

CURRICULUM VITAE

EDUCATION

- 1951 Methodist School, Sekondi
1954 Achimota Secondary School
1961 B.A. in Liberal Arts, Miami University, Ohio
1963 M.Sc. in Biological Sciences, George Washington University
1966 PhD in Botany, University of London
1967 Post Grad in Botanical Histochemistry, University of California, Berkeley

POSITIONS HELD

- 1966 - 1969 Association Curator, Department of Botany, Smithsonian Institution
1967 Scientist-in-Charge, Smithsonian Biological Survey, Dominica
1969 - 1970 Lecturer, Advanced Seminar for Tropical Botany, NSF-sponsored at University of Miami and Fairchild Tropical Garden
1970 - 1985 Curator, Department of Botany, Smithsonian Institution
1969 - 1971 Executive Director, Association for Tropical Biology, Inc.
1970 - 1976 Chairman, Department of Botany, Smithsonian Institution
1978 - 1980 Director, Endangered Species Program, Smithsonian Institution
1976 - 1985 Secretary-General, International Union of Biological Sciences (IUBS)
1977 - 1979 President, Association for Tropical Biology, Inc.
1978 - 1983 Director, Office of Biological Conservation, Smithsonian Institution
1984 - 1985 Senior Scientist, Smithsonian Institution
1985 - President, Edward S. Ayensu Associates Ltd
1987 - 1990 Chairman, Congress Committee, Pan African Union for Science and Technology
1988 - 1990 Senior Advisor to the President on Strategic Planning and Policy Development, African Development Bank
1989 - 1990 Director, Central Projects Department, African Development Bank
1990 - President, Pan African Union for Science and Technology
1991 - 1997 Vice-Chairman, Scientific and Technical Advisory Panel, Global Environment Facility (G.E.F.)
1998 - 2003 Chairman and Member, World Bank Inspection Panel
2001 - 2010 Chairman, Council for Scientific and Industrial Research (CSIR)
2005 - 2009 Chairman, Haber Mining Ghana Limited
2007 - 2009 Chairman, Sustainable Forestry Management Ghana Limited
2009 - Chairman, Africa Practice, Ghana
2012 - 2013 Vice President, Energy Globe Foundation
2012 - Chairman, African Institute of Mathematical Sciences (AIMS) Ghana
2013 - President, Energy Globe Foundation

HONOURS

- Fellow of the Ghana Academy of Arts and Sciences
Foreign Fellow of the Indian National Science Academy
Fellow of the Linnean Society of London
Who's Who in Ecology
Who's Who in Government
Dictionary of International Biography
United States National Museum of Natural History (Smithsonian) Award
Fellow of the Washington Academy of Sciences

Visiting Fellow at Wolfson College of Oxford University
Who's Who in the World
Who's Who in America
African's Who's Who and Men of Achievement
Ghana National Book Award 1984
Ghana Science Association Deserving Scientist Award 1985
Fellow of the Third World Academy of Sciences
Founding Fellow of the African Academy of Sciences
Recipient of the Outstanding Statesman Award in Ghana during the Millennium celebrations
2004 Third World Academy of Sciences Medal for the Biological Sciences.

PROFESSIONAL ORGANISATIONS

Ghana Academy of Arts and Sciences
Botanical Society of America
International Association for Plant Taxonomy
Ghana Science Association
Western African Science Association
Association for Tropical Biology, Inc.
International Society of Tropical Ecology
Botanical Society of Washington
American Institute of Biological Sciences
Washington Biological Society
International Society for Tropical Root Crops
American Orchid Society
Societe de Biogeographia
Cosmos Club
American Association for the Advancement of Science
Society for Economic Botany
International Association of Wood Anatomists
Association for the Advancement of Agricultural Sciences in Africa
New York Academy of Sciences

TRAVEL

He has travelled extensively the world over for field research in the biological sciences and workshops, meetings and conferences on environment and development; and as a consultant on science and technology for development especially in agro-industries, energy and mining in developing countries and the promotion of private sector initiatives in Africa.

RESEARCH INTERESTS

Tropical biology and ecology, economic botany, comparative anatomy and phylogeny of flowering plants, especially on yams; behaviour of fruit-eating bats, nature photography, science administration, science and technology consultancy in developing countries; biomedical research of medicinal plants; endangered and threatened plant and animal species, environmental assessments for large infrastructural works; development of low carbon growth plans; development of biomass plantations for bio energy; and retroviruses especially HIV.

APPOINTMENTS

Advisory Panel for Systematic Biology, National Science Foundation
Board of Trustees, Inter-Future, New York City

Board of Science and Technology for International Development (BOSTID), U.S. National Academy of Sciences (NAS)

U.S. Committee, International Union of Biological Sciences (IUBS)

Serves on Panels at the U.S. National Academy of Sciences and the State Department on science policy in developing countries

Visiting Professor, University of Ghana

Adjunct Professor, Union Graduate School, Antioch College

External Examiner, University of Cape Coast, University of Maryland and George Washington University

Co-Chairman, Panel on Tropical Economic Plants, National Research Council / NAS

Member, Panel on Sri Lanka Natural Products Development, NAS

Honorary Consultant and Member of Research Committee of the Natural History Museum, University of Ife, Nigeria

Honorary Consultant and Associate Research Fellow, Ghana Institute of Clinical Genetics

Member, Scientific Advisory Committee, Pacific Tropical Botanical Garden, Hawaii

Member, U.S. Delegation to the XIX General Assembly of IUBS, Bangalore, India

Member, U.S. Delegation to the Special Working Session of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Geneva, Switzerland

Rapporteur, Advisory Committee for the General Information Programme, UNESCO

Chairman, International Council for Scientific Unions (ICSU) Committee on Biological Sciences and Agriculture

Board of Trustees, Kwame Nkrumah Memorial Lectures Fund and University of Cape Coast Endowment Fund

Member, UNESCO General Information Programme UNISIST II Conference Programme Committee

Vice-President and Member, International Council for Development of Underutilized Plants, The Asia Foundation

Chairman, Ghana Government Committee to Review the Research Function of the Council for Scientific and Industrial Research

Member, Ethnobotany Specialist Group, Species Survival Commission

Member of SSC Botanical Inventory of Tropical Rainforest Task Force

Vice-Chairman, Advisory Committee on the Sahel (ACOS), Sahel Regional Aid Planning and Coordination, BOSTID/NAS

Consultant to the International Finance Corporation (IFC, World Bank, on agro-industries in developing countries

Chairman, Panel on Firewood Crops: Shrub and Tree Species for Energy Production, BOSTID/NAS

Member, International Commission on the Long-Term Perspectives of the Onchocerciasis Control Programme in West Africa

Member, Harvard University's Arnold Arboretum Visiting Committee

Vice-Chairman, ICSU's Inter-Union Commission on the Application of Science to Agriculture, Forestry and Aquaculture

Member, Conservation Committee, American Orchid Society

Smithsonian Commissioner, International Convention Advisory Commission

Smithsonian Commissioner, Species Survival Commission

Chairman, African Biosciences Network of the International Biosciences Networks (UNESCO-ICSU)

Member, Administrative Council, Centre Mondial-Informatique et Ressources Humaine (CM-IRH)

Advisor to the President on Third World Relations, CM-IRH

Senior Advisor to the Rector of United Nations University

Member, Scientific Advisory Council, World Wildlife Fund - U.S.

Councillor, World Council for the Biosphere - International Society for Environmental Education

University of Ghana Distinguished Professor

Scientific Advisor, Curious Research Corporation

Senior Advisor, World Commission on Environment and Development
Senior Executive Advisor, Capital Profima
Expert Advisor to the Inter-Action Council on Environment, Population and Development
Member, Program Review Board - USA for Africa
Chairman, Congress Committee, Pan-African Union for Science and Technology
Senior Advisor to the President of the African Development Bank
Member, World Bank and UNDP Commission on Energy Sector Management Assistance Programme (ESMAP)
Special Advisor, United Nations Conference on Environment and Development (UNCED)
Vice-Chairman, Scientific and Technical Advisory Panel of the Global Environment Facility (GEF)
President, Energy Globe Foundation (EGF)
Key Advisor to CEO of AngloAmerican
Advisor to Presidents and State Governments

PUBLISHED BOOKS

Anatomy of the Monocotyledons. VI. Dioscoreales (Yams)
Claredon Press, Oxford 1972
Tropical Forest Ecosystems in Africa and South America: A Comparative Review
(editor with B.J. Meggers and W.D. Duckworth); 1973
Commercial Timbers in West Africa.
Smithsonian Contributions to Botany No. 14 (with Albert Bentum); 1974
Leaf Anatomy and Systematics of New World Velloziaceae
Smithsonian Contributions to Botany No.15; 1974
Revision of American Velloziaceae
Smithsonian Contributions to Botany No.30 (with L.B. Smith); 1976
Endangered and Threatened Plants of the United States.
Smithsonian Institution and World Wildlife Fund, US Publication (editor with R.A. DeFilipps);
1978
Medicinal Plants of West Africa
Reference Publications, Inc., Algonac, Michigan; 1978
Jungles: An Exploration of the Most Mysterious of all Natural Worlds.
editor: Jonathan Cape Limited, London, and Crown Publications, New York; 1980
Medicinal Plants of the West Indies
Reference Publications, Inc., Algonac, Michigan; 1981
The State of Biology in Africa
(with Marton-Lefevre) ICSU and UNESCO Publication; 1981
The Rhythms of Life
(with P.Whitfield) Crown Publishers, New York; Marshall Editions Ltd., London; 1982
The Timetable of Technology
(editor with M. Marshall and P. Whitfield) Hearst Books, New York; 1982 (introduction)
Medicinal Plants of China.
(with James Duke) Reference Publications Inc., Algonac, Michigan 1985
Our Green and Living World: The Wisdom to Save
(with V. Heywood, G. Lucas and DeFilipps)
Smithsonian Institution Press and Cambridge University Press, 1984
Striga: Biology and Control
(editor with Dogget, Keynes, Marton-Lefevre, Musselman and Parker)
ICSU Press and IDRC, 1984
Anatomy of the Monocotyledons. IX. Orchidaceae (Orchids).
Claredon Press, Oxford; (manuscript)
Ashanti Gold (The African Legacy Of The World's Most Precious Metal)

Published by Marshall Editions 1997
 Towards a Comprehensive Intellectual Property Development Framework (with C. Vasconcelos and G Whatley), WIPO 2000
 Knowledge Protects- HIV/AIDS, (with Prof. Repke), J. Strauss Verlag Gmb H, Postdam, Germany (Foreword, Kofi Annan) 2001
 Intellectual Property Rights and Public Health Policy, CSIR-INSTI Publication, 2005
 Science, Technology and Society, CSIR Publication, 2006
 Perspectives on Sustainable Development, CSIR Publication, 2007
 Bank of Ghana: Commemoration of the Golden Jubilee, Bank of Ghana Publication, 2007
 The Accra Agenda – Central Banking and the Millennium Development Goals. Edited with Franklyn Ayensu and Yao Abalo, Bank of Ghana Publication, 2009
 Lake of Life - Celebrating 50 Years of Volta River Authority, VRA Publication, 2013
 Field Guide to the Volta River Basin, VRA Publication, 2013

OTHER WORKS

- 1964 Systematic Anatomy and Ontogeny of the Stem in Passifloraceae. *Contr. U.S. Nat. Herb.* 34(3): 45-72 (with W.L. Stern)
 The identity of the genus *Calyptosepalum* S. Moore. *Brittonia* 16(2): 220-227 (with A.C. Smith)
- 1965 Notes on the Anatomy of the Dioscoreaceae. *Ghana Jour. Sci.* 5(1): 19-23
- 1966 Taxonomic Status of *Trichopus*: Anatomical Evidence. *Jour. Linn. Soc. (Bot.)* 59(380): 425-430
- 1967 Aerosol OT Solution: An Effective Softener of Herbarium Specimens for Anatomical Study. *Stain Tech.* 42(3): 155-156
 The Significance of Sclerenchyma Distribution in the Taxonomy of Velloziaceae. *Amer. J. Bot.* 55(4): 659 (Abstr.)
- 1968 Ecosystem Studies in Ghana. *Assoc. Trop. Biol. Newsletter No.* 9:3-6
 Anatomy of *Barbaceniopsis*: A New Genus Recently Described in the Velloziaceae. *Amer. J. Bot.* 55(4): 399-405
 Morphology and Anatomy of *Croomia pauciflora* (Stemonaceae). *J. Arnold Arb.* 49(2): 260-275 (with P.B. Tomlinson)
 Comparative Vegetative Anatomy of the Stemonaceae (Roxburghiaceae) *Bot Gaz.* 129(2): 160-165
 Plant Life in West Africa By G.W. Lawson. Oxford University Press, England. *ATB Newsletter No. 9* (book review)
 Morphogenesis in Plants: A Contemporary Study. By C.W. Wardlaw. Methuen & Co., Ltd, London. *Plant Science Bulletin Vol.14* (book review)
- 1969 Notes on the Vegetative Morphology and Anatomy of *Petermanniaceae*. *Bot. J. Linn Soc.* 62: 17-26 (with P.B. Tomlinson)
 Some Aspects of the Complex Nodal Anatomy of the Dioscoreaceae. *J. Arnold Arb.* 50(1): 124-132
 Leaf Anatomy and Systematics of Old World Velloziaceae. *Kew Bull* 23(2): 315-335
 The Identity of *Vellozia uaipanensis* (Maguire) L.B. Smith: Anatomical Evidence. *Mem. N.Y. Bot. Gard.* 18(2): 291-298
 Optical Shuttle Analysis of the Complex Vascularity in the Dioscoreaceae. XI. International Botanical Congress. Seattle, Washington, Aug. 24 - Sept. 2 p.6
- 1970 Analysis of the Complex Vascularity in Stems of *Dioscoreae Composita* *J. Arnold Arb.* 51(2) 228-240
 Comparative Anatomy of *Dioscorea rotundata* and *Dioscorea cayenensis* pp 127-136. IN: Robson, N.K.B., D.F. Cutler, and M. Gregory, ed., *New Research in Plant Anatomy. Supple., Bot. J. Linn. Soc. Vol. 63.* Academic Press.

- 1971 Agricultural Research and Extension in Ghana. Panel on Agricultural Research and Extension in Ghana. U.S. National Academy of Sciences, pp. 1-17
- 1972 Morphology and Anatomy of *Synsepalum dulcificum* (Sapotaceae) (Miracleberry). *Bot. J. Linn. Soc.* 65(2): 179-187.
 The Need for Training in Technological Management in Developing Countries: Ghana, A Case in Point. *J. Wash. Acad. Sci.* 62(1): pp.
 Leaf Anatomy of *Palumbina* and *Odontoglossum* Subgenus *Osmoglossum*. *Am. Orchid Soc. Bull.* 41(8): 687-696 (with N.H. Williams)
 Guinea Yams: The Botany, Ethnobotany, Use and Possible Future of Yams in West Africa. *Econ. Bot.* 26(4): 301-318 (with D.G. Coursey).
 Studies on Pollen Morphology in the Velloziaceae. *Proc. Biol. Soc. Wash.* 85(40): 469-480.
 Comments on Old and New World Dioscoreas of Commercial Importance. *Publication Esp.8, Inst. Nac. de Investigaciones Forest Mexico*, 1-7.
- 1973 Phytogeography and Evolution of the Velloziaceae. pp 105-119. IN: Meggers, B., E.S. Ayensu, and W.D. Duckworth, ed. *Comparative Evolution of Tropical Forest Ecosystems in Africa and South America*. Smithsonian Press: Washington, D.C.
 The Religious, "Stupendous Passionflowers". *Smithsonian* (March) : Vol. 3 no. 1256-61.
 Biological and Morphological Aspects of the Velloziaceae. *Biotropica* 4(3): 135-149.
- 1974 Classification of the Old World Velloziaceae. *Kew Bull.* 29(1): pp.
 Flora of West Tropical Africa. 2nd Revised Edition by R.W.J. Keay and S.F.N. Hepper. Crown Agents: London. *Kew Bull.* 29(1): 243-244 (Review).
 Beautiful Gamblers of the Biosphere. *Natural History* October: Vol. no. 37-45.
 Plant and Bat Interactions in West Africa. *Ann. Mo. Bot. Gard.* 61(3): 702-727.
 The Last of the Nuba. By Leni Riefenstahl. Harper & Row: New York. *Smithsonian* (November) Vol. no. pp. (Review).
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- 1975 The Nation's First Census of Endangered Plants Finds One-Tenth may be Marked for Extinction. *Smithsonian* (January): Vol. no. 92-96. (With Dale W. Jenkins).
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 Endangered and Threatened Orchids of the United States. *Am. Orchid Soc. Bull.* 44(5): 384-394.
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 Velloziacias do Estado do Parana. *Boletim do Museu Bot. Municipal* No. 21:1-5 (With L.B. Smith).
- 1976 Threatened or Endangered Plants of Sri Lanka, pp 45-46. IN: *Natural Products for Sri Lanka's Future*. Report of a Workshop 2-6 June 1975. National Science Council, Colombo.
 Water Lilies: They Delight Senses the World Over. *Smithsonian* 7(2): 50-55.
 International Cooperation Among Conservation-Oriented Botanical Gardens and Institutions. pp 259-269. IN. *Conservation of Threatened Plants*. Plenum Publishing Corp., New York.
 Alternatives for Biological Resources in Africa. *J. Wash. Acad. Sci.* 66(4): 197-205.
 Botany of the Black Americans. By William Ed. Grime. Scholarly Press, Inc., Michigan (preface).
- 1977 Understanding Life. p. 120-127. IN: *The Smithsonian Experience*. Smithsonian Exposition Books, Washington, D.C.
 Eucalyptus Bark. *Natural History* 86:36-39.

- Scanning Electron Microscopy of Epidermal Features in *Erythrina* (Fabaceae). *Lloydia* 40(5): 436-453.
- 1978 The Beginnings of Agricultural. pp 50-57. IN: The Smithsonian Book of Invention. Smithsonian Exposition Books, Washington D.C.
 The Farm Goes Industrial. pp. 160-167. IN: The Smithsonian Book of Invention. Smithsonian Exposition Books Washington, D.C.
 The U.S. Red Data Book. *Garden* 2 (5): 2-3.
 Conserving the African Environment. *African Report* 23(3): 14
 Calling the Roll of the World's Vanishing Plants. *Smithsonian* 9(8):
 The Role of Science and Technology in the Economic Development of Ghana. pp.288-340. In Beranek, W., & G. Ranis, ed. *Science and Economic Development: A Historical and Comparative Study*. Praeger Publ., New York.
- 1979 Velloziaceae Brasiliae - 1. *Bradea* 11 (49): 326 -328 (With L.B. Smith).
 Keeping the Wilderness. pp. 108-117. IN: The American Land. Smithsonian Exposition Books, Washington, D.C.
 The Research Function of the Council for Scientific and Industrial Research. Government Printer, Accra, Ghana (With W.G., Matlock and A.M. North).
 Plants for Medicinal Uses with Special Reference too Arid Zones. pp. 117-118, IN: Goodin, J.T. and D.K. Northington, ed. *Arid Land Plant Resources*. Texas Tech. University, Lubbock, Texas.
 Problems of Agricultural and Industrial Development in Africa. pp 130-147. IN: Feeding Africa. Proc. of the Second Symposium of Pan African Pugwash Group. 28 May - 3 June 1978. Cairo, Egypt.
- 1980 Evaluating Impacts on Endangered and Threatened Flora. pp. 129-132. IN: Biological Evaluation of Environmental Impact. Proc. of a Symposium at the 1976 meeting of the Ecological Society of America and American Institute of Biological Sciences. Council on Environmental Quality and Fish and Wildlife Service, U.S. Department of Interior, Washington, D.C.
 Foreword. p.v. IN: Firewood Crops. Shrubs and Tree Species for Energy Production. National Academy of Sciences, Washington, D.C.
 In the Jungle, We Know Not What We Do. OP-ED. 19 July 1980. *The New York Times*.
 Velloziaceae Brasiliae - 2. *Bradea* 3(14): 105-114 (with L.B. Smith).
- 1981 The Terrestrial Greenhouse. pp. 134-141. IN: Fire of Life. The Smithsonian Book of the Sun. Smithsonian Exposition Books, Washington, D.C.
 Assessment of Threatened Plant Species in the United States. pp. 19-58. IN: Sunge, H., ed. *Biological Aspects of Rare Plant Conservation*. John Wiley and Sons., Inc., New York.
 Smithsonian Institution Endangered Flora Computerized Information. pp. 111-122. IN: Morse, L.E. and M.S. Henifin (eds.). *Rare Plant Conservation: Geographical Data Organisation*. Bronx, New York: The New York Botanical Garden (with R.A. DeFilipps).
 Biology in the Humid Tropics of Africa. pp. 22-36, IN: Ayensu, E.S. and J. Marton-Lefevre, eds. *International Biosciences Networks - African Biosciences Network*. Washington, D.C., International Council of Scientific Unions and UNESCO.
 The International Regulation of Trade in Endangered Species of Wild Orchids. *American Orchid Society Bulletin* 50(8): 959-968. (With R.A. DeFilipps).
 A Worldwide Role for the Healing Powers of Plants. *Smithsonian* 12(8): 86-97.
- 1982 Third World Nations and Technological Innovations; A View Towards the 21st Century. New Hampshire International Seminar, University of New Hampshire, Durham, 29 October. 33p.
 Der Krauterdoktor Kommt. *Weltwoche Magazin* 23:4-10 (9 June).
- 1983 Food, Energy and Technology: Perspectives from Developing Countries. pp. 263-287. IN: "How Humans Adapt: A Biocultural Odyssey" D. ORTNER, Editor, Smithsonian Press.

- Endangered Plants of the Americas. IN: Proceedings of the XIII International Botanical Congress, Sydney, Australia.
- The Plight of the World's Vanishing Plants. IN: Proceedings of the International Botanical Congress, Sydney, Australia.
- International Approaches to the Conservation of Wild Orchids. IN: Proceedings of the XIII International Botanical Congress, Sydney, Australia.
- Plants and the Environment: A Message for the Future. IN: Proceedings of the XIII International Botanical Congress, Sydney, Australia.
- Developing Countries and the Technological Innovations of the Twenty-First Century. IN: Proceedings of International Biosciences Networks Meeting (December, 1981, Madurai, India).
- Endangered Plants Used in Traditional Medicine. IN: Bannerman, R.H., J. Burton, and Ch'en Wen-Chieh, eds. pp. 175-183. Traditional Medicine and Health Coverage. A Reader for Health Administrators and Practitioners. World Health Organisation, Geneva, Switzerland.
- Arte Creado por la Naturaleza en la Corteza del Eucalopto. Geomundo Vol.#158-163 (February).
- Reduction of Biological Diversity and Species Loss. pp.# IN: Proceedings of the International Scientific Conference on Environmental Research and Management Priorities for the 1980s. Royal Swedish Academy of Sciences, Stockholm, November 1982.
- Reduction of Biological Diversity and Species Loss. *Ambio* 12(2): 72-74. (With N. Myers)
- Technological Innovations and the Third World Nations. IN: New Frontiers in Technology Application. pp. 21-27, ed. Weizsacker, E.U., M.S. Swaminathan, and Aklilu Lemma. U.N. and Tycooly International Publishing, Ltd., Dublin.
- The Healing Plants. *Unasyuva*. 35(140): 2-6.
- Desertification in Africa - The Lessons it Provides for Arid and Semi-Arid Regions. *Biology International* Special Issue 1. Paris, France.
- Long-Term Biological Consequences of Nuclear War. *Science* 222: 1293-1300. (With Paul Ehrlich et al.)
- Taxonomic Problems Relating to Endangered Plants Species. pages 411-421. IN: Current Concepts in Plant Taxonomy (Edited by V.H. Heywood and D.M. Moore) Academy Press, London and Orlando.
- 1984 The World's Diminishing Plant Resources, pp. 19-28. IN: Conservation of Tropical Plant Resources. ed. Jain, S.K. and K.L. Mehra. Botanical Survey of India.
- Smithsonian Institution Endangered Flora Information - Processing Experiences and Goals. pp. 29-38. IN: Conservation of Tropical Plant Resources. ed. Jain, S.K. and K.L. Mehra. Botanical Survey of India.
- Taxonomy and Biosystematics of *Striga*. In *Striga: Biology and Control*. (ed. Ayensu et al.). ICSU Press and IDRC (With L.T. Musselman).
- Institute for Natural Resources in Africa: A Proposal by the United Nations University. *Biology International*. No.
- Third World Development: Digitising the Drumbeat. *Inter-Media* Vol.12, No.4/5. July/September. Pages 30-31.
- 1985 Africa, IN: Goodin, J.R. & D.K. Northington (eds.) *Plant Resources of Arid and Semi-Arid Lands*. Academic Press: New York. Pages 1-33.
- A Third World Revolution? *Small Devices Foster Winds of Change*; *Worldpaper* Vo. VII, No.7, July, Page 6.
- Africa: Toward Food Self-Sufficiency. *Bulletin of the Atomic Scientists* Vol. 41, No. 8, pages 8-52.
- Resources, Development, and the New Century: Forestry, Pages 9-335 (With John Spears). In *The Global Possible*, ed. Robert Repetto. Yale University Press, New Haven and London.
- Role of Medicinal and Aromatic Plants in Africa's Development; Commonwealth Secretariat.

- Science, Technology, Environment and Sustainable Development. World Commission on Environment and Development. Presented in Oslo 1985 during Commission Meeting.
- Pattern and Impact of Drought in the Sahel Countries. In Africa; Symposium Vol. CIDA, IDRC and ICSU. 12 Pages.
- International Agriculture Research Centre: A Commentary. Presented at the International Centres Week in the International Monetary Fund, Washington, D.C. 28 October 1985, during the CGIAR Impact Study Presentation and Discussion. 23 pages.
- 1986 World Medicinal Plant Resources: Pages 11-49. In Conservation for Productive Agriculture eds. V.L. Chopra and T.N. Khoshoo. Indian Council of Agricultural Research. New Delhi.
- Relevance of Improved Planting Materials in Subsistence Agriculture. In Subsistence Agriculture in Africa - Problems and Prospects. Monrovia, Liberia (24-26 March 1986).
- Population, Environment and Development in Africa: A Commentary. Presented at the All-Africa Parliamentary Conference on Population and Development in Harare, Zimbabwe on 12-16 May.
- Food Irradiation Application in Selected African Countries - A Promising Technology for Post-Harvest Food Conservation (With J.P. Schwartz). Prepared for UNDP and IFC.
- 1987 Beyond the Crisis in African Agriculture Balancing Conservation and Development -The Political Imperatives. Ceres. FAO Review. May-June Issue No. 117 Vol. 20 No.3, Pages 13-18.
- African Environmental Crisis: The Way Out. Remarks Presented at the African Development Bank Annual Meeting on 8 June, Cairo, Egypt.
- Mobilisation of the African Scientific Community for the Development of Africa: Organisation of the African Community. Presented at the First Congress of African Scientists in Brazzaville, People's Republic of the Congo. 25-30 June.
- Science and Technology: Options for Advancement. 59 Pages. Prepared for the United Nations Development Programme for the First Congress of African Scientists, Brazzaville. People's Republic of the Congo. 25-30 June.
- 1988 Injecting Science, Technology and Environment in the Economic and Social Development of Africa. Presented to the African Development Bank. 21 Pages. September.
- 1989 Current and Future Strategies for Funding: Science and Technology by the African Development Bank. Paper presented at the High-Level Colloquium on "Science and Technology for the Future". 11 Pages UNESCO, Paris, 14-16 June.
- FAMINE: A Lack of Command Over Food? Presented at the Wilton Park Conference on Sub-Saharan Africa: The Challenge of Population, Growth, Desertification and Famine. Steyning, West Sussex 26 - 20 June. 20 Pages.
- Technology and Agriculture. Paper presented at the African Leadership Forum on "The Challenges of Agricultural Production and Food Security in Africa". Ota, Nigeria, 27-30 July.
- Financing Agricultural Development in Africa. Presented at the Symposium organised by the African Centre for Monetary Studies (ACMS) in Abuja, Nigeria, 14-16 November.
- 1990 Application of Irradiation Technology and Africa's Food Needs. Prepared for United Nations Economic Commission for Africa and African Regional Centre for Technology. 72 Pages.
- Issue Paper for the Consultative Meeting of the Twenty-Two Sudano - Sahelian Countries. Prepared for the U.N. SUDANO-SAHELIAN OFFICE, United Nations, New York. 22 pages.
- 1991 Potential Niche-Industries In Selected West African Countries. Prepared for International Resources Group Ltd., Washington, D.C. (With S. Duncan) I-XXVII + 162 Pages.
- Entrepreneurship Development in Sub-Sahara Africa. Prepared for the African Project Development Facility.
- 1993 Conservation of Tropical Forest and Other Terrestrial Ecosystems. pp 23-40. IN: Environmental Change in Rain Forests and Drylands. UNU Global Environmental Forum II. United Nations University, Tokyo.

- Biodiversity, Biotechnology and Sustainable Agriculture. IN: United Nations University Agenda 21 Programme. UNU, Tokyo.
- Policy Issues Related to Sustainable Development: Financial Aspects IN: Sustainable Environmental and Resource Management. Futures for Sub-Saharan Africa. United Nations University, Accra.
- 1994 Human Resources Development in Africa. pp.19-27. On Unesco Symposium on Science and Technology in Africa. Final Report of the World Science Report. Nairobi, Kenya.
- Ghana By The Year 2000: An Agenda for the Nation. pp 11-34. In Proceedings of the Academy of Arts and Sciences. Vol. xxix. 1991. Accra, Ghana.
- Africa at the Threshold of the 21st Century. pp10. Relevance of Nkrumah and Pan Africanism. Accra, Ghana.
- 1995 Life Support Systems & Sustainable Development: An Issues Report on African Futures. pp.43.
- ECO-INDUSTRY: African Business and Industry in Partnership for the Environment.
- Prospects of Commercial Cultivation, Processing and Marketing of Herbal Products. pp 11. IN: Traditional Medicine & Modern Health Care: Partnership for the Future. National Consensus Building Workshop on Traditional Medicine. WHO Ghana.
- Global Cooperation in Science, Engineering and Medicine. Pages 33 - 35. New York Academy of Sciences, The Rockefeller Foundation Conference Centre, Bellagio, Italy.
- 1996 Ghana: Biodiversity and Tropical Forestry Assessment. 220 Pages. Report Submitted to USAID Mission in Ghana. (With A. Adu and E. Barnes)
- Conversion of Military Sites and Defence Industries; Challenges and Opportunities in Developing Countries. Presentation - International Conference on Conversion of Military Sites and Defence Industries. Kaiserslautern, Germany.
- Possible Ways of Making the Imperative of Development Compatible with Conservation Presentation - World Conservation Congress, Montreal, Canada.
- Bioprospecting and West African Development pages 152-156. In West Africa - The official 40th anniversary commemorative publication of the West Africa Committee.
- 1997 The Status of Science in The Service of Sustainable Livelihoods in Africa. UNDP International Working Group on "Sustainable Livelihoods". New York.
- Land Tenure and Land Use in Ghana (With special reference to the improvement of access to land by the private sector for large scale agriculture and industrial development) Prepared for USAID/Ghana - Project Development and Support Project.
- 1998 Keeping Our Biodiversity Alive (Pages 76 - 77) In Valuing The Global Environment. (GEF Publication)
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