolla to suppress Salvinia in the rice field and to increase the 616
Rice yields in northeastern Thailand/Effect of Azolla as a green manure crop on 558
Rice/Azolla a good manure for 495
Rice/Azolla manuring to 525 574
Rice/Effect of Azolla on yield of 532
Rice/Future of Azolla as fertilizer to winter 545
Rice/Planting and cultivation of spring 506
Rice/This water fern makes nitrogen for 569
Rice/The use of Azolla pinnata as a green manure for 571
Rice/Utilization of the Azolla-Anabaena complex as a nitrogen fertilizer for 586
Ricefields in the Ivory Coast/Weed flora of irrigated 628
Rinsing agent preferable to sulfurous acid after the Feulgen nucleal reaction/Plain water 58
Role of blue-green algae [in] enhancing crop production 535
Role of blue-green algae in tropical rice cultivation 581

Role of microbes 585
Romo, Southwestern Denmark/Late Tertiary from 268
Root apices/The histological organization of 125
Root apices/Morphogenesis and microtubules in Azolla 76
Root hair cell of Azolla imbricata Nakai/Electron microscope observations on the 91
Root hair of Azolla imbricata Nakai/On the granules in the 93
Root hairs by aquatic plants/The production of 223
Root-hairs, cap, and sheath of azolla 98
Root of Azolla filiculoides/On a recent interpretation about the structure attributed to the 53
Root of Azolla filiculoides Lam./Cell cycle studies of the apical cell and its derivative in 105
Root of Azolla imbricata/Electronmicrographs on the plastids in the 92
Root of Azolla/On the structure of the 52a
Root-tip cells, and an hypothesis on the development of cortical arrays of microtubules/Evidence for 74
Rooted aquatic weeds/Floating or generally non- 28
Roots with apical cells 54
Roots/Age-related and origin-related control of the numbers of plasmodesmata in cell walls of 73
Roots/Formative and proliferative cell divisions, cell differentiation, and developmental changes 75
Roots/Pre-prophase bands of microtubules in all categories of formative and proliferative cell 78
Roots/The role of plasmodesmata in the transport of water and nutrients across 112
Rotation of rice growing areas as a major crop/Introducing Azolla in the crop 516

S

Safov in Southern Moravia, Czechoslovakia/The lower Miocene flora from 455
Sagar pond/Ecology of Solah 453
Sahelian zone (Senegal)/First information on the ecology of Azolla africana in the 469
Salinity on growth of several aquatic macrophytes/Effects of 170
Salt marsh plants - case histories and ecological effects/Introduced aquatic, freshwater and 465
Salvinia Adan. and Azolla Lam. 51
Salvinia and Azolla in South America and Africa, in connection with studies for control by insects 382
Salvinia and Azolla/Geographic distribution of 324
Salvinia and Eichhornia/Aquatic weeds 614
Salvinia and Pistia/Insects and pathogens for the control of 600
Salvinia auriculata and other aquatic plants/Effect of Bayluscide on the water fern 653
Salvinia family 338 346
Salvinia family, water velvet; Salviniaceae, Azolla 292
(Salvinia family)/Salviniaceae 310
Salvinia in the Neocene West Germany/Spores of Azolla and 336
Salvinia in the rice field and to increase the rice yield/The use of Azolla to suppress 616
Salvinia natans and Azolla filiculoides grown in light and dark/Free amino acids in the leaves 183
Salvinia Rotundifolia Willd., Spirodela Polyrhiza L. Schleid., Ceratophyllum Demersum L., and 200
Salvinia species, and their natural enemies in the neotropics/Ecology of water weeds in the 631
Salvinia spp. in Indonesia/Nymphula responsalis attacking 590
Salvinia spp./Some aspects of the biology of Nymphula responsalis Wlk. attacking 596
Salvinia/Azolla and 14
Salvinia/Reduction in Azolla and 117
Salviniaceae 64
85 180 248 276
277 280 302 304
328 329 338 346
349 368 376 380
389 400 409 426
Salviniaceae and a new species of Azolla from the late Cretaceous/A new genus of 313
Salviniaceae: Azolla filiculoides Lam. 272
Salviniaceae, Azolla/Salvinia family, water velvet; 292
Salviniaceae from the Woolwich/Reading beds near Cobham, Kent/Upper Paleocene 353
Salviniaceae (Salvinia family) 310
Salviniaceae - water fern family 360 362
(Salviniaceae)/Azolla 384
Salviniaceae)/Azolla (Fam. 271
Salviniaceae/A contribution to the early Tertiary fossil record of the 331
Salviniaceae/Cretaceous 312
Salviniaceae/Cytology of two species of 100
Salviniaceae/History of the 37
Salviniaceae/Notes on fossil 314
Salviniaceae/Pre-Tertiary records of 332
Salviniaceae/Trends in the evolution of fossil 318
Salviniaceous affinity/Ariadnaesporites and glonerisporites, two Cretaceous megaspores of possible 311
Salviniaceous and Marsileaceous megaspores/An ultrastructural comparison of walls of living and 266
Salviniaceous megaspores/A critical study of three Cretaceous 79 265
Salviniales 120
Samea multiplicalis/Life history and biology of 591
Sapindaceae/A general survey of pollen types in 363
Savanna of Bolivia/Araneus pentacantha Walckenaer in the 485a
Science - genetics and plant improvement/Aspects of Chinese 35
Scientists to arms/Vietnam calls its 16
Season/Conservation of Azolla in the warm 491

Seasonal variations of the mesopleuston of the Yalca pond (Province of Buenos Aires)/Spatial 474
Section of Azolla/A new 80
Seedlings/Observations on Azolla's morphology and differentiation of sporocarps, germination 44
Self-supply manures/Azolla research studies in Thailand; study on 557
(Senegal)/First information on the ecology of Azolla africana in the Sahelian zone 469
Senegal/Some particular palynological aspects of the Upper Cretaceous of 454
Sete Herault Southern France/The palyno flora of the final Tertiary at 375
Sexual reproduction of Azolla/Preliminary observations on 126
Seymour Island, Antarctica/Cretaceous and Tertiary dinoflagellates from 319
Shandong province/The reproductive property of Azolla imbricata (Roxb.) Nakai in Tancheng county 45
Sheath of azolla/The root-hairs, cap, and 98
Sher-e-Bangla Nagar/Limnological studies of a jheel in 617
Shlave-2 layer near Anikshchai in the Lithuanian SSR/New data on the flora of the 419
Shoot apex of Pteridophytes 68
Shoot apex/Vegetative 67
Silicified flora of the Deccan intertrappean series 391
Silicified plants/Indian 390
Slovakia/Floristic observations from the surroundings of the town of Hlohovec in 293
Soil algae of temperate and tropical soils/Nitrogen fixation by 233
Soil and Pangil phosphorus-deficient oxisol/Nitrogen fixation in Banaue rice terrace 528
Soil fertilizer and the methods of application/The nutrient value of water fern to rice crop 509
Soil microbes: summary statement/Roles of 22
Soil type and temperature on persistence of atrazine herbicide/The effects of 603
Soil/Decomposition of Azolla pinnata in moist and flooded 502
Soil/Effect of blue-green algae and Azolla application on the aggregation status of the 556
Soil/Potentiality of nitrogen fixing Azolla-Anabaena complex as fertilizer in paddy 521
Soils and rice symposium lists research priorities for nitrogen 21
Soils: association with the rice plant/Nonsymbiotic nitrogen fixation in flooded 494
Soils in relation to nitrogen fixation by blue-green algae and Azolla/Nitrogen economy of rice 568
Soils of Lake Texcoco/Some plant associations of the 472
Soils of Sri Lanka and their potential as a fertilizer in rice cultivation/Nitrogen fixing blue-green 533
Soils of the tropics/Constraints to biological nitrogen fixation to 2
Soils/Asymbiotic N_2 fixation in paddy 137
Soils/Decomposition of Azolla pinnata in lowland rice 503 504
Soils/Effect of Azolla on the fertility of paddy 561
Soils/Nitrogen fixation by soil algae of temperate and tropical 233
Solah Sagar pond/Ecology of 453
Solar protein 560
Solution/The effect of organic matter on the growth of various water plants in culture 151
Source for flooded paddy culture/Azolla as a supplemental 496
Source of nitrogen for temperature zone in rice culture/Use of Azolla as a 551
Source of nitrogen/Use of Azolla and leaves of Ipomea and Dhiancha as a 580
South America and Africa, in connection with studies for control by insects/Distribution 382
South America and Trinidad/Exploration for natural enemies of water hyacinth in northern 599
South America/New late Cretaceous palynomorphs from southern 410
South America/Palynomorphs from 410
South West, present distribution and risks of extension/Exotic plants of the 611
Southern Moravia, Czechoslovakia/The lower Miocene flora from Safov in 455
Soybean and Azolla pinnata R. Br./The effect of 2-Pyridylhydroxymethanesulfonic acid (PHMSA) 195
Spatial and seasonal variations of the mesopleuston of the Yalca pond (Province of Buenos 474
Species: growth parameters/Initial characterizations and comparisons of five Azolla 239
Species in Czechoslovakia/Azolla filiculoides Lam. - newly introduced 406
Species of Azolla from the late Cretaceous/A genus of Salviniaceae and a new 313
Species of Azolla in Uruguay/The two American 323
Species of Azolla subg. Azolla sect. Kremastopora from western and arctic Canada/Early 413
Species of Azolla/The new world 411
Species of Azolla/Notes on the Japanese 427
Species of Salviniaceae/Cytology of two 100
Species/Discovery of fossil Azolla massulae from Japan and some notes on recent Japanese 395
Species/The effect of environmental factors on growth, N_2-fixation and N balance of two Azolla 238
Species/Keys to the genera and 333
Spectra for photosynthesis and acetylene reduction in the Azolla-Anabaena symbiosis/Action 215
Spermatozoids in Azolla massulae/An escape mechanism for 69
Spirodela Polyrhiza L. Schleid., Ceratophyllum Demersum L., and Myriophyllum Spicatum L. var. 200
Spirodela Polyrhiza Schleid and Ipomoea Aquatica Forsk. to hormone herbicides/Studies on the 629
Spirogyra/Presence of chlorophyllide in hydrophytes and algae of Lake Trasimeno and the 429
Sporangium development in Azolla filiculoides/The cytology of 63
Spore record from El Junco Lake, Isla San Cristobal/Holocene 441
Spores of Azolla and Salvinia in the Neocene West Germany 336
Sporocarps and cultured young sporophytes of Azolla imbricata 158
Sporocarps, germination of zygotes and nutritional properties of young seedlings/Observations 44
Sporocarps in Azolla/Differentiation of 107
Sporoderm on the Cenozoic megaspores of the water fern Azolla/Electron microscopy of the 94
Sporophyte of Azolla nilotica 56
Sporophyte of Azolla/New investigations on the 57
Sporophytes of Azolla imbricata/The sporocarps and cultured young 158
Spread of Azolla filiculoides 394

Spring-fed swamp in the Mississippi bottoms of Southern Illinois/The fish population of a 446
Spring growth of Azolla/Notes on the 431
Spring rice and the Green Revolution in North Vietnam 508
Spring rice harvest in Ha Tay/Six years of development of the 547
Spring rice (xuan); an intensifying factor of rice production in North Vietnam 505
Spring rice/Planting and cultivation of 506
Sri Lanka and their potential as a fertilizer in rice cultivation/Nitrogen fixing blue-green 533
Stenopelmus rufinasus (Coleoptera: Curculionidae)/The life history of 593
Stomata in some leptosporangiate ferns/Structure and development of 178
Stomatal types and systematics 281
Strasbourg/Note on the behavior of Azolla filiculoides in the Ile river ecosystem near 452
Stratification/Caloric values of hydrophytes at different vertical 228
Stratigraphic value of Azolla and Azollopsis in the Upper Cretaceous and Lower Tertiary 415
Stratigraphic value of Azolla/Morphology speciation evolution and 122
Stratospheric ozone depletion/Effect of ultraviolet-B (280 to 320 nm) radiation on blue-green 192
Stream and swamp drainage system/Ash basin effluent impact on the aquatic flora of a 468
Structure and development of stomata in some leptosporangiate ferns 178
Structure and life history of Azolla pinnata R. Brown with remarks on the fossil history of the 110
Structure and life history of ferns 87
Structure attributed to the root of Azolla filiculoides/On a recent interpretation about the 53
Structure of Anabaena azollae living on the leaves of Azolla caroliniana/Internal 72
Structure of Azolla massulae 82
Structure of Azolla pinnata/A preliminary note on the 121
Structure of cortical microtubule arrays in plant cells 84
Structure of the root of Azolla/On the 52a
Structure, zonation and succession of aquatic macrophytes/Principles on 36
Structures and waterplants 118
Succession of aquatic macrophytes/Principles on structure, zonation and 36
Sudan/Eichhornia Crassipes in the Nile of the 307
Sugar content of water fern Azolla pinnata/Effect of macronutrients and pH on the growth, nitrogen 236
Sulfurous acid after the Feulgen nucleal reaction/Plain water as a rinsing preferable to 58
Supplemental source for flooded paddy culture/Azolla as a 496
Supply manures/Azolla research studies in Thailand; study on self- 557
Supply - technology, resources and policy/Assuring our food 587
Suppress Salvinia in the rice field and to increase the rice yield/The use of Azolla to 616
Swamp drainage system/Ash basin effluent impact on the aquatic flora of a stream and 468
Swamp in the Mississippi bottoms of Southern Illinois/The fish population of a spring-fed 446
Symbiont as green manure in rice cultivation/Multiplication and utilization of fern "Azolla" 567
Symbiont/The aquatic fern Azolla and its Anabaena 132
Symbiont/Distribution of ammonia-assimilating enzymes, protein, and chlorophyll between host 216
Symbiont/Studies of metabolic capabilities and a further characterization on the 205
Symbioses between Azolla and Anabaena/Contributions to the information of 177
Symbioses/Ecological and economic significance of the non-legume 479
Symbiosis 157, 166
Symbiosis and epiphytism 169
Symbiosis and nitrogen fixation/Bacterial leaf 176
Symbiosis: morphology and physiology/The Azolla-Anabaena 211
Symbiosis: Nitrogen association 6
Symbiosis: nitrogenase-catalyzed reactions/The Azolla-Anabaena azollae 210
Symbiosis of Anabaena with Azolla/On the issue of the 99
Symbiosis of Azolla and Anabaena/Further contribution to the 247
Symbiosis relevant to physiological interaction/New morphological observations on the Azolla 156
Symbiosis with blue-green algae/Analysis of Azolla and its 220
Symbiosis/Action spectra for photosynthesis and acetylene reduction in the Azolla-Anabaena 215
Symbiosis/Altered nitrogenous pools induced by the Azolla-Anabaena azolla 191
Symbiosis/Azolla africana-Anabaena azollae 19
Symbiosis/The Azolla-Anabaena azollae 208 209
Symbiosis/Azolla: morphology of the 102
Symbiosis/Ecology and physiological adaptations of Anabaena in the Azolla-Anabaena azollae 140
Symbiosis/Effect of light quantity, osmotic stress, temperature and pH on nitrogen fixation 174
Symbiosis/The pattern of development of Anabaena in the Azolla-Anabaena 171
Symbiosis/Photosynthesis and acetylene reduction in the Azolla-Anabaena 188
Symbiosis/Physiology and biochemistry of the Azolla-Anabaena 213
Symbiosis/The role of Anabaena in the Azolla-Anabaena 172
Symbiosis/Studies on the Azolla-Anabaena Azollae 214
Symbiotic and nonsymbiotic nitrogen fixation as viewed by an agronomist 246
Symbiotic association/Levels of chlorophyll, protein and enzymes of ammonia assimilation 217
Symbiotic blue-green algae Anabaena azollae/Heterocyst spacing in the 237
Symbiotic blue-green algae of Anthoceros, Blasia and Peltigera/Studies on the 235
Symbiotic growth of Azolla filiculoides in the absence of combined nitrogen/A cobalt requirement 181
Symbiotic nitrogen fixation by non-legumes 143
Symbiotic nitrogen-fixation in non-leguminous plants 43
Symbiotic nitrogen fixation/Biology and agronomic significance of Azolla-Anabaena 492
Symbiotic system/Photoproduction of molecular hydrogen by a plant-algal 462
Symplastic transport/Plasmodesmata and 77
Syrniki on the river Wieprz/Pleistocene vegetation of 405
Systematics and phylogeny/Some future challenges of fern 420

Systematics/Stomatal types and 281
Systems/Ammonia assimilation in N_2-fixing 221
Systems/A synthesis paper on nonleguminous N_2-fixing 155

T

Taiwan/The aquatic ferns of 284
Taiwan/The pteridophyta of 284
Tancheng county of Shandong province/The reproductive property of Azolla imbricata (Roxb.) 45
Taxa of living Pteridophytes/The process of identification; manual of the major 262
Taxocenoses in island basins in the Middle Parana River/The Camoeban 444
Taxonomic questions/Epharmonic response in certain New Zealand species, and its bearing on 250
Taxonomy, evolution, and stratigraphic value of Azolla and Azollopsis in the Upper Cretaceous 415
Taxonomy of Indian pteridophytes 269
Technology in agriculture/Latest 553
Technology, resources and policy/Assuring our food supply - 587
Temperature and pH on nitrogen fixation and nitrate reduction by the Azolla-Anabaena symbiosis 174
Temperate and tropical soils/Nitrogen fixation by soil algae of 233
Temperature coefficient and growth of Azolla filiculoides/Interrelationship between the 129
Temperature conditions/The growth and the photosynthesis of Azolla pinnata as affected by light 196
Temperature on persistence of atrazine herbicide/The effects of soil type and 603
Temperature on the growth of Azolla filiculoides/Effect of light intensity and 127
Temperature zone in rice culture/Use of Azolla as a source of nitrogen for 551
Tennessee/The mosquito fern (Azolla caroliniana Willd.) in 401
Terrace soil and Pangil phosphorus-deficient oxisol/Nitrogen fixation in Banaue rice 528
Tertiary at Sete Herault Southern France/The palyno flora of the final 375
Tertiary Azolla from British Columbia 253
Tertiary Azolla from Romo, Southwestern Denmark/Late 268
Tertiary dinoflagellates from Seymour Island, Antarctica/Cretaceous and 319
Tertiary floras of the USSR/New species of Azolla Lam. in 285
Tertiary fossil record of the Salviniaceae/A contribution to the early 331
Tertiary period 396
Tertiary records of Salviniaceae/Pre- 332
Tertiary species of Azolla subg. Azolla sect. Kremastopora from western and arctic Canada 413
Tertiary/Evolution of Azolla and Azollopsis during the Upper Cretaceous and lower 414
Tertiary/The taxonomy, evolution, and stratigraphic value of Azolla and Azollopsis in the 415
Texas pteridophyta/A preliminary survey of the distribution of 279
Texcoco/Some plant associations of the soils of Lake 472
Thailand and Laos according to type, common name and scientific name/Summary of aquatic plants 366
Thailand; study on self-supply manures/Azolla research studies in 557
Thailand/Effect of Azolla as a green manure crop on rice yields in northeastern 558
Thallophytes, Kryptogams and Gymnosperms from the Pliocene of Willershausen 481
Theoretical and experimental aspects of nitrogen fixation in higher plants 18
Thomsonia/Paxillitriletes, a new name for fossil megaspores hitherto invalidly named 315
Threads during the development of the periplasmodium to the perispore in the megasporocarp 48
Tiber river/Riccio flutans - Azolla association: a new ecological indicator of water status 430
Tilapia mosambica as a fish for aquatic weed control 621
Tissue/A procedure for the in-vivo determination of enzyme activity in higher plant 218
Tolerance of Azolla pinnata as influenced by the trace elements Mn and Cu/The heat 197
Tonkin/The cultivation of Azolla in 500
Tonkinese rice cultivation/Green manures in 501
Torrey Club/Proceedings of the 378
Toxicity of aquatic herbicides to certain plants and fish/Influence of water quality on 655
Trace elements Mn and Cu/The heat tolerance of Azolla pinnata as influenced by the 197
Transfer cells 55
Transport/Plasmodesmata and symplastic 77
Trapa bispinosa Roxb./A study of the autecology of 480
Trasimeno and the variability of pigment content in Spirogyra/Presence of chlorophyllide in 429
Trinidad/Exploration for natural enemies of water hyacinth in northern South America and 599
Triterpenoid hydrocarbons from ferns/Alipathic and 150
Trivandrum, Kerala/Observations on the aquatic vegetation of 647
Tropical and subtropical aquatic weeds in the USA/Distribution and utilization research on 612
Tropical aquatic weeds/Control of 637
Tropical legumes and grasses/Potential for nitrogen fixation in 161
Tropical pond in relation to primary production of different vegetational zones/Ecosystem 428
Tropical rice cultivation/The role of blue-green algae in 581
Tropical rice production/Environmental requirements of Azolla for use in 141
Tropical soils/Nitrogen fixation by soil algae of temperate and 233
Tropical water fern in the Rhine 422
Tropics/Biological control of aquatic weeds: perspectives for the 636
Tropics/Constraints to biological nitrogen fixation in soils of the 2
Tropics/Other vegetation types of the humid 484

U

USA/Distribution and utilization research on tropical and subtropical aquatic weeds in the 612
USSR/New species of Azolla Lam. in Tertiary floras of the 285

Ultrastructural comparison of walls of living and fossil Salviniaceous and Marsileaceous 266
Ultrastructural effects of herbicides on Lemna and Azolla 622
Ultrastructural study of the Azolla, Anabaena azollae relationship 62
Ultraviolet-B (280 to 320 nm) radiation on blue-green algae (cyanobacteria), possible biological 192
Ultra-violet radiation/Behavior of Azolla caroliniana Willd. under 164
Umred/Studies in the hydrophytes of 359
Upper Cretaceous and Lower Tertiary/The taxonomy, evolution, and stratigraphic value of Azolla 415
Upper Cretaceous Edmonton formation, Alberta, Canada/Azolla from the 407
Upper Cretaceous formations in the Canadian Pacific Oil and Gas Strathmore Well, Southern Alberta 483
Upper Cretaceous of Senegal/Some particular palynological aspects of the 454
Uruguay/The two American species of Azolla in 323
Utilization; guide-lines for multiplication/Azolla multiplication and 487
Utilization of Azolla as a green manure in Democratic Republic of Vietnam/The problems on the 536
Utilization of Azolla/Cultivation, propagation, and 488
Utilization of fern "Azolla" containing nitrogen fixing algal symbiont as green manure in rice 567
Utilization of the Azolla-Anabaena complex as a nitrogen fertilizer for rice 586
Utilization research on tropical and subtropical aquatic weeds in the USA/Distribution and 612
Utricularia and a mixture of Azolla and Lemna/Relative growth of the grass carp, Ctenopharyngodon 650
[Uttar Pradesh]/Pteridophytic flora of Lucknow District (U. P.) 417

V

Varanasi/Contribution of Azolla pinnata R. Br. to the productivity of temporary ponds at 168
Varanasi/Energy studies in macrophytes of a freshwater pond at 458
Variations of the mesopleuston of the Yalca pond (Province of Buenos Aires)/Spatial and 474
Vascular hydrophytes on Lake Kariba/The ecology of 460
Vascular plants 361
Vascular plants in a Quaternary deposit in Melbourne, Australia/The occurrence of Azolla 288
Vascular plants/The aesthetic and economic value of aquatic 667
Vascular plants/The salient features of aquatic 476
Vasculature in some aquatic ferns/The leaf architecture and 101
Vegetables/Potential for nitrogen fixation in 588
Vegetation: a comparison of aquatic vegetation in India, the Netherlands and Czechoslovakia 448
Vegetation and pisciculture/Balanced 433
Vegetation in fish ponds at Cuttack/Control of some aquatic 635
Vegetation in India, the Netherlands and Czechoslovakia/Structure of 448
Vegetation of Syrniki on the river Wieprz/Pleistocene 405
Vegetation of the Danube waterbodies in Bulgaria and its change under the effect of humans 456
Vegetation of the rice fields in the Mediterranean region 443
Vegetation of Trivandrum, Kerala/Observations on the aquatic 647
Vegetation types of the humid tropics/Other 484
Vegetation with some account of Permian floras/The later Carboniferous 399
Vegetation/Aquatic 611
Vegetational zones/Ecosystem study of a tropical pond in relation to primary production 428
Vegetative remains of Azolla schopfii Dijkstra from Genesee, Alberta 416
Vegetative shoot apex 67
Vertical stratification/Caloric values of hydrophytes at different 228
Vietnam calls its scientists to arms 16
Vietnam/The problems on the utilization of Azolla as a green manure in Democratic Republic of 536
Vietnam/Some characteristic features of rice growing in 507
Vietnam/The spring rice and the Green Revolution in North 508
Vietnam/Spring rice (xuan); an intensifying factor of rice production in North 505
Vietnam/Use of azolla in rice production in 517
Vinh Phuc/The development of green manure plants in 514
Violet radiation/Behavior of Azolla caroliniana Willd. under ultra- 164
Virginia/Azolla and its occurrence in 369

W

Walls of living and fossil Salviniaceous and Marsileaceous megaspores/An ultrastructural 266
Warm season/Conservation of Azolla in the 491
Water and nutrients across roots/The role of plasmodesmata in the transport of 112
Water as a rinsing agent preferable to sulfurous acid after the Feulgen nucleal reaction 58
Water-blooms/Biological productivity of inland waters with special reference to 226
Water fern - (Azolla caroliniana Willd.) 610
Water fern, Azolla filiculoides/A wild 114
Water fern Azolla pinnata for chicks/Nutritive value of the 670
Water fern Azolla pinnata/Effect of macronutrients and pH on the growth, nitrogen fixation and 236
Water fern Azolla/Electron microscopy of the sporoderm on the Cenozoic megaspores of the 94
Water fern family/Salviniaceae - 360 362
Water fern in the Rhine/Tropical 422
Water fern makes nitrogen for rice 569
Water fern Salvinia auriculata and other aquatic plants/Effect of Bayluscide on the 653
Water fern tu rice crop with relation to soil fertilizer and the methods of application 509
Water fern with dicsoline/Control of 634
Water ferns 64 104
Water ferns of the genus Azolla/Classification and phylogeny of living and fossil 301

Water hyacinth in northern South America and Trinidad/Exploration for natural enemies of 599
Water level manipulation: a tool for aquatic weed control 640
Water plants 17
Water plants in culture solution/The effect of organic matter on the growth of various 151
Water quality on toxicity of aquatic herbicides to certain plants and fish/Influence of 655
Water-side and the larger aquatic plants/Plants of the 437
Water status in the Tiber river/Riccio flutans - Azolla association: a new ecological 430
Water velvet; Salviniaceae, Azolla/Salvinia family, 292
Water weed problem in Australia 601
Water weeds in fishery tanks/Practical methods for controlling the 633
Water weeds in the neotropics: an ecological survey of the aquatic weeds Eichhornia crassipes 631
Waterbodies in Bulgaria and its change under the effect of humans and conservation/The macrophyte 456
Waterplants/Structures and 118
Waters and estuaries/Protists and plants in inland 467
Waters with special reference to waterblooms/Biological productivity of inland 226
Waters/Minor metallic elements in lake 451
Waterweed problem/Taking a bite at the 608
Waterweeds and its persistence/Effect of granular 2, 4-D on some 620
Weed and growth of white amur at different stages of life at Kota and Rawat-Bhata, India 642
Weed control in fish ponds/Aquatic 623
Weed control with special reference to the use of chemicals/Investigation on aquatic 639
Weed control/Aquatic 625
Weed control/Tilapia mosambica as a fish for aquatic 621
Weed control/Use grass carp for 649
Weed control/Water level manipulation: a tool for aquatic 640
Weed flora of irrigated ricefields in the Ivory Coast 628
Weed: herbicide guide 646
Weed identification and control 627
Weed preference and growth of young grass carp in New Zealand 609
Weed problem in Australia/The water 601
Weed problem in the north island of New Zealand/The lake 435
Weedkiller/Diquat - a new contact 651
Weeds and their distribution in Chambal commanded area in Kota, Rajasthan/Aquatic 604
Weeds Eichhornia crassipes and Salvinia species, and their natural enemies in the neotropics 631
Weeds found in Guyana/Aquatic 251
Weeds in fishery tanks/Practical methods for controlling the water 633
Weeds in Indiana/Potential of the white amur (Ctenopharyngodon idella Val.) as a biological 654
Weeds in irrigation channels and ditches 652
Weeds in man-made lakes/Aquatic 630
Weeds in padi fields (Peninsular Malaysia) 656
Weeds in ponds in India/Observations on the efficacy of grass carp, Ctenopharyngodon idella 643
Weeds in the neotropics: an ecological survey of the aquatic weeds Eichhornia crassipes and 631
Weeds in the Netherlands/Studies on the biological control of aquatic 658
Weeds in the USA/Distribution and utilization research on tropical and subtropical aquatic 612
Weeds mean trouble/These 626
Weeds of East Pakistan and their propagation/Pond 606
Weeds of Orissa - response of Pistia stratiotes L., Spirodela Polyrhiza Schleid and Ipomoea 629
Weeds of ponds in Assam, India/Aquatic 638
Weeds: perspectives for the tropics/Biological control of aquatic 636
Weeds (preliminary survey)/Economic damage caused by aquatic 648
Weeds Salvinia and Eichhornia/Aquatic 614
Weeds to herbicides/The susceptibility of aquatic 645
Weeds/The classification of 619
Weeds/The control of aquatic 641
Weeds/Control of tropical aquatic 637
Weeds/Effect of four herbicides on some aquatic 618
Weeds/Floating or generally non-rooted aquatic 28
Weeds/Identification of aquatic 624
Weeds/Lepidopterous insects as biological control agents of aquatic 615
Weeds/The world of 597
White amur at different stages of life at Kota and Rawat-Bhata, India/On the utilization 642
Wicklow/Azolla filiculoides Lam. in county 273
Wieprz/Pleistocene vegetation of Syrniki on the river 405
Willershausen/Thallophytes, Kryptogams and Gymnosperms from the Pliocene of 481
Woolwich/Reading beds near Cobham, Kent/Upper Paleocene Salviniaceae from the 353
Wunstorf at Hanover and the probable age of this interglacial/Azolla filiculoides 388

Y

Yalca pond (Province of Buenos Aires)/Spatial and seasonal variations of the mesopleuston of the 474
Yield of paddy with and without application of N fertilizer/Effect of Azolla on the 566
Yield of rice/Effect of Azolla on 532
Yield/The use of Azolla to suppress Salvinia in the rice field and to increase the rice 616
Yields in northeastern Thailand/Effect of Azolla as a green manure crop on rice 558

Z

Zambia/The pteridophyta new to 340
Zonation and succession of aquatic macrophytes/Principles on structure, 36
Zuideindigerwiede, a unique land-making area 478
Zygotes and nutritional properties of young seedlings/Observations on Azolla's morphology and 44