ORNL/TM-5818

MARTIN MARIETTA ENERGY SYSTEMS LIBRARIES

3 4456 0059840 4

Bibliography of Taxonomic Literature for the Identification of Fruits, Seeds, and Vegetative Plant Fragments

Paul A. Delcourt
Owen K. Davis
Robert C. Bright

Environmental Sciences Division
Publication No. 1328

OAK RIDGE NATIONAL LABORATORY
CENTRAL RESEARCH LIBRARY
CIRCULATION SECTION
4500N ROOM 175
LIBRARY LOAN COPY
DO NOT TRANSFER TO ANOTHER PERSON
If you wish someone else to see this report, send in name with report and the library will arrange a loan.

OAK RIDGE NATIONAL LABORATORY
OPERATED BY UNION CARBIDE CORPORATION - FOR THE DEPARTMENT OF ENERGY

Printed in the United States of America. Available from
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road, Springfield, Virginia 22161
Price: Printed Copy $6.00; Microfiche $3.00

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, contractors, subcontractors, or their employees, makes any warranty, express or implied, nor assumes any legal liability or responsibility for any third party's use or the results of such use of any information, apparatus, product or process disclosed in this report, nor represents that its use by such third party would not infringe privately owned rights.

ORNL/TM-6818

Contract No. W-7405-eng-26

BIBLIOGRAPHY OF TAXONOMIC LITERATURE FOR THE IDENTIFICATION OF FRUITS, SEEDS, AND VEGETATIVE PLANT FRAGMENTS[1,2]

Compiled by

Paul A. Delcourt,

Program for Quaternary Studies of the Southeastern United States,
Department of Geological Sciences and Graduate Program in Ecology,
University of Tennessee, Knoxville 37916

Owen K. Davis and Robert C. Bright

Department of Ecology and Behavioral Biology,
University of Minnesota, Minneapolis, Minnesota 55455

Environmental Sciences Division
Publication No. 1328

---

[1]Contribution No. 14, Program for Quaternary Studies of the Southeastern United States, Department of Geological Sciences, University of Tennessee, Knoxville, Tennessee 37916.

[2]Research sponsored by the National Science Foundation's Ecosystem Studies Program under Interagency Agreement No. DEB-77-26722 with the U.S. Department of Energy.

Date Published: August 1979

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
operated by
UNION CARBIDE CORPORATION
for the
DEPARTMENT OF ENERGY

MARTIN MARIETTA ENERGY SYSTEMS LIBRARIES

3 4456 0059840 4

ACKNOWLEDGMENTS

We wish to thank the following people for their active interest and for supplying citations for this bibliography: Hazel R. Delcourt, Nancy Eyster-Smith, Konrad Gajewski, Paul H. Glaser, Robert R. Haynes, Stephen T. Jackson, John W. King, Jerry S. Olson, Linda C. K. Shane, Val Smith, Allen M. Solomon, Ray W. Spear, Claudia Wang, and Frieda Wertman. We gratefully acknowledge access to the personal library of Herbert E. Wright, Jr., of the University of Minnesota. The computer bibliographic searches and final compilations of this manuscript were undertaken at the Environmental Sciences Division at Oak Ridge National Laboratory.

ABSTRACT

DELCOURT, P. A., O. K. DAVIS, and R. C. BRIGHT. 1979. Bibliography of taxonomic literature for the identification of fruits, seeds, and vegetative plant fragments. ORNL/TM-6818. Oak Ridge National Laboratory, Oak Ridge, Tennessee. 83 pp.

This bibliography represents a major consolidation of citations from a large volume of taxonomic literature in order to facilitate and improve identifications of Quaternary plant macrofossils.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
ABSTRACT	v
INTRODUCTION	1
KEYS, ATLASES, BIBLIOGRAPHIES, AND MANUALS FOR FRUIT AND SEED IDENTIFICATION	3
GENERAL LITERATURE	6
TAXONOMIC LITERATURE FOR FRUIT AND SEED IDENTIFICATION, ARRANGED BY PLANT FAMILIES	9
WEED SEEDS	47
CONIFER NEEDLES: EPIDERMAL AND ANATOMICAL FEATURES	49
VEGETATIVE PLANT FRAGMENTS	54
OPAL PHYTOLITHS	59
WOOD AND CHARCOAL IDENTIFICATION	66

INTRODUCTION

Accurate determination of the taxonomic affinities of plant macrofossils recovered from Quaternary lacustrine and alluvial sediments is dependent upon the availability of a comprehensive reference collection of vouchered plant specimens. In addition to such a reference collection, familiarity with modern taxonomic literature is necessary for definitive identifications. This bibliography represents a first attempt to consolidate citations from a large volume of literature to facilitate plant macrofossil identifications. Most of these citations are written in English and are relevant to North American plant species. We request users of this bibliography to assist in keeping this list up to date by indicating additions or corrections as needed.

The first section of this bibliography provides a list of keys, atlases, bibliographies, and manuals that facilitate the identification of fruits, seeds, and vegetative plant fragments to family and generic level. Regional and local floras cited in the section 'General References' contain particularly valuable illustrations and descriptions of many plant taxa commonly preserved as macrofossils. Following the list of general references is a compilation of taxonomic literature, arranged by plant families (taxonomy follows Gleason and Cronquist, 1963), pertinent to identification of fruits and seeds to the species level. The remainder of the bibliography consists of four special topics: (1) weed seeds, of particular interest to agronomists, anthropologists, and archeologists; (2) conifer needles, the most

commonly preserved and recovered leaf fragments; (3) vegetative plant fragments, excluding conifer needles and wood; (4) opal phytoliths; and (5) wood and charcoal identification. An asterisk (*) is placed by each citation that is especially important for providing a general overview to the subject, comprehensive keys, descriptions, or illustrations, or a significant taxonomic revision of a specified group.

KEYS, ATLASES, BIBLIOGRAPHIES AND MANUALS FOR FRUIT AND SEED IDENTIFICATION

Ball, C. C. 1939. An artificial key to common shrub and herb seeds of southern Michigan and vicinity. Unpublished Thesis, University of Michigan, Ann Arbor.

Barton, L. V. (Compiler). 1967. Bibliography of seeds. Columbia University Press, New York.

* Beijerinck, W. 1947. Zadenatlas der Nederlandsche flora. E. Veenman and Zonen, Wageningen, 316 pp. (Partial English translation by E. E. Gaertner).

* Bertsch, K. 1941. Handbucher der praktischen Vorgeschichtsforschung: Fruchte und Samen. Verlag Ferdinand Enke Stuttgart, Germany, 247 pp. (Partial English translation by R. O. Kapp).

Bomhard, M. L. 1926. Taxonomic studies of seeds of selected groups of the plants of western Pennsylvania with keys and descriptions. Unpublished Ph.D. Dissertation, University of Pittsburgh.

Bright, R. C., and O. K. Davis (Compilers). 1977. Bibliography, Course EBB 8390. University of Minnesota, Minneapolis, 17 pp.

Chitrowo, W. 1914. Atlas von Samen und Früchten der feldundrauter aus Mittelrussland. Bull. Angew. Bot. 7(3):181-202.

* Corner, E. J. H. 1976. The seeds of dicotyledons, Volumes 1 and 2. Cambridge University Press, New York.

* Delorit, R. J. 1970. An illustrated taxonomy manual of weed seeds. Agronomy Publications, River Falls, Wisconsin, 175 pp.

Franck, W. J., and W. H. Bruijning (Compilers). 1931. General seed bibliography. International Seed Testing Association Comm. Pub. and Registr., Parts 1&2:1-622.

Freckmann, and Brower. 1927. Atlas der samenkunde. Neumann Neudamm.

* Gaertner, E. E. 1953. Key to "seeds" of fleshy fruits. Transactions of the Royal Canadian Institute 30(1):33-44, 2 plates.

* Gaertner, E. E. (English Translator and Arranger). 1954. Beijerinck, W., and J. Scurti, two keys for the identification of "seeds". Research Council of Ontario, Toronto.

Cont. KEYS, ATLASES, BIBLIOGRAPHIES AND MANUALS

* Godwin, Sir H. 1975. The history of the British flora, a factual basis for phytogeography, second edition. Cambridge University Press, Cambridge, England, 541 pp.

Gunn, C. R., J. V. Dennis, and P. J. Paradine. 1976. World guide to tropical drift seeds and fruits. Quadrangle, The New York Times Book Co., New York, 240 pp.

* Harlow, W. M. 1959. Fruit key and twig key to trees and shrubs. Dover Publications, Inc., New York, 106 pp.

* Isley, D. 1947. Investigations in seed classification by family characteristics. Iowa Agricultural Experiment Station Research Bulletin 351:1-63.

* Katz, N. Ja., S. V. Katz, and M. G. Kipiani. 1965. Atlas and keys of fruits and seeds occurring in the Quaternary deposits of the U.S.S.R. Academy of Sciences of the U.S.S.R., Commission for Investigations of the Quaternary Period, Nauka, Moscow, 367 pp. (Partial English translation by J. C. Ritchie).

Körber-Grohne, V. 1964. Bestimmungsschlüssel für subfossile Juncus-Samen und Gramineen-Früchte. Probleme der Kustenforschung im Sudlichen Nordseegebiet 7, Hildersheim, August Lax, Germany.

* Landers, J. L., and A. S. Johnson. 1976. Bobwhite quail food habits in the southeastern United States with a seed key to important foods. Tall Timbers Research Station, Tallahassee, Florida, Misc. Publ. 4:1-90.

* McClure, D. S. 1957. Seed characters of selected plant families. Iowa State College, Journal of Science 31:649-682.

* Martin, A. C. 1946. The comparative internal morphology of seeds. American Midland Naturalist 36:513-660.

* Martin, A. C., and W. D. Barkley. 1961. Seed identification manual. University of California Press, Berkeley, 221 pp.

* Montgomery, F. H. 1977. Seeds and fruits of plants of eastern Canada and northeastern United States. University of Toronto Press, Toronto, Ontario, and Buffalo, New York, 232 pp.

Palmer, E. L. 1916. A seed key to some common weeds and plants. Proceedings of the Iowa Academy of Science 23:335-394.

Cont. KEYS, ATLASES, BIBLIOGRAPHIES AND MANUALS

Peterson, M. G. 1973. How to know the wild fruits: a guide to plants when not in flower by means of fruit and leaf (with a new table of changes in nomenclature by E. S. Harrar). Dover Publications, Inc., New York, 340 pp.

* Renfrew, J. M. 1973. Palaeoethnobotany, the prehistoric food plants of the Near East and Europe. Methuen & Co. ltd., 11 New Fetter Lane, London EC 4, Great Britain, 248 pp., 48 plates.

* Schopmeyer, C. S. (Coordinator). 1974. Seeds of woody plants in the United States. U.S.D.A. Agricultural Handbook No. 450:1-883.

Swarbrick, J. T. 1970. The identification of the seeds and fruits of common Scottish aquatic herbs. Botanical Society of Edinburgh, Transactions 41(1):9-25.

U.S.D.A. 1948. Woody-plant seed manual. U.S.D.A. Misc. Publ. No. 654:1-416.

U.S.D.A., Office of Information, Division of Photography. (no date) Seed drawings, Plates 1 to 15 (15 photographic plates, seeds of 24 species per plate).

Wright, W. H. 1950-1955. Weed seeds. Canadian Department of Agriculture, Queen's Printer, Ottawa, Ontario. 8 sections with 36 species per section, $1.50 per section.

GENERAL LITERATURE

Beck, von M. G. 1934. Früchte und Samen. Handworterbuch der Naturwissenschaften 4:402-435.

Brouwer, W., and A. Stahlin. 1955. Handbuche der Samenkunde. DLG-Verlags-Gmbl., Frankfurt, 656 pp.

Coker, W. C., and H. R. Totten. 1937. Trees of the southeastern United States. University of North Carolina Press, Chapel Hill, 417 pp.

Correll, D. S., and H. B. Correll. 1972. Aquatic and wetland plants of southwesten United States. U. S. Environmental Protection Agency, Water Pollution Control Research Series, 1777 pp.

Correll, D. S., and M. C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner, Texas, 1881 pp.

* Dickson, C. A. 1970. The study of plant macrofossils in British Quaternary deposits, pp. 233-254. In Walker, D., and R. W. West (Eds.), Studies in the vegetational history of the British Isles, Cambridge University Press, Cambridge, Great Britain.

Esau, K. 1961. Anatomy of seed plants. John Wiley and Sons, Inc., New York, 376 pp.

Esau, K. 1965. Plant anatomy, second edition. John Wiley and Sons, Inc., New York, 767 pp.

Fassett, N. C. 1957. A manual of aquatic plants (with revision appendix by E. C. Ogden). University of Wisconsin Press, Madison, 405 pp.

Fernald, M. L. 1950. Gray's manual of botany, eighth (centennial) edition. American Book Co., New York, 1632 pp.

Fowells, H. A. (Compiler). 1965. Silvics of forest trees of the United States. U.S.D.A. Agricultural Handbook No. 271:1-762.

Gleason, H. A. 1958. The new Britton and Brown illustrated flora of the northeastern United States and adjacent Canada, Volumes 1 to 3. New York Botanical Garden, Lancaster Press, Inc., Lancaster, Pennsylvania.

Gleason, H. A., and A. Cronquist. 1963. Manual of vascular plants of northeastern United States and adjacent Canada. D. Van Nostrand Co., Inc., Princeton, New Jersey, 810 pp.

Cont. GENERAL LITERATURE

* Gunn, C. R. 1972. Seed collection and identification, pp. 55-143. In Kozlowski, T. T., (Ed.), Seed biology, Volume 3. Academic Press, New York.

* Gunn, C. R., and M. J. Selden. 1977. Preparing seed and fruit characters for a computer with discussion of five useful programs. Seed Science and Technology 5:1-40.

Harlow, W. M., and E. S. Harrar. 1969. Textbook of dendrology covering the important forest trees of the United States and Canada, fifth edition. McGraw-Hill Book Co., New York, 512 pp.

Harper, J. L., P. H. Lovell, and K. G. Moore. 1970. The shapes and sizes of seeds. Annual Review Ecol. Syst. 1:327-356.

Harrar, E. S., and J. G. Harrar. 1962. Guide to southern trees, second edition. Dover Publications, Inc., New York, 709 pp.

Hillman, F. H., and H. H. Henry. 1935. The more important forage plant seeds and incidental seeds found with them. U.S.D.A., Bureau of Plant Industry, Seeds Investigation.

Hitchcock, C. L., A. Cronquist, M. Ownbey, and J. W. Thompson. 1969. Vascular plants of the Pacific Northwest. University of Washington Press, Seattle, 5 volumes.

Huber, J. A. 1927. Schlussel zur bestimmung der Früchte und Samen der wichtigsten Ackerunkrauter. 83 Abb. Verlag., Dr. F. P. Dattner und Cle. Freisung, Munchen, Germany.

Ingles, J. M., and C. J. Barstow. 1960. A device for measuring the volume of seeds. Journal of Wildlife Management 24:221-222.

International Bureau for Plant Taxonomy and Nomenclature. 1963. International directory of botanical gardens. Utrecht, The Netherlands (a listing of botanical gardens that publish seed lists).

Lawrence, G. H. M. 1955. An introduction to plant taxonomy. MacMillan Co., 179 pp.

Mason, H. L. 1957. A flora of the marshes of California. University of California Press, Los Angeles, 878 pp.

Muenscher, W. C. 1944. Aquatic plants of the United States. Comstock Publishing Associates, Division of Cornell University Press, Ithaca, New York, 374 pp.

Netolitsky, F. 1926. Anatomie der angiospermen-samen. In Linsbauer (Ed.), Handbuch der Pfanzen Anatomie, 2 (Band 10).

Cont. GENERAL LITERATURE

Radford, A. E., H. E. Ahles, and C. R. Bell. 1968. Manual of the vascular flora of the Carolinas. University of North Carolina Press, Chapel Hill, 1183 pp.

Ritter, G. 1909. Die systematische Verwertbarkeit des anatomischen Baues von Früchten und Samen. Botanisches Centralblatt Beih. (II abt. Systematik) 26 (Heft):132-156.

Sargent, C. S. 1965. Manual of the trees of North America. Dover Publications, Inc., 2 volumes.

Sernander, R. 1927. Zur Morphologie und Biologie der Diasporen. Nova Acta Reg. Soc. Sci. Upsaliensis, Uppsala, Sweden.

Small, J. K. 1933. Manual of the southeastern flora. John Kunkel Small, New York, 1554 pp. (Reprinted by Hafner Publishing Company in 1972 as two volumes).

Stefferud, A. (Ed.). 1961. Seeds. U.S.D.A. Yearbook of Agriculture, 1961, 591 pp.

Steyermark, J. A. 1963. Flora of Missouri. Iowa State University Press, Ames.

Systematics Association, Committee for Descriptive Biological Terminology. 1962. Terminology of simple symmetrical plant shapes. Taxon 11(5): 145-156.

Ulbrich, E. 1928. Biologie der Früchte und Samen (Karpbiologie). Biologische Studienbucher 6. Verlag von Julius Springer, Berlin.

Vaughan, J. G. 1970. The structure and utilization of oil seeds. Chapman and Hall, 11 New Fetter-Lane, London EC 4, Great Britain, 296 pp.

Werner, P. A. 1975. A seed trap for determining patterns of seed deposition in terrestrial plants. Canadian Journal of Botany 53(8):810-813.

TAXONOMIC LITERATURE FOR FRUIT AND SEED IDENTIFICATION, ARRANGED BY PLANT FAMILIES

ACANTHACEAE

Long, R. W. 1970. The genera of Acanthaceae in the southeastern United States. Journal of the Arnold Arboretum 51:257-309.

AIZOACEAE

Bogle, A. L. 1970. The genera of Molluginaceae and Aizoaceae in the southeastern United States. Journal of the Arnold Arboretum 51:431-462.

Thieret, J. W. 1966. Seeds of some United States Phytolaccaceae and Aizoaceae. Sida 2(5):352-360.

ALISMATACEAE

Melkyan, A. P. 1968. The significance of the characteristics of the anatomical structure of the seed coat for specific taxonomy as exemplified by the genus Alisma. Uch. Zap. Yerevan. Univ. Extestv. Nauk. 2:158-161.

Wooten, J. W. 1973. Taxonomy of seven species of Sagittaria from eastern North America. Brittonia 25(1):64-74.

AMARANTHACEAE

* Kowal, T. 1954. The morphological and anatomical features of the seeds of genus Amarant(h)us L. and keys for their determination. Monographiae Botanicae 2:162-193 (Polish text with English summary).

Sauer, J. D. 1950. The grain amaranths: a survey of their history and classification. Annals of the Missouri Botanical Garden 37(4):561-632.

AMARYLLIDACEAE

Brackett, A. 1923. A revision of the species of Hypoxis. Rhodora 25:151-163.

ANACARDIACEAE

Barkley, F. 1937. A monographic study of Rhus and its immediate allies in North and Central America including the West Indies. Annals of the Missouri Botanical Garden 20:265-498.

Cont. ANACARDIACEAE

Brizicky, G. K. 1962. The genera of Anacardiaceae in the southeastern United States. Journal of the Arnold Arboretum 43:359-375.

Brizicky, G. K. 1963. Taxonomic and nomenclatural notes on the genus Rhus (Anacardiaceae). Journal of the Arnold Arboretum 44:60-80.

Wood, B., and J. G. Vaughan. 1976. Observations on the variability of the ultrastructure at the interface of the cotyledon and testa of the cashew nut (Anacardium occidentale L.). Annals of Botany 40:1111-1116.

ANNONACEAE

Wilbur, R. L. 1970. Taxonomic and nomenclatural observations on the eastern North American genus Asimina (Annonaceae). Journal of the Elisha Mitchell Scientific Society 86(2):88-96.

APOCYNACEAE

Woodson, R. E. 1930. Studies in Apocynaceae. I. Annals of the Missouri Botanical Garden 17:1-212.

ASTERACEAE -- See COMPOSITAE

BASELLACEAE

Bogle, A. L. 1969. The genera of Portulacaceae and Basellaceae in the southeastern United States. Journal of the Arnold Arboretum 50:566-598.

BERBERIDACEAE

Ernst, W. R. 1964. The genera of Berberidaceae, Lardizabalaceae, and Menispermaceae in the southeastern United States. Journal of the Arnold Arboretum 45:1-35.

BETULACEAE

Alam, M. T., and W. F. Grant. 1972. Interspecific hybridization in birch (Betula). Naturaliste Canadien 99:33-40.

Barnes, B. V., B. P. Dancik, and T. L. Sharik. 1974. Natural hybridization of yellow birch and paper birch. Forest Science 20(3):215-221.

Cont. BETULACEAE

Bialobrazeska, M. 1964. The influence of various factors on the size and shape of fossil hornbeam fruits. Acta Palaeobotanica 5(1):1-24. (Polish text, photographs of Carpinus fruits, English summary, table and figure descriptions).

Bialobrazeska, M., and J. Truchanowiczowna. 1960. The variability of shape of fruits and scales of the European birches (Betula L.) and their determination in fossil materials. Monographiae Botanicae 9(2):3-86. (Polish text with English summary).

Brittain, W. H., and W. F. Grant. 1965. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. I. B. papyrifera in eastern Canada. Canadian Field-Naturalist 79(3):189-197.

Brittain, W. H., and W. F. Grant. 1965. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. II. B. papyrifera var. cordifolia. Canadian Field-Naturalist 79(4)253-257.

Brittain, W. H., and W. F. Grant. 1966. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. III. B. papyrifera of British Columbia. Canadian Field-Naturalist 80(3):147-157.

Brittain, W. H., and W. F. Grant. 1967. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. IV. B. caerulea-grandis and hybrids. Canadian Field-Naturalist 81(2):116-127.

Brittain, W. H., and W. F. Grant. 1967. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. V. B. papyrifera and cordifolia from eastern Canada. Canadian Field-Naturalist 81:251-262.

Brittain, W. H., and W. F. Grant. 1968. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. VI. B. papyrifera from the Rocky Mountains. Canadian Field-Naturalist 82(1):44-48.

Brittain, W. H., and W. F. Grant. 1968. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. VII. B. papyrifera and B. resinifera from northwestern Canada. Canadian Field-Naturalist 82(3):185-202.

Brittain, W. H., and W. F. Grant. 1969. Observations on Canadian birch (Betula) collections at the Morgan Arboretum. VIII. Betula from Grand Manan Island, New Brunswick. Canadian Field-Naturalist 83(4):361-383.

Cont. BETULACEAE

* Cunningham, F. E. 1957. A seed key for five northeastern birches. Journal of Forestry 55:844-845.

Dancik, B. P., and B. V. Barnes. 1972. Natural variation and hybridization of yellow birch and bog birch in southeastern Michigan. Silvae Genetica 21(1-2):1-9.

Dugle, J. R. 1966. A taxonomic study of western Canadian species in the genus Betula. Canadian Journal of Botany 44:929-1007.

Grant, W. F., and B. K. Thompson. 1975. Observations on Canadian birches, Betula cordifolia, B. neoalaskana, B. populifolia, B. papyrifera, and B. x caerulea. Canadian Journal of Botany 53(15):1478-1490.

Jentys-Szaferowa, J. 1960. Morphological investigations of the fossil Carpinus-nutlets from Poland. Acta Palaeobotanica 1(1):1-4 (Polish text).

Jentys-Szaferowa, J. 1961. Anatomical investigations on fossil fruits of the genus Carpinus in Poland. Acta Palaeobotanica 2(1):1-33.

Sharik, T. L., and B. V. Barnes. 1971. Hybridization in Betula alleghaniensis Britt. and B. lenta L.: a comparative analysis of controlled crosses. Forest Science 17(4):415-424.

CALLITRICHACEAE

Fassett, N. C. 1951. Callitriche in the New World. Rhodora 53:137-155, 161-182, 185-194, and 209-222.

CANNABACEAE

Miller, N. G. 1970. The genera of Cannabaceae in the southeastern United States. Journal of the Arnold Arboretum 51:185-203.

CAPPARACEAE -- See CAPPARIDACEAE

CAPPARIDACEAE

Ernst, W. R. 1963. The genera of Capparaceae and Moringaceae in the southeastern United States. Journal of the Arnold Arboretum 44:81-95.

Iltis, H. H. 1957. Studies in the Capparidaceae. III. Evolution and phylogeny of the western North American Cleomoideae. Annals of the Missouri Botanical Garden 44:77-119.

CAPRIFOLIACEAE

Ferguson, I. K. 1966. The genera of Caprifoliaceae in the southeastern United States. Journal of the Arnold Arboretum 47:33-59.

CARYOPHYLLACEAE

Kowal, T., and H. Wojterska. 1966. Systematic studies on the seeds of the genus Dianthus L. Monographiae Botanicae 21:271-296 (Polish text with English summary).

Kowal, T. 1966. Systematic studies on the seeds of the genera Delia Dum., Spergula L. and Spergularia Presl. Monographiae Botanicae 21:245-270 (Polish text with English summary).

Kowal, T. 1973. A simple way of finding linked and antagonistic characters by means of table of characters used in the dendrite method. Acta Societatis Botanicorum Poloniae 42(1):73-101.

Kowal, T. 1973. The role of the number of characters in distinguishing taxa in taxonomic investigations performed by the dentrite method. Acta Societatis Botanicorum Poloniae 42(1):103-119.

Srodon, A. 1973. Silene wahlbergella Chowdhuri and Silene furcata Rafin in the Pleistocene of Poland. Polski Acta Palaeobot. 14:207-211.

Wojterska, H. 1969. Systematic studies on morphology and anatomy of seeds and fruits of Polish species of the genus Cerastium L. Pozn. Tow. Przyj. Nauk., Wydz. Mat.-Przyr., Kom. Biol. 32(7):1-31.

Woodcock, E. F. 1927. Observations on the morphology of the seed of Cerastium vulgatum. Papers of the Michigan Academy of Science, Arts and Letters 8:233-238.

CELASTRACEAE

Brizicky, G. K. 1964. The genera of Celastrales in the southeastern United States. Journal of the Arnold Arboretum 45:206-234.

CERATOPHYLLACEAE

Backman, A. L. 1943. Ceratophyllum submersum in Nordeuropa wahrend der Postglazialzeit. Acta Botanica Fennica 31.

Wood, C. E., Jr. 1959. The genera of the Nymphaeaceae and Ceratophyllaceae in the southeastern United States. Journal of the Arnold Arboretum 40:94-112.

CHENOPODIACEAE

Aellen, P., and T. Just. 1943. Key and synopsis of the American species of the genus Chenopodium L. American Midland Naturalist 30(1):47-76.

Asch, D. L., and N. B. Asch. 1977. Chenopod as cultigen: a re-evaluation of some prehistoric collections from eastern North America. Mid-Continental Journal of Archaeology 2(1):3-45.

Black, M. J. 1963. The distribution and archaeological significance of the marsh elder, Iva annua L. Papers of the Michigan Academy of Science, Arts, and Letters 48:541-547.

Blake, S. F. 1939. New variety of Iva ciliata from an indian rock shelter in south central U.S. Rhodora 41:81-86.

* Conley, Sister M. A. 1938. Seeds of the North American species of Chenopodium. M.S. Thesis, University of Notre Dame.

Frankton, C., and J. J. Bassett. 1970. The genus Atriplex (Chenopodiaceae) in Canada. II. Four native western annuals: A. argentea, A. truncata, A. powellii, and A. dioica. Canadian Journal of Botany 48(5):981-989.

Guinet, P. P. 1959. Essai d'identification des graines de chénopodes commensaux des cultures ou cultivés en France. Jour. Agr. Trop. Botan. Appl. 6(6-7):241-266.

* Heron, J. W. 1953. Study of seed production, seed identification, and seed germination of Chenopodium spp. Cornell University Agricultural Experiment Station Memoir 320:1-24.

* Kowal, T. 1953. A key for the determination of the seeds of the genera Chenopodium L. and Atriplex L. Monographiae Botanicae 1:87-163 (Polish text with English summary).

Wahl, H. A. 1954. A preliminary study in the genus Chenopodium in North America. Bartonia 27:1-46.

CHRYSOBALINACEAE

Prance, G. T. 1970. The genera of Chrysobalanaceae in the southeastern United States. Journal of the Arnold Arboretum 51:521-528.

CISTACEAE

Daoud, H. S., and R. L. Wilbur. 1965. A revision of the North American species of Helianthemum (Cistaceae). Rhodora 67:63-82, 201-216, and 255-280.

Cont. CISTACEAE

Hodgdon, A. R. 1938. A taxonomic study of Lechea. Rhodora 40:29-69, 87-131.

Wojciechowska, B. 1969. Seed morphology and anatomy of some Helianthemum species. Monographiae Botanicae 29:121-135 (Polish text with English key and summary).

CLETHRACEAE

Thomas, J. L. 1961. The genera of the Cyrillaceae and Clethraceae of the southeastern United States. Journal of the Arnold Arboretum 42:96-106.

COMBRETACEAE

Graham, S. A. 1964. The genera of Rhizophoraceae and Combretaceae in the southeastern United States. Journal of the Arnold Arboretum 45:285-301.

COMPOSITAE

Babcock, E. B., and G. L. Stebbins, Jr. 1938. The American species of Crepis. Carnegie Institute, Washington, Publ. 504.

Black, M. J. 1963. The distribution and archaeological significance of the marsh elder, Iva annua L. Papers of the Michigan Academy of Science, Arts, and Letters 48:541-547.

Blake, A. M. 1928. Akenes of some Compositae. North Dakota Agricultural College Bulletin 218.

Blake, S. F. 1939. New variety of Iva ciliata from an Indian rock shelter in south central United States. Rhodora 41:81-86.

Clewell, A. G., and J. W. Wooten. 1971. A revision of Ageratina (Compositae: Eupatorieae) from eastern North America. Brittonia 23(2):123-143.

Cronquist, A. 1947. Revision of the North American species of Erigeron north of Mexico. Brittonia 6(2):121-302.

Gouchu, D. I. 1973. Anatomy of the seeds of Centaurea spp. Bot. Zhur. 58(2):245-247.

Greenman, J. M. 1915-1918. Monograph of the North and Central American species of the genus Senecio, part II. Annals of the Missouri Botanical Garden (1915) 2:573-626; (1916) 3:85-194; (1917) 4:15-36; and (1918) 5:37-107.

Isely, D. 1947. Seeds of weedy thistles. Proceedings of the Association of Official Seed Analysts 37:93-98.

Cont. COMPOSITAE

Jackson, R. C. 1960. A revision of the genus Iva L. University of Kansas Science Bulletin 41(7):793-876.

Richards, E. L. 1968. A monograph of the genus Ratibida. Rhodora 70:348-393.

Rock, H. F. L. 1957. A revision of the vernal species of Helenium (Compositae). Rhodora 59:101-116, 128-158, 168-178, and 203-216.

Serbanexcu, G., V. Sanda, I. Vaduva, and G. Popescu. 1970. The anatomical and biometrical study of the epidermal cells and statistical interpretation of the fruit in the species taxonomy of Taraxacum in Romania. Stud. Cercet Biol. Ser. Bot. 22(2):101-109.

Uuilleumier, B. S. 1969. The tribe Mutisieae (Compositae) in the southeastern United States. Journal of the Arnold Arboretum 50:620-625.

Uuilleumier, B. S. 1973. The genera of Lactuceae (Compositae) in the southeastern United States. Journal of the Arnold Arboretum 54:42-93.

CONVOLVULACEAE

Austin, D. F. 1973. The American Erycibeae (Convolvulaceae): Maripa, Dicranostyles, and Lysiostyles. I. Systematics. Annals of the Missouri Botanical Garden 60(2):306-412.

* Gaertner, E. E. 1950. Studies of seed germination, seed identification, and host relationships in dodders, Cuscuta spp. Cornell University Agricultural Experiment Station Memoir 294:1-56.

* Gunn, C. R. 1969. Seeds of the United States noxious and common weeds in the Convolvulaceae, excluding the genus Cuscuta. Proceedings of the Association of Official Seed Analysts 59:101-115.

Gunn, C. R. 1969. History and taxonomy of the purple moonflower, Ipomoea turbinata Lagasca Y. Segura. Proceedings of the Association of Official Seed Analysts 59:116-123.

Musil, A. F. 1944. Seeds of dodder occurring with crop seeds. U.S.D.A. Bureau of Plant Industr. Soils and Agr. Eng. Washington.

CORNACEAE

* Eyde, R. H. 1963. Morphological and paleobotanical studies of the Nyssaceae. I. A survey of the modern species and their fruits. Journal of the Arnold Arboretum 44:1-52.

Eyde, R. H. 1964. Typification of Nyssa Aquatica L. Taxon 13:129-131.

CRUCIFERAE

Berggren, G. 1962. Reviews on the taxonomy of some species of the genus Brassica, based on their seeds. Svensk Botanisk Tidskrift 56:65-133.

Cernohorsky, Z. 1947. Graines des Cruciferae des Boheme. Opera Botanica Cehica 5:1-96 (W. Junk, Van Stolkweg 13, Den Haag, Holland).

Francois, L. 1937. Semences et jeunes plantes des vegetaux messicoles: famille des Cruciferes. Annales des Epiphyties et des Phytogenetique, Ministere de l'agriculture, Paris 3:8-21.

Hopkins, M. 1937. Arabis in eastern and central North America. Rhodora 39:63-98, 106-148, and 155-186.

Latowski, K. 1975. Morphology and anatomy of fruits and seeds of the middle European Erysimum L. species. Monographiae Botanicae 49:5-78. (Polish text with English summary).

McGugan, J. M. 1948. Seeds and seedlings of the genus Brassica. Canadian Journal of Research, Sec. C 26:520-587.

* Murley, M. R. 1951. Seeds of the Cruciferae of northeastern North America. American Midland Naturalist 46(1):1-81.

Musil, A. F. 1942. Seeds of commercial species of Brassica. Proceedings of the Association of Official Seed Analysts 34:132-138.

Musil, A. F. 1948. Distinguishing species of Brassica by their seeds. U.S.D.A. Misc. Publ. No. 643:1-35.

Perino, K. W. 1972. A contribution to the diagnostics of seeds of economically important Brassica species. Landwirtsch Forschung 25(3):272-274.

Roberts, R. A., and J. O. Thomas. 1933. A study of the distinguishing features of the seeds and seedlings of some farm Cruciferae. Proceedings of the International Seed Testing Association 5(2):113-131.

Cont. CRUCIFERAE

Stork, A. L. 1971. Seed characters in European taxa of Malcolmia Cruciferae. Svensk Botanisk Tidskrift 65(3):283-292.

Stork, A. L. 1972. Samen und Keimlinge von Malcomia sens. lat. (Cruciferae). Svensk Botanisk Tidskrift 66:417-436.

Stuckey, R. L. 1966. Rorippa walteri and R. obtusa synonyms of R. teres (Cruciferae). Sida 2(6):409-418.

Stuckey, R. L. 1972. Taxonomy and distribution of the genus Rorippa (Cruciferae) in North America. Sida 4(4):279-430.

Vaughan, J. G. 1956. The seed coat structure of Brassica integrifolia (West) O. E. Schulz var. carinata (A. Br.). Phytomorphology 6(3/4):363-367.

Vaughan, J. G. 1958. Seed-coat structure of yellow chinese rape. Nature 181:650.

Vaughan, J. G. 1960. The preparation and staining of sections of Cruciferae seed coats. Stain Technology 35(4):229-231.

Vaughan, J. G., and J. M. Whitehouse. 1971. Seed structure and the taxonomy of the Cruciferae. Biological Journal of the Linnean Society of London 64(4):383-409.

Vaughan, J. G., J. R. Phelan, and K. E. Denford. 1976. Seed studies in the Cruciferae, pp. 119-144. In Vaughan, J. G., A. J. MacLeod, and B. M. G. Jones (Eds.), The biology and chemistry of the Cruciferae. Academic Press, New York, 356 pp.

CUCURBITACEAE

Parry, C. C. 1882. The fruits of Cucurbita. Bulletin of the Torrey Botanical Club 9:30-31.

Singh, D., and A. S. R. Dathan. 1973. Structure and development of the seed coat in Cucurbitaceae. Part 9: Seeds of Zanonioidese. Phytomorphylogy 23(3-4):138-148.

CYPERACEAE

Akiyama, Shigeo. 1969. Illustrations of the genus Carex. Kanazawa Daigaku, Sci. Report 14(2):71-174.

* Beetle, A. A. 1943. A key to the North American species of the genus Scirpus based on achene characters. American Midland Naturalist 29(2):533-538.

Cont. CYPERACEAE

* Berggren, G. 1969. Atlas of seeds and small fruits of northwest-European plant species with morphological descriptions, Part 2, Cyperaceae. Swedish Natural Science Research Council, Stockholm, 68 pp.

Chase, A. 1904. The North American allies of Scirpus lacustris. Rhodora 6:65-71, plates follow p. 80.

Clarke, C. B. 1909. Illustrations of Cyperaceae. Williams and Norgate, London, 144 plates.

Delahoussaya, A. J., and J. W. Thieret. 1967. Cyperus subgenus Kyllinga (Cyperaceae) in the continental United States. Sida 3(3):128-136.

Fernald, M. L. 1899. Eleocharis ovata and its American allies. Proceedings of the American Academy of Arts and Sciences 34:485-497.

Fernald, M. L. 1899. Scirpus eriophorum and some relatives. Proceedings of the American Academy of Arts and Letters 34:498-503. (Eriophorum).

Fernald, M. L. 1942. Critical notes on Carex. Rhodora 44:283-331.

Fernald, M. L. 1943. Contributions from the Gray Herbarium of Harvard University - No. CXLVIII, V. Studies in North American species of Scirpus. Rhodora 45(535):279-296.

Fernald, M. L., and A. E. Brackett. 1929. The representatives of Eleocharis palustris in North America. Rhodora 31(364):57-77.

Friedland, S. 1941. The American species of Hemicarpha. American Journal of Botany 28:855-861.

Gale, S. 1944. Rhynchospora, Section Eurhynchospora, in Canada, the United States and the West Indies. Rhodora 46:89-134, 159-197, 207-249, and 255-278.

Hermann, F. J. 1967. A new species of Carex from Chiapas, Mexico. Brittonia 19(1):68-69.

Hermann, F. J. 1968. Notes on Rocky Mountain Carices. Rhodora 70(783):419-421.

* Hermann, F. J. 1970. Manual of the Carices of the Rocky Mountains and Colorado Basin. U.S.D.A. Agricultural Handbook 374:1-395.

Hermann, F. J. 1971. New species of Carex from Mexico and Guatemala. Brittonia 23(2):144-148.

Cont. CYPERACEAE

* Hermann, F. J. 1974. Manual of the genus Carex in Mexico and Central America. U.S.D.A. Agricultural Handbook 467:1-219.

* Kowal, T. 1958. A study on the morphology of fruits of European genera from the subfamilies Scirpoideae Pax, Rhynchosporoideae Aschers et Graebner and some genera of Carcoideae Pax. Monographiae Botanicae 6:97-149.

Koyama, T. 1958. Taxonomic study of the genus Scirpus Linné. Journal of the Faculty of Science, Imperial University of Tokyo, Section III (Botany), 7:271-366.

Koyama, T. 1962. The genus Scirpus Linn., some North American aphylloid species. Canadian Journal of Botany 40(7):913-937.

Koyama, T. 1963. The genus Scirpus Linn., critical species of the section Pterolepis. Canadian Journal of Botany 41(7):1107-1131.

* Kral, R. 1971. A treatment of Abildgaardia, Bulbostylis and Fimbristylis (Cyperaceae) for North America. Sida 4(2):57-227.

Kukenthal, G. 1909. Cyperaceae - Caricoideae. Das Pflanzenreich 38(IV.20):1-284 (German text with Latin descriptions of achenes).

Kukenthal, G. 1935-1936. Cyperaceae - Scirpoideae - Cypereae. Das Pflanzenreich 101(IV.20):1-671 (German text with Latin descriptions of achenes).

Mackenzie, K. K. 1913. Notes on Carex - VII. Bulletin of the Torrey Botanical Club 40(10):529-554.

* Mackenzie, K. K. 1931-1935. North American flora, Cariceae, Vol. 18.

* Mackenzie, K. K. 1940. North American Cariceae. New York Botanical Garden, N.Y., 2 volumes, 547 pp.

Marek, S. 1958. A study on the anatomy of fruits of European genera in the subfamilies Scirpoideae Pax, Rhynchosporoideae Aschers et Graebn. and some genera of Caricoideae Pax. Monographiae Botanicae 6.

* Martin, A. C. 1944. Achene characters in the genus Scirpus. American Midland Naturalist 31:250.

McGivney, Sister M. V. de Paul. 1928. A revision of the subgenus Eucyperus found in the United States. Catholic University of America Publication, Biological Series 26.

Cont. CYPERACEAE

Nilsson, O., and H. Hjelmquist. 1967. Studies on the nutlet structure of south Scandinavian species of Carex. Botaniska Notiser 120:460-485.

Reznicek, A. A., and P. W. Ball. 1974. The taxonomy of Carex series Lupulinae in Canada. Canadian Journal of Botany 52(11):2387-2399.

Samuelsson, G. 1933. Carices Muehlenbergianae Tuckerman i Norden. Svensk Botanisk Tidskrift 27:1-31.

Smith, S. G. 1969. Natural hybridization in the Scirpus lacustris complex in north central United States, pp. 175-200. In Gunckel, J. E. (Ed.), Current topics in plant science, Academic Press, New York, 461 pp.

Svenson, H. K. 1929-1939. Monographic studies in the genus Eleocharis. Rhodora (1929) 31:121-135, 152-163, 167-191, 199-219, 224-242; (1932) 34:193-203, 215-227; (1934) 36:377-389; (1937) 39:210-231, 236-273; (1939) 41:1-19, 43-77, 90-110.

Truchanowiczowna, J. 1973. Variability of the recent and fossil fruits of the genus Dulichium. Acta Palaeobotanica 14(2):119-151.

CYRILLACEAE

Thomas, J. L. 1961. The genera of the Cyrillaceae and Clethraceae of the southeastern United States. Journal of the Arnold Arboretum 42:96-106.

DIPSACACEAE

Werner, P. A. 1975. The biology of Canadian weeds. 12. Dipsacus sylvestris Huds. Canadian Journal of Plant Science 55:783-794.

DROSERACEAE

Wood, C. E., Jr. 1960. The genera of Sarraceniaceae and Droseraceae in the southeastern United States. Journal of the Arnold Arboretum 41:152-163.

EBENACEAE

Wood, C. E., Jr., and R. B. Channell. 1960. The genera of the Ebenales in the southeastern United States. Journal of the Arnold Arboretum 41:1-35.

ELAEOCARPACEAE

Brizicky, G. K. 1965. The genera of Tiliaceae and Elaeocarpaceae in the southeastern United States. Journal of the Arnold Arboretum 46:286-307.

ERICACEAE

Huckerby, E., R. Marchant, and F. Oldfield. 1972. Identification of fossil seeds of Erica and Calluna by scanning electron microscopy. New Phytologist 71(2):387-392.

Tallantire, P. A. 1976. Provisional key for the identificaton of subfossil seeds of Vaccinium spp. Folia Quaternaria 47:39-40.

Ward, F. K. 1935. Rhododendron seeds with special reference to their classification. Journal of Botany 73:241-247.

Wilbur, R. L., and C. H. Racine. 1971. The Genus Leiophyllum (Ericaceae): morphological variation, distribution, and classification. Journal of the Elisha Mitchell Scientific Society 87(4):222-226.

Wood, C. E., Jr. 1961. The genera of the Ericaceae in the southeastern United States. Journal of the Arnold Arboretum 42:10-80.

ERIOCAULACEAE

Kral, R. 1966. Eriocaulaceae of continental North America north of Mexico. Sida 2(4):285-332.

EUPHORBIACEAE

Krochmal, A. 1952. Seeds of weedy Euphorbia species and their identification. Weeds 1:243-255.

* Murley, M. R. 1945. Distribution of Euphorbiaceae in Iowa, with seed keys. Iowa State College, Journal of Science 19(4):415-427.

Norton, J. B. S. 1900. A revision of the American species of Euphorbia of the section Tithymalus occurring north of Mexico. Annual Report of the Missouri Botanical Garden 11:85-144.

Railyan, A. F. 1973. Value of the anatomical structure of the seed coat for taxonomy of the genus Euphorbia. Bot. Zhur. 58(2):239-245.

Serwatka, J. 1972. Seed morphology and anatomy of the European species of the genus Euphorbia. Monographiae Botanicae 37:3-33.

Cont. EUPHORBIACEAE

Wheeler, L. C. 1941. Euphorbia, subgenus Chamaesyce, in Canada and the United States, exclusive of southern Florida. Rhodora 43:97-154, 168-205, and 223-286.

FABACEAE

Barneby, R. C. 1964. Atlas of North American Astragalus. Memoirs of the New York Botanical Garden 13: Volumes 1 & 2.

Bravato, M. 1974. Morphological study of fruits and seeds of the Mimosoideae Leguminosae of Venezuela. Acta Bot. Venezuela 9(1-4):317-361.

Burton, C. L. 1932. Variation in characteristics in black locust seeds from two regions. Journal of Forestry 30:29-33.

Clewell, A. F. 1966. Native North American species of Lespedeza (Leguminosae). Rhodora 68(775):359-405.

Corner, E. J. H. 1951. The leguminous seed. Phytomorphology 1(1,2):117-150.

Dudik, N. M. 1974. Morphology of legume seeds. Biol. Nauki (Mosc.) 17(12):52-54.

Elias, T. S. 1974. The genera of Mimosoidaeae (Leguminosae) in the southeastern United States. Journal of the Arnold Arboretum 55:67-118.

Gopal, M., and R. C. Thapligal. 1971. Seed identification of 35 forestry species of family Mimosaceae. Proc. International Seed Testing Assoc. 36(2):203-232.

Gunn, C. R. 1968. The Vicia americana complex (Leguminosae). Iowa State College, Journal of Science 42(3):171-214.

* Gunn, C. R. 1970. A key and diagrams for the seeds of one hundred species of Vicia (Leguminosae). Proceedings of the International Seed Testing Association 35(3):773-790.

* Gunn, C. R. 1971. Seeds of native and naturalized vetches of North America. U.S.D.A. Agricultural Handbook 392:1-42.

Hermann, F. J. 1960. Vetches of the United States - native, naturalized, and cultivated. U.S.D.A. Agricultural Handbook 168:1-84.

Hillman, F. H. 1933. Distinguishing characters of seeds of Vicia villosa and Vicia dasycarpa. U.S.D.A., 3 pp.

Cont. FABACEAE

Iksanova, I. V., and N. N. Kaden. 1971. Morphology of the seeds of some South African Acacia. Vestnik Moscow Universitet, Seriia VI Biologiia, Pochvovedenie 26(2):111-114.

Isley, D. 1947. Seed characters of alfalfa and certain other species of Medicago. Iowa State College, Journal of Science 21(2):153-159.

Isley, D. 1955. Observations on seeds of the Leguminosae: Mimosoideae and Caesalpinoideae. Proceedings of the Iowa Academy of Science 62:142-145.

Isley, D. 1955. Key to seeds of Caesalpinoideae and Mimosoideae of north-central States. Proceedings of the Iowa Academy of Science 62:146-149.

Isley, D. 1955. The Leguminosae of the north-central United States. II. Hedysareae. Iowa State College, Journal of Science 30(1):33-118.

Isley, D. 1962. The Leguminosae of the north-central United States. IV. Psoraleae. Iowa State College, Journal of Science 37:103-162.

Kopooshian, H. A. 1963. Seed character relationships in the Leguminosae. Unpublished Ph.D., Iowa State University, Ames.

Leokene, L. V. 1966. Morphological seed variations of common vetch species. Bulletin of Applied Botany, Genetics, and Plant Breeding 38(1):32-49.

McKee, R., and P. L. Ricker. 1913. Nonperennial medicagos: the agronomic value and botanical relationship of the species. U.S.D.A. Bureau of Plant Industr. Bull. 267:1-83.

* Miller, R. H. 1967. Crotalaria seed morphology, anatomy and identification. U.S.D.A. Technical Bulletin No. 1373:1-73.

Newell, C. A., and T. Hymowitz. 1978. Seed coat variation in Glycine Willd. subgenus glycine (Leguminosae) by SEM. Brittonia 30:76-88.

Pammel, L. H. 1886. On the structure of the testa of several Leguminous seeds. Bulletin of the Torrey Botanical Club 13(2):17-24, 2 plates.

Pammel, L. H. 1899. Anatomical characters of the seeds of Leguminosae, chiefly genera of Gray's manual. Transactions of the Academy of Science, St. Louis 9:91-263.

Cont. FABACEAE

Pierpoint, M. 1949. Certain vetches and similar plants. Association of Official Seed Analysts, Contrib. Handbook Seed Testing, Queen's Printer, Ottawa, 7 pp.

Quartley, C. E. 1968. Identification of Vicia spp. Proceedings of the International Seed Testing Association 33(2):329-330.

Quartley, C. D. 1968. Key to 7 species of Vicia and Lathyrus. Proceedings of the International Seed Testing Association 33(2):331-334.

Shinners, L. H. 1956. Vicia grandiflora var. kitaibeliana in southeastern United States. Castanea 21(4):151-152.

Wellendorf, M. 1964. Morphology and anatomy of Crotalaria seeds. Lloydia 27(3):251-253.

Wood, C. E. 1949. The American barbistyled species of Tephrosia (Leguminosae). Rhodora 51:193-231, 233-302, 305-364, and 369-384.

FAGACEAE

Elias, T. S. 1971. The genera of Fagaceae in the southeastern United States. Journal of the Arnold Arboretum 52:159-195.

FUMARIACEAE

Ernst, W. R. 1962. The genera of Papaveraceae and Fumariaceae in the southeastern United States. Journal of the Arnold Arboretum 43:315-343.

GENTIANACEAE

Gillett, J. M. 1963. The Gentians of Canada, Alaska and Greenland. Biosystematic Research Institute, Central Experimental Farm, Ottawa, Publ. 1180.

Iltis, H. H. 1965. The genus Gentianopsis (Gentianaceae): transfers and phytogeographic comments. Sida. 2(2):129-154.

Jentys-Szaferowa, J., and J. Truchanowiczowna. 1953. Seeds of Menyanthes L. in Poland from Pliocene to the present time. Pr. Inst. Geol. 10:37-59.

Kokawa, S. 1960. Morphometric reconstruction of the compressed seed remains of Menyanthes in Japan. Journal of the Institute of Polytechnics, Osaka City University, Series D (Biology) 11:79-89.

Cont. GENTIANACEAE

Kokawa, S. 1961. Distribution and phytostratigraphy of Menyanthes remains in Japan. Journal of Biology, Osaka City University 12:123-151.

Kokawa, S. 1962. Age effect on the morphometric values of the fossil Menyanthes seeds in Japan represented by the Szaferowa's graphic method. Journal of Biology, Osaka City University 13:87-97.

Truchanowiczowna, J. 1964. Fossil seeds of the genus Menyanthes in Eurasia. Acta Paleobotanica 5(1):25-53.

Truchanowiczowna, J. 1967. Seeds of the genus Menyanthes from the Polish Miocene. Acta Paleobotanica 8(1):31-51.

Watts, W. A. 1971. The identity of Menyanthes microsperma n. sp. foss. from the Gort Interglacial, Ireland. New Phytologist 70:435-436.

GERANIACEAE

Dayton, W. E. 1937. Afileria (Filaree) seed. Rhodora 39:323-325 (Erodium).

Jones, G. N., and F. F. Jones. 1943. A revision of the perennial species of Geranium of the United States and Canada. Rhodora 45(529):5-26; 45(530):32-53.

* Murley, M. R. 1944. A seed key to fourteen species of Geraniaceae. Proceedings of the Iowa Academy of Science 51:241-246.

Robertson, K. R. 1972. The genera of Geraniaceae in the southeastern United States. Journal of the Arnold Arboretum 53:182-201.

Tokarski, M. 1972. Morphological and taxonomical analysis of fruits and seeds of the European and Caucasian species of the genus Geranium. Monographiae Botanicae 36:5-72.

GOODENIACEAE

Brizicky, G. K. 1966. The Goodeniaceae in the southeastern United States. Journal of the Arnold Arboretum 47:293-300.

Carolin, R. C. 1966. Seeds and fruit of the Goodeniaceae. Proceedings of the Linnean Society of New South Wales, Sidney 91:58-83.

GRAMINEAE

Boeke, J. E. 1968. Some characters of 4 Agrostis spp. Proceedings of the International Seed Testing Association 33(2):324-327.

Bowden, W. M. 1959. The taxonomy and nomenclature of the wheats, barleys and ryes and their wild relatives. Canadian Journal of Botany 37:657.

Carson, G. P., and F. R. Horne. 1962. The identification of barley varieties. In Cook, A. H. (Ed.), Barley and malt. London and New York.

Colbry, V. L. 1957. Diagnostic characteristics of the fruits and florets of economic species of North American Sporobolus. Contributions from the United States National Herbarium 34(1):1-24.

Colbry, V. L. 1968. Key to 8 Poa spp. Proceedings of the International Seed Testing Association 33(2):314-317.

Colbry, V. L., and M. Olesen. 1968. Seed identification key for Agropyron repens, A. smithii, and A. trachycaulum. Proceedings of the International Seed Testing Association 33(2):328.

Farragher, M. A. 1974. Poaceae Irish members. Part 3. Artificial key for the identification of the fruits of Irish grasses. Sci. Proc. Roy. Dublin Soc. Ser. A 5(3):37-54.

Hillman, F. H. 1903. The seeds of rescue grass and chess. U.S.D.A. Bureau of Plant Industr. Bull. 25:5-8 (Bromus spp.)

* Hitchcock, A. S. (second edition revised by A. Chase). 1971. Manual of the grasses of the United States. Dover Publications, Inc., New York, 2 volumes, 1051 pp.

Isley, D. 1951. Seeds of Bromus secalinus and commutatus. Proceedings of the Iowa Academy of Science 58:155-163.

Isley, D., D. West, and R. W. Pohl. 1951. Seeds of agricultural and weedy Bromus species. Iowa State College, Journal of Science 25:531-548.

Jensen, L. A., et al. 1957. Seed characteristics of certain wild barley, Hordeum spp. Proceedings of the Association of Official Seed Analysts 1957:87-91.

* Korber-Grohne, U. 1964. Bestimmungsschlussel fur subfossile Juncus-Samen and Gramineen-Fruchte. Probleme der Kustenforschung im Sudlichen Nordseegebiet 7.

Cont. GRAMINEAE

Kowal, T., and W. Rudnicka-Steronowa. 1969. Fruit morphology and anatomy of the Bromus L. species of Poland. Monographiae Botanicae 29:3-68.

Mohlenbrock, R. H. 1972. The illustrated flora of Illinois grasses. Southern Illinois University Press, Carbondale and Edwardsville, 3 volumes.

Musil, A. F. 1942. Distinguishing characters of seeds of four species of Agropyron. Proceedings of the Association of Official Seed Analysts 1942:124-131.

Musil, A. F. 1942. Diagnostic characters of seeds of commercial species of Agrostis. Proceedings of the Association of Official Seed Analysts 1942:139-151.

Musil, A. F. 1944. Seeds of grasses cultivated for forage or occurring incidentally with crop seeds; the genus Setaria. U.S.D.A. Division of Forage Crops and Diseases, Beltsville, MD.

Musil, A. F. 1944. Seeds of grasses cultivated for forage or occurring incidentally with crop seeds; the genus Panicum. U.S.D.A. Division of Forage Crops and Diseases, Beltsville, MD.

Musil, A. F. 1944. Seeds of grasses cultivated for forage or occurring incidentally with crop seeds; miscellaneous species. U.S.D.A. Division of Forage Crops and Diseases, Beltsville, MD.

Musil, A. F. 1946. Distinguishing species of Avens from their seed. U.S.D.A. Division of Forage Crops and Diseases, Beltsville, MD.

Musil, A. F. 1946. Distinguishing species of Poa from their seed. U.S.D.A. Division of Forage Crops and Diseases, Beltsville, MD.

Musil, A. F. 1949. Distinguishing the seeds of cultivated fine-leaved fescues. Proceedings of the Association of Official Seed Analysts 1949:93-107.

Musil, A. F. 1950. Seeds of Agropyron, eleven species of economic interest compared. Proceedings of the Association of Official Seed Analysts 1950:59-71.

Musil, A. F. 1957. A comparison of the seeds of Sorghum almum, S. halepense, and S. sudanense. Proceedings of the Association of Official Seed Analysts 1957:80-86.

Norris, E. L. 1942. Identification of Sorghum. Proceedings of the Association of the Official Seed Analysts 34:151-155.

Cont. GRAMINEAE

Olesen, M. 1974. Identification of seeds of Phleum pratense, Phleum bertolon and Phleum nodosum on the basis of morphological differences. Seed Science and Technology 2(2):194-197.

Olsen, K. J. 1975. Characters used for identification of barley cultivars. Seed Science and Technology 3(1):182-183.

Pana, P. 1973. Laboratory methods for the identification of cleft maize seeds. Ann. Inst. Cercet. Pentru. Cereale Teh-Fund ser. C. Amelior Genet Fizio Biochim. Prot. Plant. 39:165-174.

Pepin, A., and W. H. Wright (no date). The identification of false wild oats. Association of Official seed Analysts Contr. Handbook.

Rudnicka-Sterna, W. 1972. Systematic studies on morphology and anatomy of the caryopsis of the Poa L. species in Poland. Monographiae Botanicae 37:51-136.

Stebbins, G. L., and B. Crampton. 1961. A suggested revision of the grass genera of temperate North America, pp. 133-145. In Recent advances in botany. Volume I. University of Toronto Press, Toronto.

Wiseman, E. F. 1968. Use of length-width measurements and phenol tests in conjunction with seed characteristics to distinguish varieties of Poa pratensis L., Kentucky bluegrass. Proceedings of the Association of Official Seed Analysts 58:46-57.

HALORAGACEAE

Simpson, M. J. A., and C. J. Burrows. 1978. Fruits of Myriophyllum elatinoides, Haloragaceae. Part 1. Identification from Late Otiran sediments. Part 2. Mode of release of seeds from mericarps. New Zealand Journal of Botany 16(1):163-166.

HAMAMELIDACEAE

Ernest, W. R. 1963. The genera of Hamamelidaceae and Platanaceae in the southeastern United States. Journal of the Arnold Arboretum 44:193-210.

Melikian, A. P. 1973. Seed-coat types of Hamamelidaceae and allied families in relation to their systematics. Bot. Zurh. 58(3):350-359, 2 plates.

HYDROCARYACEAE

Gams, H. 1959. Beitrag zur variabilität der Früchte von Trapa natans. Veröff. Geol. Inst. Rübel Zürich 33.

Miki, S. 1952. Trapa of Japan with special reference to its remains. Journal of the Institute of Polytechnics, Osaka City University, Osaka, Japan, Series D, 3.

Miki, S. 1959. Evolution of Trapa from ancestral Lythrum through Hemitrapa. Proceedings of the Japanese Academy, Tokyo, 35(6).

Szafer, W. 1954. On some living and fossil forms of Trapa L. Acta Societas Botanicorum Poloniae 23(1). (Polish text).

HYDROCHARITACEAE

Thieret, J. W., R. R. Haynes, and D. H. Duke. 1969. Blyxa aubertii (Hydrocharitaceae) in Louisiana: new to North America. Sida 3(5):343-344.

JUGLANDACEAE

Elias, T. S. 1972. The genera of Juglandaceae in the southeastern United States. Journal of the Arnold Arboretum 52:26-51.

Lake, E. R. 1913. The persian walnut industry of the United States. U.S.D.A. Bureau of Plant Industr. Bull. 254:1-112, 9 plates (stones of 9 species and several varieties).

Manning, W. E. 1940. The morphology of the flowers of the Juglandaceae. III. The pistillate flowers and fruit. American Journal of Botany 27:839-852.

JUNCACEAE

Hermann, F. J. 1975. Manual of the rushes (Juncus spp.) of the Rocky Mountains and Colorado Basin. U.S.D.A. Forest Service, Rocky Mountains Forest and Range Experiment Station, General Technical Report RM-18:1-107.

Körber-Grohne, U. 1964. Bestimmungsschlüssel für subfossile Juncus - Samen und Gramineen-Früchte. Probleme der Kustenforschung im Sudlichen Nordseegebiet 7.

LABIATAE

Hermann, F. J. 1936. Diagnostic characteristics in Lycopus. Rhodora 38:373-375.

Scora, R. W. 1967. Interspecific relationships in the genus Monarda (Labiatae). University of California Press.

Cont. LABIATAE

Wojciechowska, B. 1958. Taxonomy, morphology anatomy of fruits and seeds in the genus Salvia L. Monographiae Botanicae 6 (Polish text).

Wojciechowska, B. 1961. Fruits of the Middle European species of the genus Prunella L. (fam. Labiatae), their morphology and anatomy. Monographiae Botanicae 12:49-87 (Polish text with English summary).

Wojciechowska, B. 1972. Fruit morphology and anatomy in Scutellaria, Chaiturus, Galeobdolon, and Sideritis of the family Labiatae. Monographiae Botanicae 37:137-169 (Polish text with English summary).

LAMIACEAE -- See LABIATAE

LARDIZABALACEAE

Ernst, W. R. 1964. The genera of Berberidaceae, Lardizabalaceae, and Menispermaceae in the southeastern United States. Journal of the Arnold Arboretum 45:1-35.

LECYTHIDACEAE

Prance, G., and S. A. Mori. 1978. Observations on the fruits and seeds of neotropical Lecythidaceae. Brittonia 30:21-33.

LEGUMINOSAE -- See FABACEAE

LENTIBULARIACEAE

Barnhart, J. H. 1916. Lentibulariaceae. Memoirs of the New York Botanical Garden 6:39-64.

LILIACEAE

Wilbur, R. L. 1963. A revision of the North American genus Uvularia (Liliaceae). Rhodora 65:158-188.

LINACEAE

Robertson, K. R. 1971. The Linaceae in the southeastern United States. Journal of the Arnold Arboretum 52:649-665.

LOASACEAE

Ernst, W. R., and H. J. Thompson. 1963. The Loasaceae in the southeastern United States. Journal of the Arnold Arboretum 44:138-142.

LOBELIACEAE

Krochmal, A., and J. Huguely. 1971. Seed descriptions of four common lobelias. Castanea 36(4):257-259.

McVaugh, R. 1936. Studies in the taxonomy and distribution of the eastern North American species of Lobelia. Rhodora 38:241-263, 276-298, 305-329, and 346-362.

LOGANIACEAE

Ornduff, R. 1970. The systematics and breeding system of Gelsemium (Loganiaceae). Journal of the Arnold Arboretum 51:1-17.

MALVACEAE

Reeves, R. G. 1936. Comparative anatomy of the seeds of cottons and other malvaceous plants. I. Malvae and Uraneae. American Journal of Botany 23:291-296.

Reeves, R. G. 1936. Comparative anatomy of the seeds of cottons and other malvaceous plants. II. Hibisceae. American Journal of Botany 23:394-405.

MELASTOMATACEAE

Kral, R., and P. E. Bostick. 1969. The Genus Rhexia (Melastomataceae). Sida 3(6):387-440.

MENISPERMACEAE

Ernst, W. R. 1964. The genera of Berberidaceae, Lardizabalaceae, and Menispermaceae in the southeastern United States. Journal of the Arnold Arboretum 45:1-35.

MIMOSACEAE

Gopal, M., and R. C. Thapligal. 1971. Seed identification of 35 forestry species of family Mimosaceae. Proceedings of the International Seed Testing Association 36(2):203-232.

MOLLUGINACEAE -- See AIZOACEAE

MORINGACEAE

Ernst, W. R. 1963. The genera of Capparaceae and Moringaceae in the southeastern United States. Journal of the Arnold Arboretum 44:81-95.

MYRICACEAE

Elias, T. S. 1971. The genera of Myricaceae in the southeastern United States. Journal of the Arnold Arboretum 52:305-318.

NAJADACEAE (Note: Potamogeton is placed in Potamogetonaceae, following Haynes, 1974)

Backman, A. L. 1941-1943. Najas marina in Finnland wahrend der Postglazialzeit. Acta Botanica Fennica No. 43.

Backman, A. L. 1948-1949. Najas flexilis in Europa wahrend der Quartarzeit. Acta Botanica Fennica No. 43.

Backman, A. L. 1950. Najas tenuissima (A. Br.) Magnus einst und jetzt. Soc. Scient. Fenn. 10:19.

Chase, S. S. 1947. Preliminary studies in the genus Najas in the United States. Unpublished Ph.D. Thesis, Cornell University, 164 pp.

Clausen, R. T. 1936. Studies in the Najas in the northern United States. Rhodora 38:333-345.

Clausen, R. T. 1937. A new species of Najas from the Hudson River. Rhodora 39:57-60.

Clausen, R. T. 1947. Najas arguta in Central American and its relationships to N. Wrightiana. Rhodora 49:233-236.

Dorofeev, P. I. 1973. On the taxonomy of fossil naids of the subgenus Caulinia (Wildl.) Aschers. Bot. Zurh. 58(3):385-394, 2 plates (Najas, Russian text).

Durno, S. E. 1958. Identification of fossil fruits of Najas flexilis in Scotland. Transactions and Proceedings of the Botanical Society of Edinburgh 37:222-223.

* Haynes, R. R., and W. A. Wentz. 1974. Notes on the genus Najas (Najadaceae). Sida 5(4):259-264.

* Haynes, R. R. 1977. The Najadaceae in the southeastern United States. Journal of the Arnold Arboretum 58(2):161-170.

Kolesnikova, T. D. 1965. Recent and past distribution of the species of the genus Najas L. in the U.S.S.R. and their significance for the paleogeography of the Quaternary Period. (Russian text with English summary). Bot. Zhur. 50:182-190.

Merilainen, J. 1968. Najas minor All. in North America. Rhodora 70:161-175.

NYCTAGINACEAE

Bogle, A. L. 1974. The genera of Nyctaginaceae in the southeastern United States. Journal of the Arnold Arboretum 55:1-37.

NYMPHAEACEAE

Wood, C. E., Jr. 1959. The genera of the Nymphaeaceae and Ceratophyllaceae in the southeastern United States. Journal of the Arnold Arboretum 40:94-112.

NYSSACEAE -- See CORNACEAE

OLEACEAE

Miller, G. N. 1955. The genus Fraxinus, the ashes, in North America, north of Mexico. Cornell University Agricultural Experiment Station Memoir 335.

Wilson, K. A., and C. E. Wood, Jr. 1959. The genera of Oleaceae in the southeastern United States. Journal of the Arnold Arboretum 40:369-384.

ONAGRACEAE

Carlquist, and S., and P. H. Raven. 1966. The systematics and anatomy of Gongylocarpus (Onagraceae). American Journal of Botany 53(4):378-390.

Raven, P. H. 1969. A revision of the genus Camissonia (Onagraceae). Contributions from the United States National Herberium 37(5):1-396.

OROBANCHACEAE

Haynes, R. R. 1971. A monograph on the genus Conopholis (Orobanchaceae). Sida 4(3):246-264.

Thieret, J. W. 1971. The genera of Orobanchaceae in the southeastern United States. Journal of the Arnold Arboretum 52:404-435.

PALMAE

Biradar, M. V., and T. S. Mahabale. 1969. Studies on palms: fruits, seeds and seed germination in the genus Phoenix. Proceedings of the Indian Academy of Science, Sect. B, 70(2):55-65.

Vaughan, J. G. 1960. Structure of Acrocomia Fruit. Nature 188(4744):81.

PANDACEAE

Vaughan, J. G., and J. A. Rest. 1969. Note on the testa structure of Panda Pierre, Galearia Zoll. & Mor. and Microdesmis Hook. f. (Pandaceae). Royal Botanic Gardens, England, KEW Bulletin 23(2):215-218.

PAPAVERACEAE

Conolly, A. 1976. Use of the scanning electron microscope for the identification of seeds, with special reference to Saxifraga and Papaver. Folia Quaternaria 47:29-38.

Ernst, W. F. 1962. The genera of Papaveraceae and Fumariaceae in the southeastern United States. Journal of the Arnold Arboretum 43:315-343.

* Gunn, C. R., and M. J. Seldin. 1976. Seeds and fruits of North America Papaveraceae. U.S.D.A. Agricultural Research Service Technical Bulletin No. 1517:1-96.

Harris, J. A. 1910. A quantitative study of the morphology of the fruit of the bloodroot, Sanguinaria canadensis. Biometrika 7:305-351.

Kiger, R. W. 1973. Sectional nomenclature in Papaver L. Taxon 22:579-582.

Kiger, R. W. 1975. Papaver of North America - north of Mexico Rhodora 77:410-422.

Swarbrick, J. T., and J. C. Raymond. 1970. The identification of the seeds of the British Papaveraceae. Annals of Botany 34(138):1115-1122.

PASSIFLORACEAE

Brizicky, G. K. 1961. The genera of Turneraceae and Passifloraceae in the southeastern United States. Journal of the Arnold Arboretum 42:204-218.

PHYTOLACCACEAE

Thieret, J. W. 1966. Seeds of some United States Phytolaccaceae and Aizoaceae. Sida 2(5):352-360.

PINACEAE -- Seeds and Cones

Barnett, J. P., and B. F. McLemore. 1965. Cone and seed characteristics of sand pine. U.S.D.A. Forest Service Research Paper SO-19:1-13.

Cont. PINACEAE -- Seeds and Cones

Ching, T. M., and K. K. Ching. 1962. Physical and physiological changes in maturing Douglas-fir cones and seed. Forest Science 8:21-31.

Daubenmire, R. 1968. Some geographic variations in Picea sitchensis and their ecologic interpretation. Canadian Journal of Botany 46(7):787-798.

Daubenmire, R. 1972. On the relation between Picea pungens and Picea engelmannii in the Rocky Mountains. Canadian Journal of Botany 50:733-742.

Daubenmire, R. 1974. Taxonomic and ecologic relationships between Picea glauca and Picea engelmannii. Canadian Journal of Botany 52(7):1545-1560.

Delcourt, P. A., and H. R. Delcourt. 1977. The Tunica Hills, Louisiana - Mississippi: late glacial locality for spruce and deciduous forest species. Quaternary Research 7(2):218-237.

Eliason, E. J., and C. E. Heit. 1940. The size of Scotch pine cones as related to seed size and yield. Journal of Forestry 38:65-66.

Goggins, J. F., and E. C. Posey. 1968. Variation in seeds and ovulate cones of some species and varieties of Cupressus. Alabama Agricultural Experiment Station Circular No. 160.

* Hills, L. V., and R. T. Ogilvie. 1970. Picea banksii n. sp. Beaufort Formation (Tertiary), northwestern Banks Island, Arctic Canada. Canadian Journal of Botany 48:457-464.

Kraus, J. F. 1967. Heritability of some seed characteristics in slash pine (Pinus elliottii Engelm.). Dissertation Abstracts Sect. B, 27(12):4199B.

Langdon, O. G. 1958. Cone and seed size of south Florida slash pine and their effects on seedling size and survival. Journal of Forestry 56:122-127.

Larsen, J. A. 1922. Some characteristics of seeds of coniferous trees from the Pacific Northwest. National Nurseryman 30:246-249.

Little, E. L., Jr., S. Little, and W. T. Doolittle. 1967. Natural hybrids among pond, loblolly, and pitch pines. U.S.D.A. Forest Service Resarch Paper NE-67:1-22.

McLemore, B. F. 1975. Cone and seed characteristics of fertilized and unfertilized longleaf pines. U.S.D.A. Forest Service Research Paper SO-109:1-10.

Cont. PINACEAE -- Seeds and Cones

Mergen, F., and K. B. Pomeroy. 1954. Tree improvement research at the Lake City, Florida, Research Center, a project analysis. U.S.D.A. Forest Service, Southeastern Forest Experiment Station Paper 45:1-59.

Myers, O., Jr., and F. H. Bormann. 1963. Phenotypic variation in Abies balsamea in response to altitudinal and geographic gradients. Ecology 44(3):429-436.

Olson, J. S., F. W. Stearns, and H. Nienstaedt. 1959. Eastern Hemlock seeds and seedlings, response to photoperiod and temperature. Connecticut Agricultural Experiment Station, Bulletin 620:1-70.

Sargent, C. S. 1965. (Republication of 1922 edition). Manual of the trees of North America. Dover Publications Inc., New York. 2 volumes.

Simak, M. 1953. Uber die Samenmorphologie der gemeinen Kiefer (Pinus silvestris L.). Medd. Stratens Skogsforskningsinst. 43:(2):1-30.

Sorensen, F. C., and R. S. Miles. 1978. Cone and seed weight relationships in Douglas-fir from western and central Oregon. Ecology 59(4):641-644.

Squillace, A. E. 1957. Variations in cone properties, seed yield and seed weight in western white pine when pollination is controlled. School of Forestry, Montana State University, Missoula, Montana, USA Bulletin No. 5.

Squillace, A. E. 1966. Geographic variation in slash pine. Society of American Foresters, Forest Science Monograph 10:1-56.

Srodon, A. 1967. The common spruce in the Quaternary of Poland. Acta Palaeobotanica 8(2):3-61.

Sziklai, O. 1969. Preliminary notes on variation in cone and seed morphology of Douglas-fir, Pseudotsuga menziesii (Mirb.) Franco. Second World Consultation on Forest Tree Breeding, FAO-FO-FTB-69-6/9.

Zobel, D. B. 1970. Morphological characterization of Pinus pungens. Journal of the Elisha Mitchell Scientific Society 86(4):214-221.

PLANTAGINACEAE

Swarbrick, J. T., and J. C. Raymond. 1970. The identification of the seeds and achenes of the British Plantaginaceae. Annals of Botany (London) 34(138):1123-1129.

PLATANACEAE

Ernst, W. R. 1963. The genera of Hamamelidaceae and Platanaceae in the southeastern United States. Journal of the Arnold Arboretum 44:193-210.

POACEAE -- See GRAMINEAE

POLEMONIACEAE

Grant, V. 1959. Natural history of the Phlox family. Int. Scholars Forum, Martinus Nighoff, The Hague, Netherlands, 280 pp.

POLYGALACEAE

Miller, N. G. 1971. The Polygalaceae in the southeastern United States. Journal of the Arnold Arboretum 52:267-285.

Smith, R. R., and D. B. Ward. 1976. Taxonomy of the genus Polygala series Decurrentes (Polygalaceae). Sida 6(4):284-310.

POLYGONACEAE

Brooks, G. M., and T. R. Mertens. 1972. A biosystematic study of Polygonum ramosissimum and Polygonum tenue. Proceedings of the Indiana Academy of Science 81:277-283.

Graham, S. A., and C. E. Wood, Jr. 1965. The genera of Polygonaceae in the southeastern United States. Journal of the Arnold Arboretum 46:115-121.

Hai-Lin, Li. 1952. The genus Tovara (Polygonaceae). Rhodora 54:19-25.

Horton, J. H. 1972. Studies of the southeastern United States flora. IV. Polygonaceae. Journal of the Elisha Mitchell Scientific Society 88(2):92-102.

Marek, S. 1954. Morphological and anatomical features of the fruits of genera Polygonum L., Rumex L. and keys for their determination. Monographiae Botanicae 2 (Polish text).

Marek, S. 1958. European genera of Polygonaceae in the light of anatomical and morphological investigations on their fruits and seeds. Monographiae Botanicae 6 (Polish text).

Cont. POLYGONACEAE

* Martin, A. C. 1954. Identifying Polygonum seeds. Journal of Wildlife Management 18(4):514-520.

* Mertens, T. R., and P. H. Raven. 1965. Taxonomy of Polygonum, section Polygonum (Avicularia) in North America. Madrono 18(3):85-92.

Mertens, T. R. 1968. Polygonum -- a knotty problem in plant taxonomy. American Biology Teacher 30(10):832-840.

Moore, D. N., T. R. Mertens, and J. E. Highwood. 1970. Cytotaxonomic notes on genus Polygonum, section Polygonum. Proceedings of the Indiana Academy of Science 79:396-400.

Rechinger, K. H., Jr. 1937. The North American species of Rumex. Publ. Field Museum Bot. 17(1):1-151.

* Savage, A. D., and T. R. Mertens. 1968. A taxonomic study of genus Polygonum, section Polygonum (Avicularia) in Indiana and Wisconsin. Proceedings of the Indiana Academy of Science 77:357-369.

Stanford, E. E. 1925. The amphibious group of Polygonum, subgenus Persicaria. Rhodora 27:156-166.

Stanford, E. E. 1927. Polygonum hydropiper in Europe and North America. Rhodora 29:77-87.

Styles, B. T. 1962. The taxonomy of Polygonum aviculare and its allies in Britain. Watsonia 5(4):177-214.

Timson, J. 1965. Fruit variation in Polygonum persicaria L. Watsonia 6(2):106-108.

Woodcock, E. F. 1918. The structure of the mature seed of Eriogonum microthecum. Annual Report of the Michigan Academy of Science 20:233-235.

PORTULACACEAE

Bogle, A. L. 1969. The genera of Portulacaceae and Basellaceae in the southeastern United States. Journal of the Arnold Arboretum 50:566-598.

Kowal, T. 1961. Morphology and anatomy of the seeds in Portulacaceae Rchb. Monographiae Botanicae 12:3-47 (Polish text with English summary).

Cont. PORTULACACEAE

Kowal, T. 1965. The principles and examples of plant systematics worked out by the dendritic method. Prace Wroclawskiego Towarzystwa Naukowego, Ser. B, No. 117:5-68 (Polish text with English summary).

POTAMOGETONACEAE

* Aalto, M. 1970. Potamogetonaceae fruits. I. Recent and subfossil endocarps of the Fennoscandian species. Acta Botanica Fennica 88:1-85.

* Fernald, M. L. 1932. The linear-leaved North America species of Potamogeton, section Axillares. Memoirs of the Gray Herbarium of Harvard University 3:1-183 (Also Memoirs of the American Academy of Arts and Sciences 17(1):1-183).

* Haynes, R. R. 1974. A revision of North American Potamogeton subsection pusilli (Potamogetonaceae). Rhodora 76(808):564-649.

Haynes, R. R., and J. L. Reveal. 1973. A re-evaluation of Potamogeton fibrillosus Fern. (Potamogetonaceae). Rhodora 75(801):75-77.

* Jessen, K. 1955. Key to subfossil Potamogeton. Botanisk Tidsskrift 52(1):1-7.

Madalski, J. 1949. Morphological characteristics of the endocarps of the European species of Potamogeton (Tourn.) L., with a key to the identification of their Pleistocene remains. C. R. Soc. Sci. Wroclaw 4:1-13.

* Martin, A. C. 1951. Identifying pondweed seeds eaten by ducks. Journal of Wildlife Management 15(3):253-258.

* Ogden, E. C. 1943. The broad-leaved species of Potamogeton of North America north of Mexico. Rhodora 45(531):57-105; 45(532):119-163; and 45(533):171-214.

Ogden, E. C. 1974. Potamogeton in New York. New York State Museum & Science Service, Bulletin No. 433:1-20.

* Reznicek, A. A., and R. S. W. Bobbette. 1976. The taxonomy of Potamogeton subsection hybridi in North America. Rhodora 78(816):650-673.

St. John, H. 1916. A revision of the North American species of Potamogeton of the section Coleophylli. Rhodora 18:121-138.

RANUNCULACEAE

Benson, L. 1942-1943. North American Ranunculi. I-V. Bulletin of the Torrey Botanical Club (1942) 68:157-172, 477-490, 640-659; (1943) 69:298-316, 373-386.

* Benson, L. 1948, 1954. A treatise on the North American Ranunculi. American Midland Naturalist (1948) 40(1):1-261; Supplement (1954) 52(2):328-369.

Benson, L. 1955. The Ranunculi of the Alaskan Arctic Coastal Plain and the Brooks Range. American Midland Naturalist 53(1):242-255.

Boivin, B. 1944. American Thalictra and their old world allies. Rhodora 46:337-377, 391-445, and 453-487.

Cook, C. D. K. 1963. Studies in Ranunculus subgenus Batrachium (DC) A. Gray. II. General morphological considerations in the taxonomy of the subgenus. Watsonia 5:294-303.

* Cook, C. D. K. 1966. A monographic study of Ranunculus subgenus Batrachium (DC) A. Gray. Mitt. Bot. Staatssmml. Munchen 6:47-237.

Wojciechowska, B., and J. Makulec. 1969. Seed morphology and anatomy of some Aconitum species. Monographiae Botanicae 29:137-157, 5 plates.

RHIZOPHORACEAE

Graham, S. A. 1964. The genera of Rhizophoraceae and Combretaceae in the southeastern United States. Journal of the Arnold Arboretum 45:285-301.

ROSACEAE

Gabrielyan, E. T., and L. G. Muradyan. 1972. Anatomic structures of the fruit of exotic Sorbus spp. Uch. Zap. Erevan Univ., Estestv. Nauk. 2(120):84-95.

Gabrielyan, E. T. 1975. Anatomy of the seed coat of Asiatic species of the genus Sorbus in connection with their taxonomy. Biol. Zh. Arm. 28(4):15-22.

* Kelley, W. R. 1953. Study of seed identification and seed germination of Potentilla spp. and Veronica spp. Cornell University, Agricultural Experiment Station Memoir 317:1-31.

Cont. ROSACEAE

Kowal, T., and A. Krupinska. 1969. The diagnostic characters of fruits and seeds of Geum L. species. Monographiae Botanicae 29:69-119 (Polish text with English key and summary).

Jones, G. N. 1946. American species of Amelanchier. University of Illinois Press, Urbana, Ill.

Robertson, K. R. 1974. The genera of the Rosaceae in the southeastern United States. Journal of the Arnold Arboretum 55:344-401.

Rydberg, P. A. 1898. A monograph of the North American Potentillaceae. Memoir of the Department of Botany, Columbia University 2:1-221.

Werner, P. A., and J. D. Soule. 1976. The biology of Canadian weeds. 18. Potentilla recta L., P. norvegica L., and P. argentea L. Canadian Journal of Plant Science 56:591-603.

Villaret-Von Rochow, M. 1969. Fruit size variability of Swiss prehistoric Malus sylvestris. In Ucko, P. and G. W. Dimbleby (Eds.), The domestication and exploitation of plants and animals. London.

RUBIACEAE

Gourmat, M. J., and J. L. Guignard. 1975. The fruit of four French Rubiaceae, pp. 317-325. In Mohan, R., H.U.J.J. Shah, and C. X. Shah (Eds.), Form, structure and function in plants. Sanita Prakshan Nauchandi, India.

RUTACEAE

Brizicky, G. K. 1962. The genera of Rutaceae in the southeastern United States. Journal of the Arnold Arboretum 43:1-22.

SALICACEAE

Malyutina, E. T. 1975. The morphology and biology of seed germination in some Salix spp. and their importance for the taxonomy of the genus. Byull. Mosk. O-Va Ispyt. Prir. Otd. Biol. 80(6):104-117.

SAPINDACEAE

Brizicky, G. K. 1963. The genera of Sapindales in the southeastern United States. Journal of the Arnold Arboretum 44:462-501.

SARRACENIACEAE

Wood, C. E., Jr. 1960. The genera of Sarraceniaceae and Droseraceae in the southeastern United States. Journal of the Arnold Arboretum 41:152-163.

SAURURACEAE

Wood, C. E. Jr. 1971. The Saururaceae in the southeastern United States. Journal of the Arnold Arboretum 52:479-485.

SAXIFRAGACEAE

Conolly, A. 1976. Use of the scanning electron microscope for the identification of seeds, with special reference to Saxifraga and Papaver. Folia Quaternaria 47:29-38.

Spongberg, S. A. 1972. The genera of Saxifragaceae in the southeastern United States. Journal of the Arnold Arboretum 53:409-498.

Tayler, R. L. 1965. The genus Lithophragma (Saxifragaceae). University of California, Publications in Botany 37:1-122.

SCROPHULARIACEAE

* Kelley, W. R. 1953. Study of seed identification and seed germination of Potentilla spp and Veronica spp. Cornell University, Agricultural Experiment Station Memoir 317:1-31.

Pennell, F. W. 1935. The Scrophulariaceae of eastern temperate North America. The Academy of Natural Sciences of Philadelphia, Monographs 1:1-650.

SOLANACEAE

Goodspeed, T. H. 1954. The genus Nicotiana: origins, relationships and evolution of its species in the light of their distribution, morphology and cytogenetics. Chronica Botanica 16(1/6):1-536.

* Gunn, C. R., and F. B. Gaffney. 1974. Seed characteristics of 42 economically important species of Solanaceae in the United States. U.S.D.A. Agricultural Research Service, Technical Bulletin No. 1471:1-33.

Cont. SOLANACEAE

Miller, R. H. 1969. A morphological study of Solanum mammosum and its mammiform fruit. Botanical Gazette 130(4):230-237.

Wallis, T. E. 1965. Datura sanguinea Ruiz. et Pav., its seeds. Journal of Pharmacy and Pharmacology 17:335-368.

Wellendorf, M. 1962. The anatomy and histology of seeds of Datura cornigera Hook. Journal of Pharmacy and Pharmacology 14(3):157-160.

Wojciechowska, B. 1972. Systematic studies on the seeds of the Solanaceae Pers. family. Monographiae Botanicae 36:117-197 (Polish text with English summary).

SPARGANIACEAE

Cook, C. D. K. 1961. Sparganium in Britain. Watsonia 5:1-10 (eight British sp. and ssp.).

STAPHYLEACEAE

Spongberg, S. 1971. The Staphyleaceae in the southeastern United States. Journal of the Arnold Arboretum 52:196-203.

STYRACACEAE

Gonsoulin, G. T. 1974. A revision of Styrax (Styracaceae) in North America, Central America, and the Caribbean. Sida 5(4):191-259.

THEACEAE

Wood, C. E. Jr. 1959. The genera of Theaceae of the southeastern United States. Journal of the Arnold Arboretum 50:413-419.

TILIACEAE

Bamps, P., and A. Robyns. 1977. Westphalina macrocarpa, new genus, new species, Tiliaceae, from Guatemala. Bull. Jard. Bot. Natl. Belg. 47(1-2):183-190.

Brizicky, G. K. 1965. The genera of Tiliaceae and Elaeocarpaceae in the southeastern United States. Journal of the Arnold Arboretum 46:286-307.

Jones, G. N. 1968. Taxonomy of American species of linden (Tilia). University of Illinois Press, Urbana, Illinois.

ULMACEAE

Elias, T. S. 1970. The genera of Ulmaceae in the southeastern United States. Journal of the Arnold Arboretum 51:18-40.

UMBELLIFERAE

Chuang, T., and L. Constance. 1969. A systematic study of Perideridia (Umbelliferae-Aploideae). University of California Press.

Coulter, J. M., and J. N. Rose. 1901-1902. Monograph of the North American Umbelliferae. Contributions from the United States National Herbarium 7:9-256.

Kowal, T. 1975. Fruit morphology of some Heracleum L. species. Monographiae Botanicae 49:79-108 (Polish text with English summary).

Kowal, T., and S. Pic. 1975. Fruit anatomy of some Heracleum species. Monographiae Botanicae 49:111-137.

Mathias, M. E. 1930. Studies in the Umbelliferae. III. A monograph of Cymopterus including a critical study of related genera. Annals of the Missouri Botanical Garden 17:213-477.

Mathias, M. E., and L. Constance. 1944. Umbelliferae (Pars). North American Flora 28B:43-160.

* Murley, M. R. 1946. Fruit key to the Umbelliferae in Iowa, with plant distribution records. Iowa State College, Journal of Science 20(3):349-364.

Tseng, C. C. 1967. Anatomical studies of flower and fruit in Hydrocotyloideae (Umbelliferae). University of California Press.

URTICACEAE

Bassett, I. J., C. W. Crompton, and D. W. Woodland. 1974. The family Urticaceae in Canada. Canadian Journal of Botany 52(3):503-516.

Fernald, M. L. 1936. II. Pilea in eastern North America. Rhodora 38:169-182.

Hinton, B. D. 1969. Parietaria hespera (Urticaceae), a new species of the southwestern United States. Sida 3(5):293-297.

Cont. URTICACEAE

Miller, N. G. 1971. The genera of the Urticaceae in the southeastern United States. Journal of the Arnold Arboretum 52:40-68.

Woodland, D. W. 1974. Biosystematics of the perennial North American species of Urtica. Ph.D. Dissertation, Iowa State University, Ames.

Woodland, D. W., I. J. Bassett, and C. W. Crompton. 1976. The annual species of stinging nettle (Hesperocnide and Urtica) in North America. Canadian Journal of Botany 54(3&4):374-383.

VERBENACEAE

Perry, L. M. 1933. A revision of the North American species of Verbena. Annals of the Missouri Botanical Garden. 20(2):239-358.

VITACEAE

Brizicky, G. K. 1965. The genera of Vitaceae in the southeastern United States. Journal of the Arnold Arboretum 46:48-67.

XYRIDACEAE

Kral, R. 1966. Xyris (Xyridaceae) of the continental United States and Canada. Sida 2(3):177-260.

ZYGOPHYLLACEAE

Porter, D. M. 1972. The genera of Zygophyllaceae in the southeastern United States. Journal of the Arnold Arboretum 53:531-552.

WEED SEEDS

Agricultural Research Service, U.S.D.A. 1970. Selected weeds of the United States. U.S.D.A. Agricultural Handbook No. 366:1-463. (Reprinted by Dover Publications in 1971 as "Common weeds of the United States").

Beal, W. J. 1910. Seeds of Michigan weeds. Michigan State College, Agricultural Expt. Station Bulletin 260.

Bellue, M. K. 1946. Weed seed handbook, Series VI. California Department of Agriculture Bulletin 35:159-166.

Buchholtz, K. P., B. H. Grigsby, O. C. Lee, F. W. Slife, C. J. Willard, and N. J. Volk. 1960 (Reprinted in 1973). Weeds of the north central States. University of Illinois Agricultural Experiment Station Circular 718:1-262.

* Delorit, R. J. 1970. An illustrated taxonomy manual of weed seeds. Agronomy Publications, River Falls, Wisconsin, 175 pp.

Egginton, G. E. 1921. Colorado weed seeds. Colorado Agricultural Experiment Station Bulletin 260.

Frankton, C., and G. A. Mulligan. 1970. Weeds of Canada. Queen's Printer, Ottawa, Ontario, 217 pp.

Gaines, X. M., and D. G. Swan. 1972. Weeds of eastern Washington and adjacent areas. Camp-Na-Bor-Lee Assoc., Inc., Publ, 349 pp.

Georgia, A. 1916. A manual of weeds. Macmillan Co., New York.

Gunn, C. R. 1969. Seeds of the United States noxious and common weeds in the Convolvulaceae, excluding the genus Cuscuta. Proceedings of the Association of Official Seed Analysts 59:101-115.

Hyde, E. O. C. 1957. Weed seeds in agricultural seed. New Zealand Department of Agriculture Bulletin 316:1-48.

Isley, D. 1947. Seeds of weedy thistles. Proceedings of the Association of Official Seed Analysts 37:93-98.

Isley, D. 1949 (Reprinted in 1952). Seeds of Iowa noxious weeds. Iowa State College, Ames, Agricultural Experiment Station Bulletin P101:429-454.

Isley, D., and W. H. Bragonier. 1962. Seeds of Iowa, noxious and common weeds. Iowa Agricultural and Home Economics Experiment Station Bulletin P 131.

Cont. WEED SEEDS

Isley, D., and W. H. Wright. 1954. Noxious weed seeds. Iowa State College, Journal of Science 28:521-586.

Korsmo, E. 1935. Unkrautsamen (weed seeds). Gyldendel Norsk Forlag. Grondahl and Sons, Oslo, Norway, 175 pp.

McIntyre, C. N. 1942. Weeds and weed seeds. Ohio Department of Agriculture, 74 pp.

Montgomery, F. H. 1964. Weeds of Canada and the northern United States. F. Warner, New York, N.Y., 226 pp.

* Musil, A. F. 1963. Identification of crop and weed seeds. U.S.D.A. Agricultural Handbook 219:1-171.

Paatela, J., and L. R. Ervio. 1972. Weed seeds in cultivated soils in Finland. Annals Agricultural Fenniae 10(3):144-152.

Palmer, E. L. 1916. A seed key to some common weeds and plants. Proceedings of the Iowa Academy of Science 23:335-394.

Parkinson, S. T., and G. Smith. 1914. Impurities of agricultural seed with a description of commonly occurring weed seeds and a guide to their identification. Ashford, England, and Bishopsgate, Canada, 105 pp.

Shinbara, B. H. 1966. Noxius weed seeds of Hawaii. Hawaii Department of Agriculture, Honolulu, 54 pp.

Stewart, F. C. 1892. A key for the identification of weed seeds found in clover seed. Proceedings of the Iowa Academy of Science 1:84.

Wright, W. H. 1950-1955. Weed seeds. Canadian Department of Agriculture, Queen's Printer, Ottawa, Ontario. 8 sections with 36 species per section, $1.50 per section.

CONIFER NEEDLES: EPIDERMAL AND ANATOMICAL FEATURES

Bertrand, C. E. 1871. Note sur le genre Abies. Bull. Soc. Bot. France 18:376-381.

Bertrand, C. E. 1874. Anatomie comparée des tiges et des feuilles chez les Gnetacées et les Conifères. Annales des Sciences Naturelles. Botanique 20:5-153.

Boulter, M. C. 1971. Fine details of some fossil and recent conifer leaf cuticles, pp. 211-235. In Heywood, V. H. (Ed.), Scanning electron microscopy: systematic and evolutionary applications. Academic Press for Systematics Association, London.

Carlson, C. E., and G. M. Blake. 1969. Hybridization of western and subalpine larch. Montana Forestry and Conservation Experiment Station, Missouri, Bulletin 37:1-12.

Coulter, J. M., and J. N. Rose. 1886. Synopsis of North American pines, based upon leaf-anatomy. Botanical Gazette 11:256-262, 302-309.

Cross, C. E. 1940. Notes on the vegetative and reproductive anatomy of living and fossil conifers. Unpublished Ph.D. Thesis, Harvard University.

Dallimore, W., and A. B. Jackson. 1966. A Handbook of Coniferae and Ginkoaceae (4th Ed., revised by G. G. Harrison). Arnold, London.

Daquillon, H. 1888. Observations sur la structure des feuilles de quelques coniferes. Bull. Soc. Bot. France 35(57).

Daquillon, H. 1890. Recherches morphologiques sur les feuilles des conifères. Revue Générale de Botanique 11(2):154-161, 201-216, 245-275, 307-320, 345-358, plates 15-18.

Denke, F., and R. W. Funsch. 1972. Resin canal number varies in pondersoa pine (Pinus ponderosa Laws.). Silvae Genetica 21:242.

Doi, T., and K. Morikawa. 1929. An anatomical study of the leaves of the genus Pinus. Journal of the Department of Agriculture, Kyushu Imp. University 2(6):149-198.

* Durrell, L. W. 1916. Notes on some North American conifers based on leaf characters. Proceedings of the Iowa Academy of Science 23:519-582.

Florin, R. 1931. Untersuchungen zur stamesgeshicte der coniferales and cordaitales. Kongl. Vetenskaps. Acadiems Handlinger Ser. 5, 10(1):1-588.

Cont. CONIFER NEEDLES

* Fulling, E. H. 1934. Identification, by leaf structure, of the species of Abies cultivated in the United States. Bulletin of the Torrey Botanical Club 61(9):497-524, 32 plates.

* Harlow, W. M. 1931 (Reprinted 1947). The identification of the pines of the United States, native and introduced, by needle structure. New York State College of Forestry at Syracuse University, Technical Publication No. 32 (Bulletin Vol. XX, No. 2), 19 p., 19 plates.

Helmers, A. E. 1943. The ecological anatomy of ponderosa pine needles. American Midland Naturalist 29:55-71.

* Keng, H., and E. L. Little, Jr. 1961. Needle characteristics of hybrid pines. Silvae Genetica 10(5):131-146.

* Kilgore, W. E. 1936. Needle structure of Pseudotsuga Carr. species and some varieties, and its value in classification. Unpublished M.S. Thesis, College of Forestry, New York State University at Syracuse.

LaCroix, J. D. 1962. Morphological anomalies in leaves of Pinus elliottii Engelm. Canadian Journal of Botany 40:686-687.

Lanner, R. M., and T. R. Van Devender. 1974. Morphology of pinyon pine needles from fossil packrat middens in Arizona. Forest Science 20(3):207-211.

Laubenfels, D. J., de. 1953. The external morphology of coniferous leaves. Phytomorphology 3(1,2):1-21.

Leyton, L., and L. P. Armitage. 1968. Cuticle structure and water relations of the needles of Pinus radiata (D. Don). New Phytologist 67:31-38.

* Little, E. L., Jr., S. Little, and W. T. Doolittle. 1967. Natural hybrids among pond, loblolly, and pitch pines. U.S.D.A. Forest Service Research Paper NE-67:1-22.

* Little, E. L., Jr., and F. I. Righter. 1965. Botanical descriptions of forty artificial pine hybrids. U.S.D.A. Technical Bulletin 1345:1-47.

Liu, Tang-Shui. 1971. The genus Abies. Taipei, Taiwan, Museum Quarterly Journal 24(1,2):105-172.

Liu, Tang-Shui. 1971. The genus Abies. (II). Taipei, Taiwan, Museum Quarterly Journal 24(3,4):365-410.

Cont. CONIFER NEEDLES

Liu, Tang-Shui. 1972. The genus Abies. (III). Taipei, Taiwan, Museum Quarterly Journal 25(1,2):85-145.

Liu, Tang-Shui. 1972. The genus Abies. (IV). Taipei, Taiwan, Museum Quarterly Journal 25(3,4):231-295.

Liu, Tang-Shui. 1973. The genus Abies. (V). Taipei, Taiwan, Museum Quarterly Journal 26(1,2):167-215.

Liu, Tang-Shui. 1973. The genus Abies. (VI). Taipei, Taiwan, Museum Quarterly Journal 26(3,4):407-442.

Liu, Tang-Shui. 1974. The genus Abies. (VII). Taipei, Taiwan, Museum Quarterly Journal 27(1,2):191-238.

Liu, Tang-Shui. 1974. The genus Abies. (VIII). Taipei, Taiwan, Museum Quarterly Journal 27(3,4):469-519.

Liu, Tang-Shui. 1975. The genus Abies. (IX). Taipei, Taiwan, Museum Quarterly Journal 28(1,2):219-268.

Liu, Tang-Shui. 1975. The genus Abies. (X). Taipei, Taiwan, Museum Quarterly Journal 28(3,4):483-547.

McNab, W. R. 1876. Structures of the leaves of Pinus (Pseudotsuga) Douglassii (= amabilis, Parlatore). Quarterly Journal of Microscope Science 16:414 (abstract).

McNab, W. R. 1879. Structure of the green normal leaves of Pinus monophylla. Quarterly Journal of Microscope Science 19:441-442 (abstract).

* Marco, H. F. 1932. The identification of the spruces (Picea) by needle structure. Unpublished M.S. Thesis, College of Forestry, New York State University at Syracuse, 29 pp.

Masters, M. I. 1891. Review of some points of the comparative morphology, anatomy, and life-history of the Coniferae. Journal of the Linnean Society of Botany 27:226-332.

Mergen, F. 1958. Genetic variation in needle characteristics of slash pine and in some of its hybrids. Silvae Genetica 7(1):1-9.

* Mergen, F. 1959. Applicability of the distribution of stomates to verify pine hybrids. Silvae Genetica 8(4):107-109.

Cont. CONIFER NEEDLES

* Mergen, F., G. R. Stairs, and E. B. Snyder. 1965. Natural and controlled loblolly x shortleaf pine hybrids in Mississippi. Forest Science 11(3):306-314.

Mergen, F., E. B. Snyder, and J. Burley. 1966. Variation in coastal and insular slash pine of Mississippi and Alabama. American Midland Naturalist 76(2):482-495.

Minckler, L. S. 1936. Transpiration and leaf anatomy of forest trees. Unpublished Ph.D. Thesis, College of Forestry, New York State University at Syracuse.

Orr, M. Y. 1937. On the value for diagnostic purposes of certain of the anatomical features on conifer leaves. Royal Botanical Garden 94:255-266, 3 plates.

Rook, D. A., H. Hellmers, and J. D. Hesketh. 1971. Stomata and cuticular surfaces of Pinus radiata needles as seen with a scanning electron microscope. Journal of the Arizona Academy of Science 6(3):222-225.

Sargent, C. S. 1898. Silva of North America. Houghton Mifflin Co., New York. Vol. 12.

Sargent, C. S. 1947. Silva of North America. Peter Smith, New York, 6 volumes.

Sharp, S. S. 1915. Notes on the determination of Rocky Mountain conifers 15(1):1-9.

Shaw, G. R. 1914 (Reprinted 1958). The genus Pinus. Arnold Arboretum Publ. 5:1-96.

* Squillace, A. E. 1966. Geographic variation in slash pine. Forest Science, Monogaph 10:1-56.

Sudworth, G. B. 1915. The cypress and juniper trees of the Rocky Mountain region. U.S. Department of Agriculture Bulletin 207:1-36.

Sutherland, M. 1934. A microscopical study of the structure of the leaves of the genus Pinus. Transactions and Proceedings of the New Zealand Institute 63:517-568.

Thames, J. L. 1963. Needle variation in loblolly pine from four geographic seed sources. Ecology 44:168-169.

Cont. CONIFER NEEDLES

Trautman, W. 1953. Zwc unterscheidung fossiler spaltoffnungen der mitteleuropaischen coniferen. Systematisch - geobotanischen Institut der Universitat Gottingen, pp. 523-533.

Van Teighem, P. 1891. Structure et affinités des Abies et des génères les plus voisins. Bull. Soc. Bot. France 38:406-415.

White, J. B., and H. O. Beals. 1963. Variation in number of resin canals per needle in pond pine. Botanical Gazette 124:251-253.

Zobel, D. B. 1970. Morphological characterization of Pinus pungens. Journal of the Elisha Mitchell Scientific Society 86(4):214-221.

VEGETATIVE PLANT FRAGMENTS

Adams, L. 1957. A way to analyze herbivore food habits by faecal examination. North American Wildlife Conference, Transactions 22:152-159.

Adams, L., W. G. O'Regan, and D. J. Dunaway. 1962. Analysis of forage consumption by faecal examination. Journal of Wildlife Management 26:108-111.

Anthony, R. G., and N. S. Smith. 1974. Comparison of rumen and fecal analysis to describe deer diets. Journal of Wildlife Management 38:535-540.

Banfill, J. C., and M. A. Brusven. 1973. Food habits and ecology of grasshoppers in the Seven Devils Mountains and Salmon River Breaks of Idaho. Melanderia 12:1-21.

Bohrer, V. L. 1975. Recognition and interpretation of prehistoric remains of Mirabilis multiflora (Nyctaginaceae) in the Sacramento Mountains of New Mexico. Bulletin of the Torrey Botanical Club 102(1):21-25.

Brusven, M. A., and G. B. Mulkern. 1960. The use of epidermal characteristics for the identification of plants recovered in fragmentary condition from the crops of grasshoppers. North Dakota Agricultural Experiment Station Research Report 3:1-11.

Clark, C. A., and F. W. Gould. 1975. Some epidermal characteristics of paleas of Dicanthelium, Panicum, and Echinochloa. American Journal of Botany 62(7):743-748.

Cohen, A. D., and W. Spackman. 1972. Methods in peat petrology and their application to reconstruction of paleoenvironments. Geological Society of America Bulletin 83:129-142.

Cohen, A. D. 1973. Petrology of some Holocene peat sediments from the Okefenokee swamp-marsh complex of southern Georgia. Geological Society of America Bulletin 84:3867-3878.

Cohen, A. D. 1974. Petrography and paleoecology of Holocene peats from the Okefenokee swamp-marsh complex of Georgia. Journal of Sedimentary Petrology 44(3):716-726.

* Cohen, A. D., and W. Spackman. 1977. Phytogenic organic sediments and sedimentary environments in the Everglades-mangrove complex. Part II. The origin, description and classification of the peats of southern Florida. Palaeontographica 162(Abt. B):72-114.

Cont. VEGETATIVE PLANT FRAGMENTS

Davis, I. 1959. The use of epidermal characteristics for the identification of grasses in the leafy stage. Journal of the British Grassland Society 14(1):7-16.

Dayanandan, P., and P. B. Kaufman. 1976. Trichomes of Cannabis sativa L. (Cannabaceae). American Journal of Botany 63(5):578-591.

* Dilcher, D. L. 1974. Approaches to the identification of angiosperm leaf remains. Botanical Review 40:1-157.

Dolph, G. E. 1978. A proposal for data banking leaf information. Cour. Forschungsinst Senckenb. 30:159-157.

Flinders, J. T., and R. M. Hansen. 1972. Diets and habitats of jack rabbits in northeastern Colorado. Colorado State University, Fort Collins, Range Science Dept., Science Series 12:1-29.

Goodwin, G. A. 1975. Seasonal food habits of mule deer in southeastern Wyoming. U.S.D.A. Forest Service Research Note RM-287:1-4.

Hansen, R. M., and J. T. Flinders. 1969. Food habits of North American hares. Range Science Department, Colorado State University, Fort Collins, Science Series No. 1:1-18.

Hansen, R. M., R. C. Clarks, and W. Lawhorn. 1977. Foods of wild horses, deer, and cattle in the Douglas Mountain area, Colorado. Journal of Range Management 30(2):116-118.

Hansen, R. M., and I. K. Gold. 1977. Blacktail prairie dogs, desert cottontails and cattle trophic relations on shortgrass range. Journal of Range Management 30(3):210-214.

Hansen, R. M., and R. C. Clark. 1977. Foods of elk and other ungulates at low elevations in northwestern Colorado. Journal of Wildlife Management 41(1):76-80.

Hardin, J. W. 1976. Terminology and classification of Quercus trichomes. Journal of the Elisha Mitchell Scientific Society 92(4):151-161.

Heintzelman, C. E., Jr., and R. H. Howard. 1948. The comparative morphology of the Icacinaceae. V. The pubescence and crystals. American Journal of Botany 35:42-52.

Cont. VEGETATIVE PLANT FRAGMENTS

Hodson, A. C., and M. A. Brooks. 1956. The frass of certain defoliators of forest trees in the north central United States and Canada. Canadian Entomologist 88:62-68.

Hubbard, R. E., and R. M. Hansen. 1976. Diets of wild horses, cattle, and mule deer in the Piceance Basin, Colorado. Journal of Range Management 29(5):389-392.

Hercus, B. H. 1960. Plant cuticle as an aid to determining the diet of grazing animals. Proceedings of the Eighth International Grassland Congress 1960:443-447.

Isely, F. B., and G. Alexander. 1949. Analysis of insect food habits by crop examination. Science 109:115-116.

Knobloch, I. W., H. P. Rasmussen, and W. S. Johnson. 1975. Scanning electron microscopy of trichomes of Cheilanthes (Sinopteridaceae). Brittonia 27:245-250.

Landers, J. L., and A. S. Johnson. 1976. Bobwhite quail food habits in the southeastern United States with a seed key to important food. Tall Timbers Research Station, Tallahassee, Fla., Misc. Publ. No. 4:1-90.

Leuenberger, B., and R. Schill. 1974. Epidermal features of some "green mammillaries". Cactus and Succulent Journal 46(2):83-86.

McMenamin, J. P. 1940. The leaf anatomy of southeastern shrub-bog plants. Thesis, North Carolina State College.

Martin, D. J. 1955. Features on plant cuticle. An aid to the analysis of the natural diet of grazing animals with especial reference to Scottish hill sheep. Botanical Society of Edinburgh, Transactions 36:278-288.

Martin, J. T., and B. E. Juniper. 1970. The cuticles of plants. St. Martin's Press, New York.

Metcalf, C. R. 1960. Anatomy of the Monocotyledons. I. Gramineae. Oxford, New York.

Mulkern, G. B., and J. F. Anderson. 1959. A technique for studying the food habits and preferences of grasshoppers. Journal of Economic Entomology 52:342.

* Ogden, E. C. 1974. Anatomical patterns of some aquatic vascular plants of New York. New York State Museum and Science Service Bulletin 424:1-133.

Cont. VEGETATIVE PLANT FRAGMENTS

Olsen, F. W., and R. M. Hansen. 1977. Food relations of wild free-roaming horses to livestock and big game, Red Desert, Wyoming. Journal of Range Management 30(1):17-20.

Palmer, P. G. 1976. Grass cuticles: a new paleoecological tool for east African lake sediments. Canadian Journal of Botany 54(15):1725-1734.

Prat, H. 1932. L'epiderme des Graminées etude anatomique et systematique. Ann. Sci. Nat. X. Bot. 14:117-324.

Prat, H. 1936. La systematique des Graminées. Ann. Sci. Nat. X. Bot. 18:165-258.

Prat, H. 1948. General features of the epidermis in Zea mays. Annals of the Missouri Botanical Garden 35:341-351.

Roe, K. E. 1971. Terminology of hairs in the genus Solanum. Taxon 20:501-508.

Rollins, R. C., and U. C. Banerjee. 1975. Atlas of the trichomes of Lesquerella (Cruciferae). The Bussey Institution of Harvard University, Cambridge, Mass., 49 pp.

Schill, R., W. Barthlott, and N. Ehler. 1973. Cactus spines under the electron scanning microscope. Cactus and Succulent Journal 45:175-185.

Stewart, D. R. M. 1965. The epidermal characters of grasses, with special reference to east African plains species. Bot. Jahrb. Syst. Pflanzengesch. Pflanzengeogr. 84(1&2):63-174.

Stewart, D. R. M. 1967. Analysis of plant epidermis in faeces: A technique for studying the food preferences of grazing herbivores. Journal of Applied Ecology 4(1):83-111.

* Stoddard, E. M. 1965. Identifying plants by leaf epidermal characters. Connecticut Agricultural Experiment Station Circular 227:1-9.

Storr, G. M. 1961. Microscopic analysis of faeces, a technique for ascertaining the diet of herbivorous mammals. Australian Journal of Biological Sciences 14(1):157-164.

Tateoka, T., S. Inque, and S. Kawano. 1959. Notes on some grasses. IX. Systematic significance of bicellular microhairs of leaf epidermis. Botanical Gazette 121(2):80-91.

Cont. VEGETATIVE PLANT FRAGMENTS

Todd, J. W., and R. M. Hansen. 1973. Plant fragments in the feces of bighorns as indicators of food habits. Journal of Wildlife Management 37(3):363-366.

Ward, A. L. 1970. Stomach content and fecal analysis: methods of forage identification, pp. 146-158. In Range and wildlife habitat evaluation - a research symposium. U.S.D.A. Misc. Publ. No. 1147.

* Williams, O. B. 1969. An improved technique to identification of plant fragments in herbivore feces. Journal of Range Management 22:51-52.

Wiseman, E. 1969. Identifying varieties of Kentucky bluegrass by leaf epidermal characters. Proceedings of the Association of Official Seed Analysts 59:124-130.

Wiseman, E. 1970. Distinctions in leaf epidermal characters of Kentucky bluegrass and twenty five of its cultivars. Proceedings of the Association of Official Seed Analysts 60:79-89.

OPAL PHYTOLITHS

Amos, G. L. 1952. Silica in timbers. Commonwealth Scientific and Industrial Research Organization, Australian Wildlife Research, Bulletin 267:1-55.

Arimura, S., and I. Kanno. 1965. Some mineralogical and chemical characteristics of plant opals in soils and grasses of Japan. Bulletin of the Kyushu Argicultural Experiment Station 11:111-120.

Armitage, P. L. 1975. The extraction and identification of opal phytoliths from the teeth of ungulates. Journal of Archaeological Science 2(3):187-197.

Baker, G., and G. W. Leeper. 1958. Phytoliths in Victorian soils. Australian Journal of Science 21:84.

Baker, G. 1959. Opal phytoliths in some Victorian soils and "red rain" residues. Australian Journal of Botany 7:64-87.

Baker, G. 1959. A contrast in the opal phytolith assemblages of two Victorian soils. Australian Journal of Botany 7:88-96.

Baker, G. 1959. Fossil opal--phytoliths and phytolith nomenclature. Australian Journal of Science 21:305-306.

Baker, G. 1960. Phytolitharien. Australian Journal of Science 22:392-393.

Baker, G. 1960. Hook-shaped opal phytoliths in the epidermal cells of oats. Australian Journal of Botany 8:69-71.

Baker, G. 1960. Fossil opal phytoliths. Micropaleontology 6:79-85.

Beavers, A. H., and I. Stephen. 1958. Some features of the distribution of plant opal in Illinois soils. Soil Science 86:1-5.

Bertoldide, P. H. 1971. Trial morphological classification of the silicophytoliths. Ameghiniana 8(3-4):317-328.

Blackman, E. 1968. The pattern and sequence of opaline slica deposition in rye (Secale cereale L.). Annals of Botany 32(125):207-218.

Blackman, E., and D. W. Parry. 1968. Opaline silica deposition in rye (Secale cereale L.). Annals of Botany 32(125):199-206.

Cont. OPAL PHYTOLITHS

Blackman, E. 1969. Observations on the development of the silica cells of the leaf sheath of wheat (Triticum aestivum). Canadian Journal of Botany 47(6):827-838.

Blackman, E. 1971. Opaline silica bodies in the range grasses of southern Alberta. Canadian Journal of Botany 49(5):769-781.

Bonnett, O. T. 1972. Silicified cells of grasses: a major source of plant opal in Illinois soils. Illinois Agricultural Experiment Station Bulletin 142:1-32.

Brydon, J. E., W. G. Dore, and J. S. Clark. 1963. Silicified plant atherosclereids preserved in soil. Soil Science Society of America Proceedings 27:476-477.

* Carbone, V. A. 1977. Phytoliths as paleoecological indicators. Annals of the New York Academy of Sciences 288:194-205.

Chatters, R. M. 1941. A study of the ash of some American commercial woods with special reference to the existence of siliceous skeletons in the residues of cell walls. Thesis, University of Michigan, Ann Arbor.

Cherouvier, A., A. Gueguen, and J. C. Lefeuvre. 1975. Determination of the diet of phytophagous animals based on the analysis of the siliceous phytoliths of Gramineae and Cyperaceae, description of silica bodies based on scanning microscopic studies. C. R. Hebd. Seances Acad. Sci., Ser. D. Sci. Nat. 281(12).

DePomar, H. B. 1974-1975. Silicophytoliths, a synopsis of the knowledge. Darwiniana (B. Aires) 19(2-4):173-206.

Dormaar, J. F., and L. E. Lutwick. 1966. A biosequence of soils of the Rough Fescue Prairie-Poplar Transition in Southwestern Alberta. Canadian Journal of Earth Science 3:457-471.

Dormaar, J. F., and L. E. Lutwick. 1969. Infrared spectra of humic acids and opal phytoliths and indicators of palaeosols. Canadian Journal of Soil Science 49:29-37.

Drum, R. W. 1968. Electron microscopy of opaline phytoliths in Phragmites and other Gramineae. American Journal of Botany 55:713.

Folger, D. W., L. H. Burckle, and B. C. Heezen. 1967. Opal phytoliths in a North Atlantic dust fall. Science 155:1243-1244.

Cont. OPAL PHYTOLITHS

Frison, G. C. 1975. Man's interaction with Holocene environments on the Plain's. Quaternary Research 5:289-300.

Geis, J. W. 1973. Biogenic silica in selected species of deciduous angiosperms. Soil Science Society of America 116(2):113-119.

* Gross, E. R. 1973. Buried soils of the drainageways in the driftless area of the upper Mississippi River valley. Unpublished Ph.D. Thesis, University of Minnesota, Minneapolis, 195 pp. (phase contrast and SEM photographs of ten opal phytolith types produced by prairie grasses and five phytolith types produced by forest trees).

Gueguen, A., A. Cherouvier, and J. C. Lefeuvre. 1974. Importance of the study of the siliceous phytoliths in the determination of the alimentary regime of the graminivorous animals. Bull. Soc. Zool. Fr. 99(1):137-138.

Gueguen, A., A. Cherouvier, and J. C. Lefeuvre. 1975. Determination of the diet of phytophagous animals based on the analysis of the siliceous phytoliths of Gramineae and Cyperaceae, application to food selection by Acridid Orthoptera. C. R. Hebd. Seances Acad. Sci., Ser. D. Sci. Nat. 281(13).

Johnston, A., L. M. Bezeau, and S. Smoliak. 1967. Variation in silica content of range grasses. Canadian Journal of Plant Science 47(1):65-71.

* Jones, L. H. P., and K. A. Handreck. 1967. Silica in soils, plants, and animals. Advances in Agronomy 19:107-149.

Jones, L. H. P., A. A. Milne, and S. M. Wadham. 1963. Studies of silica in the oat plant. II. Distribution of the silica in the plant. Plant and Soil 18:358-371.

Jones, R. L. 1962. Biogenic opal in Illinois soils. Ph.D. Thesis, University of Illinois, Urbana, 79 pp.

Jones, R. L., and A. H. Beavers. 1963. Some mineralogical and chemical properties of plant opal. Journal of Soil Science 96(6):375-379.

Jones, R. L., W. W. Hay, and A. H. Beavers. 1963. Microfossils in Wisconsin loess and till from western Illinois and eastern Iowa. Science 140(3572):1222-1224.

* Jones, R. L., and A. H. Beavers. 1964. Aspects of catenary and depth distribution of opal phytoliths in Illinois soils. Soil Science Society of America Proceedings 28(3):413-416.

Cont. OPAL PHYTOLITHS

Jones, R. L., and A. H. Beavers. 1964. Variation of opal phytolith content among some great soil groups in Illinois. Soil Science Society of America Proceedings 28(5):711-712.

Jones, R. L., L. J. McKenzie, and A. H. Beavers. 1964. Opaline microfossils in some Michigan soils. Ohio Journal of Science 64(6):417-423.

Kanno, I., and S. Arimura. 1958. Plant opal in Japenese soils. Soil and Plant Food 4:62-67.

Lanning, F. C., R. W. X. Ponnaiya, and C. F. Crumpton. 1958. The chemical nature of silica in plants. Plant Physiology 33:339-343.

LaRoche, J. 1977. Silica and higher plants. Rev. Cytol. Biol. Veg. 40(1):15-46.

Lutwick, L. E. 1969. Identification of phytoliths in soils (paper presented at a symposium "Application of pedology to Quaternary research", University of Alberta, Edmonton, May 13-14, 1969). Pedology and Quaternary Research, pp. 77-82.

Lutwick, L. E., and A. Johnston. 1969. Cumulic soils of the Rough Fescue Prairie-Poplar Transition Region. Canadian Journal of Soil Science 49:199-203.

McDonald, L. L. 1974. Opal phytoliths as indicators of plant succession in north-central Wyoming. Unpublished M.S. Thesis, University of Wyoming, Laramie.

Miles, S. R. 1973. Vegetative history and boundary stability of park areas in the Medicine Bow National Forest. Unpublished M.S. Thesis, University of Wyoming, Laramie.

Oberholster, R. E. 1968. A method for separation of plant opal in soils. South Africa Journal of Agricultural Science 11:195-196.

Parmenter, C., and D. W. Folger. 1974. Eolian biogenic detritus in deep sea sediments: a possible index of equatorial ice age aridity. Science 184(4152):695-698.

Parry, D. W., and F. Smithson. 1958. Techniques for studying opaline silica in grass leaves. Annals of Botany 22:543-550.

Parry, D. W., and F. Smithson. 1958. Silicification of bulliform cells in grasses. Nature 181:1549-1550.

Cont. OPAL PHYTOLITHS

* Parry, D. W., and F. Smithson. 1964. Types of opaline silica depositions in the leaves of British grasses. Annals of Botany, New Series 28(109):169-185.

Parry, D. W., and F. Smithson. 1966. Opaline silica in the inflorescences of some British grasses and cereals. Annals of Botany 30:525-538.

Pearsall, D. M. 1978. Phytolith analysis of archaeological soils, evidence for maize cultivation in formative Ecuador. Science 199(4325):177-178.

Pease, D. S. 1967. Opal phytoliths as indicators of paleosoils. M.S. Thesis, New Mexico State University, University Park.

Pease, D. S., and J. U. Anderson. 1969. Opal phytoliths in Bouteloua eriopoda Torr. roots and soils. Soil Science Society of America Proceedings 33:321-322.

Remezova, G. L., K. N. Fedorov, and E. F. Tananykina. 1974. A method for studying phytoliths in plants and soils. Vestnik Moscow Universitet Pochvovedenie (Moscow Univ. Soil Sci. Bull.) 29(3/4):59-61, 98-100.

Riquer, J. 1960. Les phytoliths de certains sols Tropicaux et des podzols. International Congress of Soil Science, Transactions 7th (Madison, Wisconsin) 4:425-431.

Rovner, I. 1971. Potential of opal phytoliths for use in paleoecological reconstruction. Quaternary Research 1:343-359.

Rovner, I. 1972. Note on a safer procedure for opal phytolith extraction. Quaternary Research 2(4):591.

Sangster, A. G. 1968. Studies of opaline silica deposits in the leaf of Sieglingia decumbens L. "Bernh.", using the scanning electron microscope. Annals of Botany 32:237-240.

Sangster, A. G., and D. W. Parry. 1969. Some factors in relation to bulliform cell silicification in the grass leaf. Annals of Botany 33:315-323.

Sase, T., and R. Kondo. 1974. The study of opal phytoliths in the humus horizon of buried volcanic ash soils in Hokkaido, Japan. Research Bulletin of the Obihiro University, Series I 8(3):465-483.

Siever, R., and R. A. Scott. 1963. Organic geochemistry of silica, pp. 579-595. In Organic geochemistry, Pergamon Press, New York.

Cont. OPAL PHYTOLITHS

* Smith, R. M., P. C. Twiss, R. K. Krauss, and M. J. Brown. 1970. Dust deposition in relation to site, season, and climatic variables. Soil Science Society of America Proceedings 34(1):112-117.

* Smithson, F. 1956. Silica particles in some British soils. Journal of Soil Science 7:122-129.

Smithson, F. 1958. Grass opal in British soils. Journal of Soil Science 9:148-154.

Soni, S. L., and D. W. Parry. 1973. Electron probe microanalysis of silicon deposition in the inflorescence bracts of the rice plant (Oryza sativa). American Journal of Botany 60(2):111-116.

Sterling, C. 1967. Crystaline silica in plants. American Journal of Botany 54:840-844.

* Twiss, P. C., E. Suess, and R. M. Smith. 1969. Morphological classification of grass phytoliths. Soil Science Society of America Proceedings 33(1):109-115 (phytolith classification in 4 major and 26 minor categories).

Verma, S. D., and R. H. Rust. 1969. Observations on opal phytoliths in a soil biosequence in southeastern Minnesota. Soil Science Society of America Proceedings 33(5):749-751.

Wilding, L. P. 1967. Radiocarbon dating of biogenetic opal. Science 156(3771):66-67.

Wilding, L. P., R. E. Brown, and N. Holowaychuk. 1967. Accessibility and properties of occluded carbon in biogenetic opal. Journal of Soil Science 103(1):56-61.

Wilding, L. P., and L. R. Drees. 1968. Biogenic opal in soils as an index of vegetative history in the Prairie Peninsula, pp. 96-103. In R. E. Bergstrom (Ed.), The Quaternary of Illinois. University of Illinois College of Agriculture Special Publ. No. 14.

Wilding, L. P., and L. R. Drees. 1971. Biogenic opal in Ohio soils. Soil Science Society of America Proceedings 35(6):1004-1010.

Wilding, L. P., and L. R. Drees. 1972. Contribution of biogenic opal to soils and subsequent transformation to crystalline components. International Clay Conference Abstracts, Madrid, Spain, pp. 246-247.

Cont. OPAL PHYTOLITHS

Wilding, L. P., and L. R. Drees. 1973. Scanning electron microscopy of opaque opaline forms isolated from forest soils in Ohio. Soil Science Society of America Proceedings 37(4):647-650.

Wilding, L. P., and L. R. Drees. 1974. Contributions of forest opal and associated crystalline phases to fine silt and clay fractions of soils. Clays and Clay Minerals 22:295-306.

Wilding, L. P., and H. D. Geisner. 1973. Correlative light optical and scanning electron microscopy of minerals: a methodology study. Journal of Sedimentary Petrology 43(1):280-286.

Witty, J. E. 1962. Grass opal in some chestnut and forested soils of Wasco County, Oregon. M.S. Thesis, Oregon State University, Corvallis.

Witty, J. E., and E. G. Knox. 1964. Grass opal in some chestnut and forested soils in north central Oregon. Soil Science Society of America Proceedings 28:685-688.

Yeck, R. D. 1969. Selected characteristics of opaline phytoliths between some Udolls and Ustolls. Ph.D. Thesis, Oklahoma State University, Stillwater.

Yeck, R. D., and F. Gray. 1969. Preliminary studies of opaline phytoliths from selected Oklahoma soils. Proceedings of the Oklahoma Academy of Science for 1967, 48:112-116.

Yeck, R. D., and F. Gray. 1972. Phytolith size characteristics between Udolls and Ustolls. Soil Science Society of America Proceedings 36(4):639-641.

WOOD AND CHARCOAL IDENTIFICATION

Anderson, L. C. 1974. A study of systematic wood anatomy in Cannabis. Botanical Museum Leaflets, Harvard University 24(2):29-36.

Baas, P. 1974. The wood anatomical range in Ilex (Aquifoliaceae) and its ecological and phylogenetic significance. Blumea 21:193-258.

Bailey, I. W. 1944. The comparative anatomy of the Winteraceae. III. Wood. Journal of the Arnold Arboretum 25:97-103.

Bamps, P., and A. Robyns. 1977. Westphalina macrocarpa, new genus, new species, Tiliaceae, from Guatemala. Bull. Jard. Bot. Natl. Belg. 47(1-2):183-190.

Beck, G. F. 1936. Wood determinations. The Mineralogist, Dec. Issue, p. 7-8.

Beck, G. F. 1937. Determining fossil woods. The Mineralogist, October Issue, p. 7-8.

Beck, G. F. 1937. Determination of fossil woods (Part III). The elms. The Mineralogist.

Beck, G. F. 1937. Determination of fossil woods (Part IV). Walnut-hickory-persimmon. The Mineralogist.

Beck, G. F. 1937. Determination of fossil woods (Part V). Beech-sycamore-alder. The Mineralogist, June Issue, p. 7-8.

Beck, G. F. 1938. Determination of fossil woods. The Mineralogist, January Issue, p. 13.

Beck, G. F. 1938. Washington petrified forests. The Mineralogist, July Issue, p. 3-4.

Beck, G. F. 1944. Status of the Tertiary woods of the Western states representing the Juglandaceae. Northwest Science 18:10.

Beck, G. F. 1944. Ancient maples of the central Washington region. Northwest Science 18(4):87-89.

Beck, G. F. 1945. Nyssa woods of the Pacific Northwest Mid-Tertiary. Northwest Science 19(1):11-13.

Beck, G. F. 1945. Tertiary coniferous woods of western North America. Northwest Science 19(3):67-69.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Beck, G. F. 1945. Tertiary coniferous woods of western North America. Northwest Science 19(4):89-102.

* Brazier, J. D., and G. L. Franklin. 1961. Identification of hardwoods, A microscope key. Her Majesty's Stationary Office, London, Ministry of Technology, Forest Products Research Bulletin No. 46 (Excellent Key and illustrations).

Brazier, J. D. 1975. The changing pattern of research in wood anatomy. Journal of Microscopy 104(1):53-64.

Brem, M. 1934. Anatomical method for determining the wood of the spruce and the larch. Bull. Intern. Acad. Polon. Sci. Lettres, Ser. B (1), 8:103-111.

Bridgwater, S. D., and P. Baas. 1978. Wood anatomy of the Punicaceae. IAWA (International Association of Wood Analysts) Bulletin 1:3-6.

Brown, H. P., A. J. Panshin, and C. C. Forsaith. 1949. Textbook of wood technology. Volume 1. Structure, identification, defects and uses of the commercial woods of the United States. McGraw-Hill, New York.

Carlquist, S. 1958. Wood anatomy of Heliantheae (Compositae). Tropical Woods 108:1-30.

Carlquist, S. 1959. Wood anatomy of Helenieae (Compositae). Tropical Woods 111:19-39.

Carlquist, S. 1960. Wood anatomy of Astereae (Compositae). Tropical Woods 113:54-84.

Carlquist, S. 1960. Wood anatomy of Cichorieae (Compositae). Tropical Woods 112:65-91.

* Carlquist, S. 1961. Comparative plant anatomy. Holt, Rinehart and Winston, New York, 146 pp.

Carlquist, S. 1962. A theory of paedomorphosis in dicotyledonous woods. Phytomorphology 12(1):30-45.

Carlquist, S. 1964. Morphology and relationships of Lactoridaceae. Aliso 5(4):421-435.

Carlquist, S. 1965. Wood anatomy of Eupatorieae (Compositae). Aliso 6:89-103.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Carlquist, S. 1966. Wood anatomy of Compositae: a summary, with comments on factors controlling wood evolution. Aliso 6:25-44.

Carlquist, S., and P. H. Raven. 1966. The systematics and anatomy of Gongylocarpus (Onagraceae). American Journal of Botany 53(4):378-390.

Carlquist, S. 1967. Anatomy and systematics of Dendroseris (sensu lato). Brittonia 19(2):99-121.

Carlquist, S. 1969. Wood anatomy of Lobelioideae (Campanulaceae). Biotropica 1(2):47-72.

Carlquist, S. 1969. Wood anatomy of Goodeniaceae and the problem of insular woodiness. Annals of the Missouri Botanical Garden 56:358-390.

Carlquist, S. 1975. Wood anatomy of Onagraceae, with notes on alternative modes of photosynthate movement in dicotyledon woods. Annals of the Missouri Botanical Garden 62(2):386-424.

Carlquist, S. 1975. Ecological strategies of xylem evolution. University of California Press, Berkeley.

Carlquist, S. 1975. Wood anatomy and relationships of the Geissolomataceae. Bulletin of the Torrey Botanical Club 102(3):128-134.

Carlquist, S. 1976. Wood anatomy of Myrothamnus flabellifolia (Myrothamnaceae) and the problem of multiperforate perforation plates. Journal of the Arnold Arboretum 57(1):119-126.

Carlquist, S. 1976. Wood anatomy of Roridulaceae: ecological and phylogenetic implications. American Journal of Botany 63(7)1003-1008.

Carlquist, S. 1976. Wood anatomy of Byblidaceae. Botanical Gazette 137(1):35-38.

Carlquist, S. 1977. Wood anatomy of Tremandraceae, phylogenetic and ecological implications. American Journal of Botany 64(6):704-713.

Carlquist, S. 1977. Ecological factors in wood evolution, a floristic approach. American Journal of Botany 64(7):887-896.

Carlquist, S. 1977. Wood anatomy of Grubbiaceae. Journal of South African Botany 43(2):129-144.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Carlquist, S., and L. Debuhr. 1977. Wood anatomy of Penaeaceae, Myrtales, comparative phylogenetic and ecological implications. Biological Journal of the Linnean Society of London 75(3):211-228.

Carlquist, S. 1978. Wood anatomy and relationships of Bataceae, Gyrostemonaceae, and Stylobasiaceae. Allertonia 1(5):297-330.

Carpenter, C. S., and W. C. Dickison. 1976. The morphology and relationships of Oncotheca balansae. Botanical Gazette 137(2):141-153.

Clarke, S. H. 1938. A multiple-entry perforated-card key with special reference to the identification of hardwoods. New Phytologist 37:369-374.

* Committee on Nomenclature, International Association of Wood Anatomists. 1964. Multilingual glossary of terms used in wood anatomy. Verlagsanstalt Buchdruckerei Kondordia Winterthur.

Copeland, H. F. 1943. A study, anatomical and taxonomic, of the genera of Rhododendroideae. American Midland Naturalist 30:533-625.

Corbin, S. 1920. Woods of Guatemala and Honduras, a study of the gross and microscopic features of a group of sixty-nine woods collected by Dr. H. N. Whitford on a survey of the boundary between these two Central American republics in 1919. Thesis, Yale University.

Côté, W. A., and A. C. Day. 1969. Wood ultrastructure of the southern yellow pines. New York State University College of Forestry at Syracuse, Technical Publ. No. 95:1-70.

Cox, H. T. 1946. The comparative anatomy of the Ericaceae. Ph.D., Department of Botany, University of North Carolina at Chapel Hill.

Cox, H. T. 1948. Studies in the comparative anatomy of the Ericales. I. Ericaceae--subfamily Rhododendroideae. American Midland Naturalist 39:220-245.

Cox, H. T. 1948. Studies in the comparative anatomy of the Ericales. II. Ericaceae--subfamily Arbutoideae. American Midland Naturalist 40:493-516.

Cumbie, B. G. 1960. Anatomical studies in the Leguminosae. Tropical Woods. 113:1-47.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Cumbie, B. G. 1967. Developmental changes in the vascular cambium in Leitneria floridana. American Journal of Botany 54:414-424.

Dale, A. 1968. Comparative wood anatomy of some shrubs native to the northern Rocky Mountains. U.S.D.A. Research Paper INT-45:1-73.

Dayal, R. 1971. Importance of correct interpretation of anatomical structure in the identification of fossil woods with special reference to variability. Proceedings of the Indian National Science Academy, Part B Biological Sciences 37(3):114-123.

Debuhr, L. E. 1977. Wood anatomy of the Saraceniaceae, ecological and evolutionary implications. Plant Systematics and Evolution 128(3-4):159-170.

Dervis-Sokolova, T. G., and A. K. S. Katumba. 1975. The anatomical structure of Salix reticulata as a representative of the subgenus Chamaetia. Byull. Mosk. O-Va. Ispyt. Prir. Otd. Biol. 80(4):126-132.

Dickison, W. C. 1967. Comparative morphological studies in Dilleniaceae. I. Wood anatomy. Journal of Arnold Arboretum 48:1-23.

Dickison, W. C. 1972. Anatomical Studies in the Connaraceae. II. Wood anatomy. Journal of the Elisha Mitchell Scientific Society 88(3):120-136.

Dickison, W. C. 1977. Wood anatomy of Weinmannia (Cunoniaceae). Bulletin of the Torrey Botanical Club 104(1):12-23.

Division of Forest Products. 1951. Selected references to the identification and uses of trees and timbers of the world. Bibliographic Series, Commonwealth Scientific and Industrial Research Organization, Australian Wildlife Research, No. 44.

Esau, K. 1961. Anatomy of seed plants. John Wiley and Sons, New York, 376 pp.

* Esau, K. 1965. Plant anatomy, second edition. John Wiley and Sons, New York, 767 pp.

* Forest Products Research Laboratory. 1953. An atlas of end-grain photomicrographs for the identification of hardwoods. London, Forest Products Research Laboratory Bulletin 26.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Garratt, G. A. 1923. Woods of New Zealand. A study of the secondary wood of ten gymnosperms and eighteen dicotyledons, with keys to the identification of the latter. Thesis, Yale University.

Gibson, A. C. 1977. Wood anatomy of Opuntias with cylindrical to globular stems. Botanical Gazette 138(3):334-351.

Gibson, A. C. 1978. Rayless secondary xylem of Halophytum. Bulletin of the Torrey Botanical Club 105(1):39-44.

Giebel, K. P., and W. C. Dickison. 1976. Wood anatomy of Clethraceae. Journal of the Elisha Mitchell Scientific Society 92(1):17-26.

Gilbertson, R. L., C. D. Leaphart, and F. D. Johnson. 1961. Field identification of roots of conifers in the inland empire. Forest Science 7(4):352-356.

Greguss, P., and I. Varga. 1950. Xylotomischer Bestimmungsschlussel Der Pinus Arten. University of Szeged, Hungary, Botany Institute, 162 pp. (German text dealing with pines of the world).

* Greguss, P. 1955. Identification of living gymnosperms on the basis of xylotomy. Budapest, Akademiai Kiado, 263 pp.

Greguss, P. 1959. Holzanatomie der Europäischen Laubhölzer und Strächer. Budapest, Akademia Kiado, 330 pp. (German text dealing with several North American species).

Greguss, P. 1975. Wood anatomy xylotomy. Acta Agron. Acad. Sci. Hungary 24(1-2):150-167.

Grundwag, M., and E. Werker. 1976. Comparative wood anatomy as an aid to identification of Pistacia spp. Israel Journal of Botany 25(3-4):152-167.

Hamilton, J. R., and R. M. Mathews. 1965. Wood characteristics of planted loblolly and shortleaf pine. Georgia Forestry Research Council, Research Paper 27:1-5.

Harrar, E. S. 1935. The microscopy and identification of 100 commercial timbers of Queensland, Australia. Thesis, New York State University.

Cont. WOOD AND CHARCOAL IDENTIFICATION

* Henderson, F. Y. 1952 (Reprinted 1970). Identification of hardwoods, a lens key, second edition. Her Majesty's Stationary Office, London, Ministry of Technology, Forest Products Research Bulletin No. 25:1-126. (Excellent key and illustrations).

Hua, T. 1930. The microscopic characteristics of Chinese woods. Thesis, University of Washington.

Hudson, R. H. 1958. The value of the fusiform ray in separating the genera Picea and Larix. Journal of the Institute of Wood Science 2.

Hudson, R. H. 1960. The anatomy of the genus Pinus in relation to its classification. Journal of the Institute of Wood Science 6:26-46.

Ifju, G., J. A. Johnson, and J. H. Steele. 1975. Quantitative stereology, a new method for wood identification. Virginia Journal of Science 26(2):64.

International Association of Wood Anatomists. 1957. International glossary of terms used in wood anatomy. Tropical Woods 107:1-36.

* Jane, F. W. 1956. The structure of wood. Adam and Charles Black, London, 427 pp. (Excellent text).

Janssonius, H. H. 1952. Key to the Javanese woods on the basis of anatomical features. E. J. Brill, Leiden, Netherlands, 244 pp.

Kanehira, R. 1926. Anatomical characters and identification of the important woods of the Japanese empire. Government of Formosa, Formosa Bureau of Productive Industry, Taihoku.

Kanehira, R. 1971. Anatomical characters and identification of Formosan wood. Cheng Wen Publishing Company, Taipei.

Keng, H. 1962. Comparative morphological studies in Theaceae. University of California Publications in Botany 33:269-384.

Koehler, A. 1917. Guidebook for the identification of woods used for ties and timbers. U.S.D. A. Forest Service.

Koek-Noorman, J. 1977. Comparative wood anatomy in the Rubiaceae. Berichte der Deutsch Bot. Ges. 90(1-2):183-190 (German).

Kribs, D. A. 1968. Commercial foreign woods on the American market. Dover Publications, New York, 239 pp.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Krukoff, B. A. 1972. American species of Strychnos. Lloydia 35(3):193-271.

Kryn, J. M. 1953. The anatomy of the wood of the Anacardiaceae and its bearing on the phylogeny and relationships of the family. Ph.D. Dissertation, University of Michigan, Ann Arbor.

Kukachaka, B. F. 1942. The systematic anatomy of the woods of the Tiliaceae. Thesis, University of Minnesota, Minneapolis.

Kukachaka, B. F. 1960. Identification of coniferous woods. Tappi 43(11):887-896.

Leisner, R. S. 1958. Morphology and systematic anatomy of Empetraceae. Unpublished Ph.D., Department of Botany, University of North Carolina at Chapel Hill.

Leney, L., and R. W. Casteel. 1975. Simplified procedures for examining charcoal specimens for identification. Journal of Archaeological Science 2(2):153-159.

Maky, J. C. 1932. The identification of wood and wood charcoal fragments. Analyst 57:2-8.

Margolis, R. 1931. Anatomatical description of some woods of the Euphorbiaceae and Rubiaceae. Thesis, Yale University.

Marguerier, J., and P. Woltz. 1977. Comparative anatomy and systematics of the Madagascan Podocarpus. Part 1. Adansonia 17(2):155-192 (French text).

Matten, L. C., R. A. Gastaldo, and M. R. Lee. 1977. Fossil Robinia wood from the western United States. Review of Palaeobotany and Palynology 24:195-208.

McLaughlin, R. P. 1933. Systematic anatomy of the woods of the Magnoliales. Tropical Woods 34:3-39.

Metcalf, C. R., and L. Chalk. 1950. Anatomy of the Dicotyledons. Clarendon Press, Oxford, 2 volumes.

Miller, R. B. 1976. Wood anatomy and identification of species of Juglans. Botanical Gazette 137(4):368-377.

Ming, Y. K. 1948. Systematic anatomy of the woods of the Fagaceae. Thesis, University of Washington.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Minore, D. 1966. Identification of rotten logs in the coastal forests of Oregon and Washington. U.S.D.A. Forest Service, Pacific Northwest Forest and Range Experiment Station, 16 pp.

Mohr, C. 1897. The timber pines of the southern United States together with a discussion of the structure of their wood by Filbert Roth. U.S.D.A., Division of Forestry, Bulletin 13(revised edition):1-176.

Paulssen, L. M. 1964. Identification of active charcoals and wood charcoals. Scandinavian University Books, Trondheim.

* Panshin, A. J., and C. de Zeeuw. 1970. Textbook of wood technology, third edition. Volume 1. Structure, identification, uses, and properties of the commercial woods of the United States and Canada. McGraw-Hill Book Company, New York, 705 pp. (Excellent text, hand-specimen and microscope keys, and illustrations).

Penninton, M. T. 1953. A comparative study of wood anatomy of 54 species of the family Aquifoliaceae. Ph.D. Dissertation, University of Virginia.

* Phillips, E. W. J. 1948. Identification of softwoods. His Majesty's Stationary Office, London, Forest Products Research Bulletin 22:1-56 (Excellent key and illustrations).

Pierce, A. J. 1936. Anatomical relationships of the Taxodiaceae. Tropical Woods 46:1-14.

Pierce, A. J. 1937. Systematic anatomy of the woods of the Cupressaceae. Tropical Woods 49:5-21.

Pocknall, D. T. 1977. Dacrydium, Podocarpaceae, a scanning electron microscope study of the wood of New Zealand species. Mauri Ora 5:59-74.

* Record, S. J. 1934. Identification of the timbers of temperate North America. John Wiley and Sons, New York.

Record, S. J., and M. M. Chattaway. 1939. List of anatomical features used in classifying dicotyledonous woods. Tropical Woods 57:11-16.

Record, S. J. 1942. Keys to American woods. Tropical Woods 72:19-35.

Record, S. J. 1943. Keys to American woods. Tropical Woods 73:23-42.

Cont. WOOD AND CHARCOAL IDENTIFICATION

* Record, S. J., and R. W. 1943. Timbers of the New World. Yale University Press, New Haven.

Reno, J., and B. F. Kukacha. 1950. Wood identification charts. series in wood (U.S.A.) 5.

Richardson, F. 1960. Laboratory techniques in plant anatomy. I. A method of reviving sections of compressed wood from archaeological sites and peat bogs. Royal Botanic Gardens, England, KEW Bulletin 14(1):85-86.

Richardson, F. 1960. Laboratory techniques in plant anatomy. II. A method of examining fossilized or semi-fossilized plant tissues impregnated with calcareous substances. Royal Botanic Gardens, England, KEW Bull. 14(1):87.

Robyns, A., S. Nilsson, and R. Dechamps. 1977. The systematic position of the genus Maxwellia. Bull. Jard. Bot. Natl. Beig. 47(1-2):145-154.

Rodriguez, R. L. 1957. Systematic anatomical studies on Myrrhidendron and other woody Umbellales. University of California, Publications in Botany 29:145-318.

Slyper, E. J. 1933. Key of recent and fossil woods according to microscopic characteristics. Reweil des Travaux Botaniques Neerlandic 30(2-4):482-513 (Italian flora).

Simon, C. F. 1930. Annotated key to the hardwoods of the eastern United States, Part 1. Unpublished M.S. Thesis, Smith College.

Stark, E. W. 1952. Wood anatomy of the Juglandaceae, Betulaceae, Magnoliaceae, and Aceraceae indigenous to the United States. Ph. D. Dissertation, University of North Carolina.

Stern, W. L. 1954. Comparative anatomy of xylem and phylogeny of Lauraceae. Tropical Woods 100:1-72.

Stern, W. L., and G. K. Brizicky. 1958. The woods and flora of the Florida Keys. Goodeniaceae. Tropical Woods 109:38-44.

Strelis, I., and R. W. Kennedy. 1967. Identification of North American commercial pulpwoods and pulp fibres. University of Toronto Press, 117 pp.

Sudo, S. 1968. Anatomical studies on the wood of species of Picea, with some consideration of their geographic distribution and taxonomy. The Government Forestry Experiment Station, Tokyo, Japan, Bulletin 215.

Cont. WOOD AND CHARCOAL IDENTIFICATION

Suess, H., and W. R. Mueller-Stoll. 1977. Studies on fossil plane tree woods, contributions to a monograph on the genus Platanoxylon. Feddes Repert 88(1-2):1-62 (German text).

Tang, Y. 1938. Systematic anatomy of the woods of the Hamamelidaceae. Thesis, Yale University.

Tippo, O. 1938. Comparative anatomy of the Moraceae and their presumed allies. Botanical Gazette 100:1-99.

Vales, M. A., and K. Babos. 1977. Wood anatomy of Ceratopyxis, Rubiaceae, a monotypic endemic genus of West Cuba. Acta Bot. Acad. Sci. Hungary 23(1-2):275-284.

Vander Wyk, R. W., and J. E. Canright. 1956. The anatomy and relationships of the Annonaceae. Tropical Woods 104:1-24.

Wiesehugel, E. G. 1929. The diagnostic characters of the woods of the genus Abies. Thesis, University of Idaho.

Wilson, T. K. 1960. The comparative morphology of the Canellaceae. I. Synopsis of genera and wood anatomy. Tropical Woods 112:1-27.

Young, D. A. 1974. Comparative wood anatomy of Malosma and related genera (Anacardiaceae). Aliso 8(2):133-146 (includes Rhus typhina, R. glabra, R. copallina, R. trilobata, and Cotinus americanus).

Zahur, M. S. 1959. Comparative study of secondary phloem of 423 species of woody dicotyledons belonging to 85 families. Cornell University, Agricultural Experiment Station Memoir 358:1-160.

INTERNAL DISTRIBUTION

1-8. S. I. Auerbach
9. T. J. Blasing
10-29. P. A. Delcourt
30. H. R. Delcourt
31. J. S. Olson
32. A. M. Solomon
33. D. C. West
34. ESD Library
35. Biology Library
36-37. Central Research Library
38-39. Laboratory Records Dept.
40. Laboratory Records, ORNL-RC
41. ORNL Y-12 Technical Library
42. ORNL Patent Office

EXTERNAL DISTRIBUTION

43. Office of Assistant Manager, Energy Research and Development, DOE-ORO
44. David P. Adam, 345 Middlefield, U.S. Geological Survey, Menlo Park, CA 94025
45. Tom Ager, Mail Stop 971, United States Geological Survey, Reston, VA 22092
46. David Asch, Archeological Program, 2000 Sheridan Road, Northwestern University, Evanston, IL 60201
47. Daniel I. Axelrod, Dept. of Botany, University of California, Davis, Davis, CA 95616
48. Robert E. Bailey, Dept. of Biology, Central Michigan University, Mt. Pleasant, MI 48859
49. Richard G. Baker, Dept. of Geology, University of Iowa, Iowa City, IA 52242
50. Jerry M. Baskin, T. H. Morgan School of Biological Sciences, Thomas Hunt Morgan Building, University of Kentucky, Lexington, KY 40506
51. William M. Bass, Dept. of Anthropology, University of Tennessee, Knoxville, TN 37916
52. I. J. Bassett, Biosystematics Research Institute, Research Branch, Wm. Saunders Bldg., Central Experimental Farm, Ottawa, Canada, K1A 0C6
53. Alice J. Belling, Dept. of Biology, New York University, Washington Square, New York, NY 10003
54. William S. Benninghoff, Dept. of Botany, University of Michigan, Ann Arbor, MI 48109
55. Greta Berggren, Swedish Central Governmental Seed Testing Station, Solna, Sweden
56. Chris Bernabo, c/o George Brown, Jr., 2342 Rayburn House Office Bldg., Washington, DC 20515
57. Albert A. Berti, Chevron Standard Limited, Calgary, Alberta T2P 0L7 Canada
58. H. J. B. Birks, The Botany School, University of Cambridge, Cambridge, England

59. V. Bohrer, Dept. of Anthropology, Eastern New Mexico University, Portales, NM 88130
60. J. Platt Bradbury, Mail Stop 919, Paleontology and Stratigraphy Branch, U.S. Geological Survey, Box 25046, Denver Federal Center, Denver, CO 80225
61. Jeffrey P. Brain, Peabody Museum, Harvard University, Cambridge, MA 02138
62-71. Robert C. Bright, Dept. of Ecology and Behavioral Biology, University of Minnesota, Minneapolis, MN 55455
72. David Brose, Interagency Archaeological Services, 1895 Phoenix Blvd., Atlanta, GA 30349
73. Linda Brubaker, College of Forest Resources, University of Washington, Seattle, WA 98195
74. Grace S. Brush, Dept. of Geography and Environmental Engineering, John Hopkins University, Baltimore, MD 21218
75. Vaughn M. Bryant, Jr., Anthropological Research Lab., College of Liberal Arts, Texas A&M, College Station, TX 77843
76. Karl W. Butzer, 5828 S. University Ave., University of Chicago, Chicago, IL 60637
77. James T. Callahan, Associate Program Director, Ecosystems Studies Program, National Science Foundation, Washington, DC 20550
78. Victor A. Carbone, Interagency Archaeological Services, 1895 Phoenix Blvd., Atlanta, GA 30349
79. S. Carlquist, Rancho Santa Ana Botanic Garden, Claremont, CA 91711
80. Jefferson Chapman, Dept. of Anthropology, University of Tennessee, Knoxville, TN 37916
81. G. Michael Clark, Dept. of Geological Sciences, University of Tennessee, Knoxville, TN 37916
82. Andre F. Clewell, Dept. of Biological Science, Florida State University, Florida State University, Tallahassee, FL 32306
83. A. D. Cohen, Dept. of Geology, University of South Carolina, Columbia, SC 29208
84. Kenneth L. Cole, Laboratory of Paleoenvironmental Studies, University of Arizona, Tucson, AZ 85721
85. Paul A. Colinvaux, Academic Faculty of Zoology, Biological Sciences Bldg., 484 West 12th Ave., Columbus, OH 43210
86. William J. Coppoc, Texaco, Inc., P.O. Box 509, Beacon, NY 12508
87. Wes Cowen, Ethnobotanical Lab, Museum of Anthropology, University of Michigan, Ann Arbor, MI 48104
88. Edward J. Cushing, Dept. of Ecology and Behavioral Biology, University of Minnesota, Minneapolis, MN 55455
89. R. Daubenmire, Dept. of Botany, Washington State University, Pullman, WA 99164
90. Margaret B. Davis, Dept. of Ecology and Behavioral Biology, University of Minnesota, Minneapolis, MN 55455
99-100. Owen K. Davis, Dept. of Ecology and Behavioral Biology, University of Minnesota, Minneapolis, MN 55455
101. Ronald B. Davis, Institute for Quaternary Studies, University of Maine at Orono, Orono, ME 04473

102. Stanley N. Davis, Head, Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ 85721
103. Edward S. Deevey, Florida State Museum, University of Florida, Gainesville, FL 32601
104. Richard J. Delorit, Dept. of Agronomy, Wisconsin State University at River Falls, River Falls, WI 54022
105. Hal R. DeSelm, Graduate Program in Ecology, University of Tennessee, Knoxville, TN 37916
106. C. A. Dickson, Subdepartment of Quaternary Research, The Botany School, University of Cambridge, Cambridge, England
107. J. H. Dickson, The Botany Department, The University, Glasgow, Scotland
108. David L. Dilcher, Dept. of Plant Sciences, Indiana University, Bloomington, IN 47401
109. A. Dreimanis, Dept. of Geology, University of Western Ontario, London, Ontario, Canada
110. Wilbur Duncan, Botany Dept., University of Georgia, Athens, GA 30602
111. David Dye, Dept. of Anthropology, Washington University, St. Louis, MO 63130
112. William C. Elsik, Exxon Company, U.S.A., P.O. Box 2189, Houston, TX 77001
113. Donald W. Engelhardt, Amoco Production Company, Security Life Insurance Bldg., Denver, CO 80202
114. A. Murray Evans, Dept. of Botany, Hesler Biology Bldg., University of Tennessee, Knoxville, TN 37916
115. Nancy Eyster-Smith, Limnological Research Center, University of Minnesota, Minneapolis, MN 55455
116. Knut Faegri, Botanisk Museum, University of Bergen, N-5014 Bergen, Norway
117. Charles Faulkner, Ethnobotany Lab, Dept. of Anthropology, University of Tennessee, Knoxville, TN 37916
118. William W. Fitzhugh, Anthropology, Smithsonian Institute, Washington, DC 20560
119. Richard I. Ford, Ethnobotanical Lab., University of Michigan, Ann Arbor, MI 48104
120. Bent Fredskild, Botanical Museum, University of Copenhagen, Gothersgade 130, DK-1123, Copenhagen K, Denmark
121. David G. Frey, Dept. of Zoology, Indiana University, Bloomington, IN 47401
122. Harold C. Fritts, Tree-Ring Lab, University of Arizona, Tucson, AZ 85721
123. E. E. Gaertner, Dept. of Biology, Concordia University, 1455 De Maisonneuve Blvd. W., Montreal, Quebec H3G 1M8, Canada
124. Konrad Gajewski, Center for Climatic Research, University of Wisconsin, Madison, WI 53706
125. Robert M. Garrels, Department of Geological Sciences, Northwestern University, Evanston, IL 60201
126. Paul H. Glaser, Dept. of Ecology and Behavioral Sciences, University of Minnesota, Minneapolis, MN 55455
127. Sir Harry Godwin, The Botany School, University of Cambridge, Cambridge, England

128. Alan Graham, Dept. of Biological Sciences, Kent State University, Kent, OH 44240
129. Charles R. Gunn, Agricultural Research Service, Northeastern Regional Administration Office, Agricultural Research Center, USDA, Beltsville, MD 20705
130. Steve A. Hall, Dept. of Geography, North Texas State University, Denton, TX 76203
131. R. M. Hansen, Range Science, Colorado State University, Fort Collins, CO 80523
132. Robert Haynes, Dept. of Biology, Box 1927, University, AL 35486
133. Vance Haynes, Dept. of Anthropology, University of Arizona, Tucson, AZ 85721
134. F. J. Hermann, Dept. of Botany, University of Wisconsin, Madison, WI 53706
135. Walter Herndon, Vice Chancellor of Academic Affairs, 517 Andy Holt Tower, University of Tennessee, Knoxville, TN 37916
136. Calvin J. Heusser, Dept. of Biology, New York University, Box 608, Tuxedo, New York 10987
137. L. V. Hills, Dept. of Geology, University of Calgary, Calgary, Alberta, Canada
138. Raymond W. Holton, Dept. of Botany, 303 Hesler Biology Bldg., University of Tennessee, Knoxville, TN 37916
139. Stephen T. Jackson, Dept. of Biology, 138 Jordan Hall, Indiana University, Bloomington, IN 47401
140. George Jacobson, Institute for Quaternary Studies, University of Maine at Orono, Orono, ME 04473
141. C. R. Janssen, Botanical Museum and Herbarium, State University, Utrecht, Netherlands
142. Marvin D. Jeter, Arkansas Archaeological Survey, Box 3087, U.A.M., Monticello, AR 71655
143. Samuel B. Jones, Jr., Botany Dept., University of Georgia, Athens, GA 30602
144. Ronald O. Kapp, Alma College, Alma, MI 48801
145. S. V. Katz, Festivalnaya Ulitsa 7, kv. 29, 125195 Moscow, USSR
146. N. Ya. Katz, Festivalnaya Ulitsa 7, kv. 29, 125195 Moscow, USSR
147. W. R. Kelley, Biology Dept., Shippensburg State College, Shippensburg, PA 17257
148. Jim King, Illinois State Museum, Springfield, IL 62706
149. John King, Limnological Research Center, Dept. of Geology, University of Minnesota, Minneapolis, MN 55455
150. Walter E. Klippel, Dept. of Anthropology, University of Tennessee, Knoxville, TN 37916
151. T. Kowal, Pharmaceutical Botany, Medical High School, Wroclaw, Poland, Europe
152. V. C. LaMarche, Jr., Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ 85721
153. Henry Lamb, The Botany School, University of Cambridge, Cambridge CB2 1RZ, England
154. Robert G. Landen, Dean, College of Liberal Arts, 226 Ayres Hall, University of Tennessee, Knoxville, TN 37916
155. J. Larry Landers, Institute of Natural Resources, University of Georgia, Athens, GA 30602

156. E. Landolt, Eldg. Technische Hochschule Zurich, Geobotanisches Institut, Stiftung Rubel, Zurichbergstrasse 38, CH-8044 Zurich, Switzerland
157. George H. Lauff, Director, W. K. Kllogg Biological Station, Michigan State University, Hickory Corners, MI 49060
158. Estella B. Leopold, Quaternary Research Center, University of Washington, Seattle, WA 98195
159. Simon A. Levin, Section of Ecology and Systematics, Bldg. No. 6, Langmuir Laboratory, Ithaca, NY 14850
160. Sigrid Lichti-Federovich, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada
161. Helmut Lieth, Fachgebiet Biologie, Fachbereich 5, Universitat Osnabruck, Postfach 4469, D-4500 Osnabruck, West Germany
162. Meredith Lieux, Dept. of Botany, Louisiana State University, Baton Rouge, LA 70803
163. Elbert L. Little, Jr., Timber Management Research, Forest Service, USDA, Washington, DC 20250
164. D. A. Livingstone, Dept. of Zoology, Duke University, Durham, NC 27706
165. John J. Magnuson, Laboratory of Limnology, The University of Wisconsin, Madison, WI 53706
166. John McAndrews, Royal Ontario Museum, 100 Queens Park, Toronto, Ontario M5S 2C6, Canada
167. J. Frank McCormick, Graduate Program in Ecology, University of Tennessee, Knoxville, TN 37916
168. Robert E. McLaughlin, Dept. of Geological Sciences, 212 Geology and Geography Bldg., University of Tennessee, Knoxville, TN 37916
169. L. J. Maher, Jr., Dept. of Geology and Geophysics, 1215 W. Dayton St., University of Wisconsin, Madison, WI 53706
170. Vera Markgraf, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721
171. Paul S. Martin, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721
172. J. V. Matthews, Jr., Energy, Mines and Resources Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada
173. P. J. Mehringer, Jr., Laboratory of Anthropology, Washington State University, Pullman, WA 99163
174. Larry Mellichamp, Dept. of Botany, University of North Carolina at Charlotte, Charlotte, NC 28205
175. F. Mergen, Yale University School of Forestry and Environmental Studies, 370 Prospect St., New Haven, CT 06511
176. T. R. Mertens, Dept. of Biology, Ball State University, Muncie, IN 47306
177. N. G. Miller, The Gray Herbarium, Harvard University, 22 Divinity Ave., Cambridge, MA 02138
178. R. H. Miller, Fruit Lab, Agricultural Research Center, Northeastern Regional Administration Office, Agricultural Research Service, U.S. Dept. of Agriculture, Beltsville, MD 20705
179. Dagfinn Moe, Botanical Museum, University of Bergen, P.O. Box 12, N-5014 Bergen, Norway

180. Judy Monte, Dept. of Geography, University of South Carolina, Columbia, SC 29208
181. F. H. Montgomery, Dept. of Botany and Genetics, University of Guelph, Guelph, Ontario, Canada
182. Alan V. Morgan, Dept. of Earth Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada
183. Dan F. Morse, Arkansas Archeological Survey, Drawer 820, State University, AR 72467
184. R. J. Mott, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada
185. Harvey Nichols, Institute of Arctic and Alpine Research, University of Colorado, Boulder, CO 80302
186. E. C. Ogden, The State Education Department, University of the State of New York, Albany, NY 12234
187. J. Gordon Ogden, Dept. of Biology, Dalhousie University, Halifax, Nova Scotia, Canada
188. Paul W. Parmalee, Dept. of Anthropology, University of Tennessee, Knoxville, TN 37916
189. Kenneth L. Petersen, Dept. of Anthropology, Washington State University, Pullman, WA 99164
190. Gilbert Peterson, Center for Climatic Research, University of Wisconsin, 1225 West Dayton St., Madison, WI 53706
191. Arthur M. Phillips, Museum of Northern Arizona, Flagstaff, AZ 86001
192. J. Dan Pittillo, Dept. of Biology, Western Carolina University, Cullowhee, NC 28723
193. Stephen C. Porter, Quaternary Research Center, University of Washington, Seattle, WA 98195
194. Jack E. Reese, Chancellor, 539 Andy Holt Tower, University of Tennessee, Knoxville, TN 37916
195. A. A. Reznicek, Erindale College, University of Toronto, Mississauga, Ontario L5L 1C6, Canada
196. Pierre Richard, Departement de Geographie, Universite de Montreal, Case postale 6128, Succursale "A", Montreal, P.Q., H3C 3J7, Quebec, Canada
197. Jonathon L. Richardson, Biology Dept., Franklin and Marshal College, Lancaster, PA 17604
198. J. C. Ritchie, Scarborough College, 1265 Military Trail, West Hill, Ontario M1C 1A4, Canada
199. Irwin Rovner, Archeological Program, Northwestern University, Evanston, IL 60201
200. James Schoenwetter, Palynology Laboratory, Dept. of Anthropology, Arizona State University, Tempe, AZ 85281
201. C. S. Schopmeyer, Division of Timber Management Reseach, Forest Service, U.S. Dept. of Agriculture, Washington, DC 20250
202. Gerald F. Schroedl, Dept. of Anthropology, 252 South Stadium, University of Tennessee, Knoxville, TN 37916
203. Charles E. Schweger, Dept. of Anthropology, University of Alberta, Edmonton, Alberta T2G 2E3, Canada
204. Linda Shane, Limnological Research Center, Dept. of Geology, University of Minnesota, Minneapolis, MN 55455

205. A. J. Sharp, Dept. of Botany, Hesler Biology Bldg., University of Tennessee, Knoxville, TN 37916
206. C. T. Shay, Anthropology Lab, 101 Education Bldg., University of Manitoba, Winnipeg, Manitoba, Canada
207. Elisabeth Sheldon, Dept. of Sociology, Auburn University, Auburn, AL 36830
208. Les Sirkin, Dept. of Earth Sciences, Adelphi University, Garden City, NY 11530
209. Bruce D. Smith, Dept. of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560
210. William Spackman, Coal Research Section, Deike Bldg., Pennsylvania State University, University Park, PA 16802
211. W. Geoffrey Spaulding, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721
212. Ray W. Spear, Dept. of Ecology and Behavioral Biology, University of Minnesota, Minneapolis, MN 55455
213. A. E. Squillace, Naval Stores and Timber Production Lab, Southeastern Forest Experiment Station, P.O. Box 70, Forest Service, USDA, Olustee, FL 32072
214. Rod Squires, Dept. of Geography, University of Minnesota, Minneapolis, MN 55455
215. A. Srodon, 31-512 Krakow, Lubicz 46, Poland, Europe
216. Ronald L. Stuckey, Dept. of Botany, Ohio State University, 1735 Neil Ave., Columbus, OH 43210
217. Albert M. Swain, Center for Climatic Research, Institute for Climatic Research, Institute for Environmental Studies, University of Wisconsin, Madison, WI 53706
218. J. Terasmae, Dept. of Geological Sciences, Brock University, St. Catharines, Ontario L25 3A1, Canada
219. T. Van der Hammen, Hugo de Vries Lab, Universiteit van Amsterdam, Sarphatistraat 221, Amsterdam 4, The Netherlands, Europe
220. Tom Van Devender, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721
221. B. Van Geel, Hugo de Vries Laboratorium, Universteit van Amsterdam, Afdeling Palynologie, Sarphatistraat 221, Amsterdam 4, The Netherlands
222. Kent Van Zant, Dept. of Geology, Beloit College, Beloit, WI 53511
223. Jean-Serge Vincent, 401 Lebreton St., Geological Survey of Canada, Ottawa, Ontario K1A 0E8, Canada
224. Irmeli Vuorela, Dept. of Geology, University of Helsinki, Snellmaninkatu 5, SF-00170 Helsinki 17, Finland
225. Jean Waddington, Dept. of Geography, University of Minnesota, Minneapolis, MN 55455
226. Ken Walker, Dept. of Geological Sciences, University of Tennessee, Knoxville, TN 37916
227. Patricia L. Walne, Dept. of Botany, Hesler Biology Bldg., University of Tennessee, Knoxville, TN 37916
228. Richard H. Waring, Department of Forest Science, Oregon State University, Corvallis, Oregon 97331
229. Patty Jo Watson, Dept. of Anthropology, Washington University, St. Louis, MO 63130

230. William A. Watts, School of Botany, Trinity College, Dublin, Ireland, Europe
231. Thompson Webb III, Dept. of Geological Sciences, Brown University, Providence, RI 02912
232. Frieda Weertman, 27850 Woodside Road, Excelsior, MN 55331
233. Phillip V. Wells, Dept. of Ecology, University of Kansas, Lawrence, KS 66045
234. Donald Whitehead, Dept. of Biological Sciences, Indiana University, Bloomington, IN 47401
235. Melbourne C. Whiteside, Dept. of Zoology, 510 Hesler Biology Bldg., University of Tennessee, Knoxville, TN 37916
236. T. A. Wijmstra, Hugo de Vries Laboratorium, Universitiet van Amsterdam, Afdeling Palynologie, Sarphatistraat 221, Amsterdam 4, The Netherlands
237. Stephen Williams, Peabody Museum, Harvard University, Cambridge, MA 02138
238. Jack L. Wolfe, Branch of Paleontology and Stratigraphy, U.S. Geological Survey, 345 Middlefield Road, Menlo Park, CA 94025
239. Herbert E. Wright, Jr., Limnological Research Center, Dept. of Geology, University of Minnesota, Minneapolis, MN 55455
240. Dr. Richard Yarnell, Dept. of Anthropology, University of North Carolina, Chapel Hill, NC 27514

241-267. Technical Information Center, Oak Ridge, TN 37830