

A PERSONAL REFLECTION ON 60 YEARS OF BAMBOO PASSION AND WORK

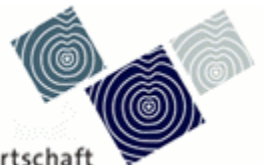
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Content

1. The begin
2. Culm structure
3. Culm biology
4. Preservation
5. International Co-operations



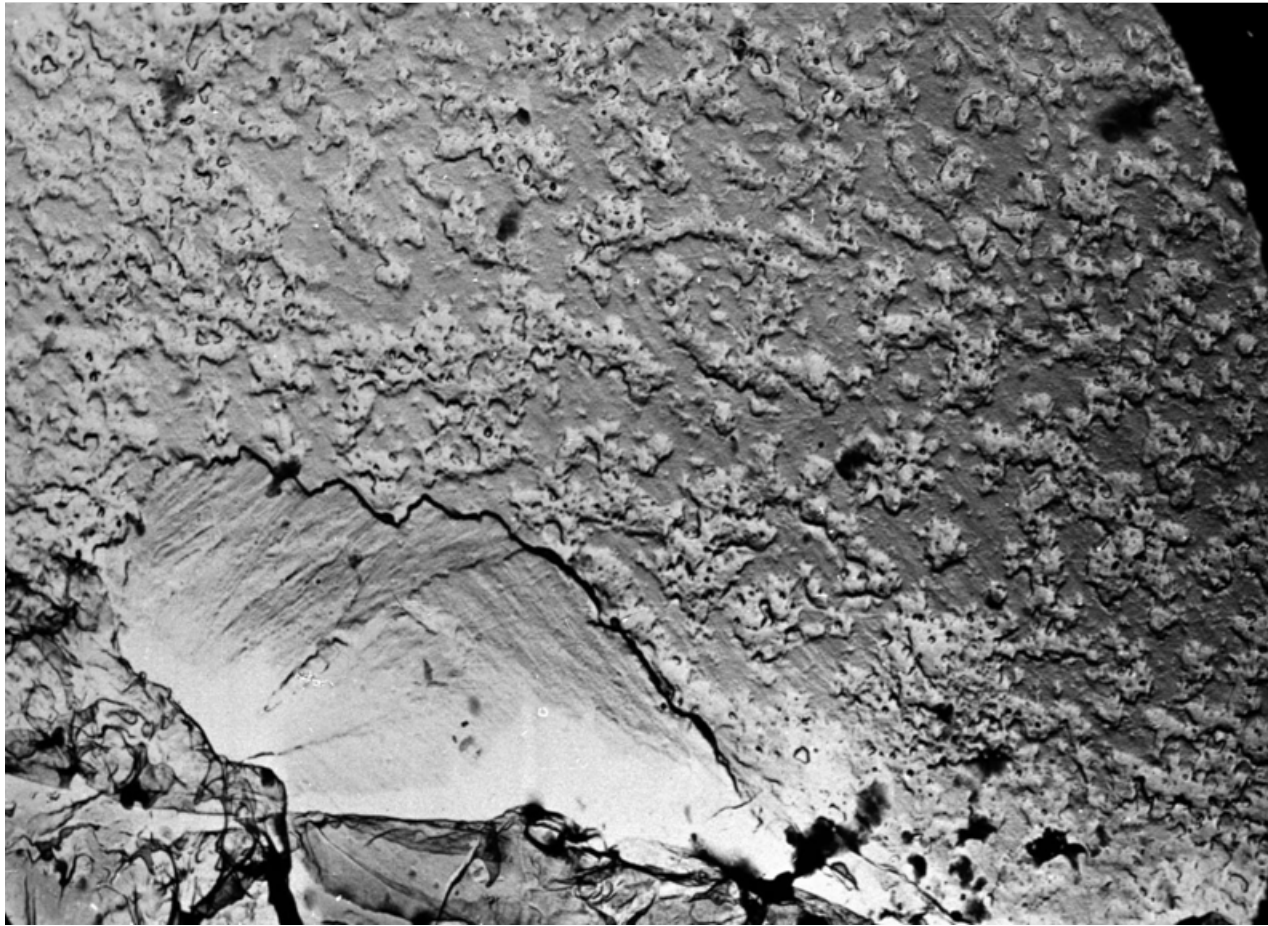
Universität Hamburg



Zentrum Holzwirtschaft



Rupture of an internode at 16 to.



Parenchyma cell with wall layers, *Bambusa vulgaris*, electronmicrograph, 1952



Family welcome by Dr.Purushotham, right



Christmas Day 1957, Katrin feeding the monkeys in the bamboo forest



Wood Preservation Branch of the Forest Research Institute, Dehra Dun, 1957



Treatment of bamboo culms by the sap-replacement method, Bori Forest



Kamesh Salam with his wife Hussina, Guwahati, 2003



Bamboo for houses, UNDP Project 2003

EXPANDED TECHNICAL ASSISTANCE PROGRAM

FAO

No. **1080**

Report to the
Government of

INDONESIA

WOOD PRESERVATION



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, 1959

FAO Project on Wood Preservation in Indonesia, 1958

„HOLZ als Roh- und Werkstoff“, Bd. 17 (1959), S. 421–427

Springer-Verlag, Berlin · Göttingen · Heidelberg



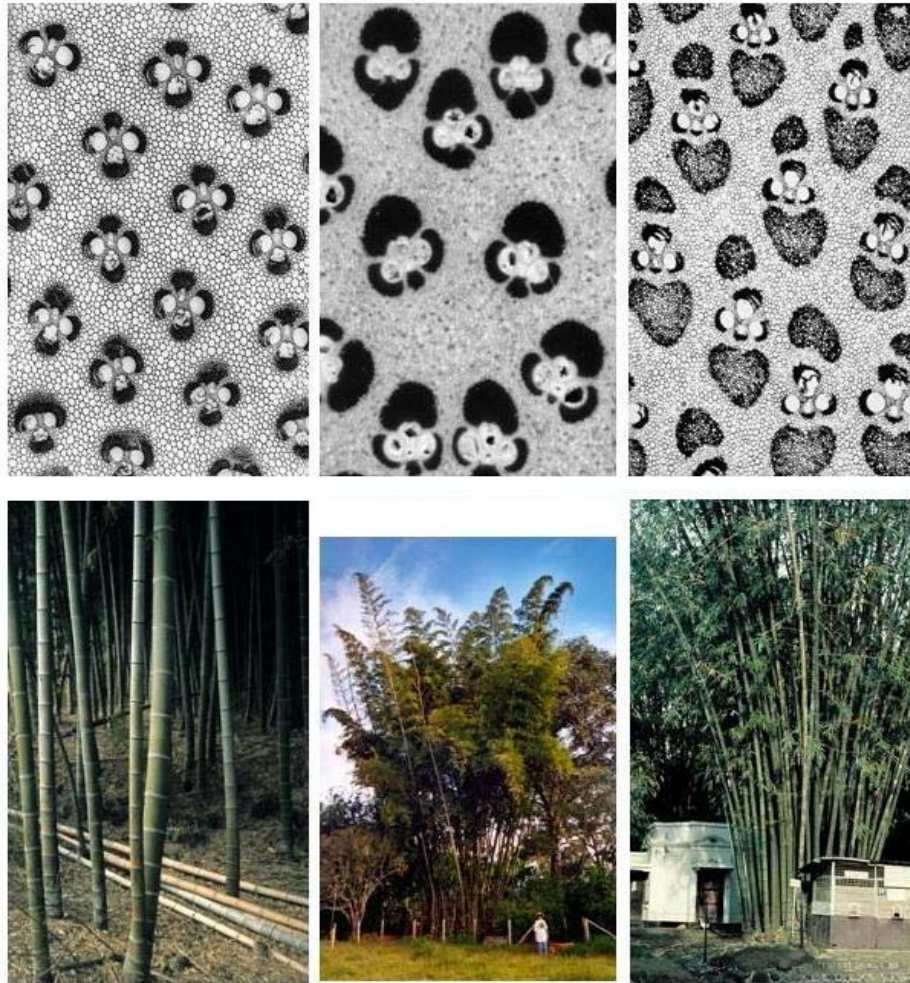
**Über den Einfluß der Himmelsrichtung auf die Länge
von Holzfasern und Tracheiden**

On the Influence of Cardinal Points in the Lengths of Wood Fibres and Tracheids

Von **W. Liese** und **H. E. Dadswell**

Forstbotanisches Institut der Universität Freiburg i. Br. und Division of Forest Products, Commonwealth Scientific
and Industrial Research Organization, Melbourne *

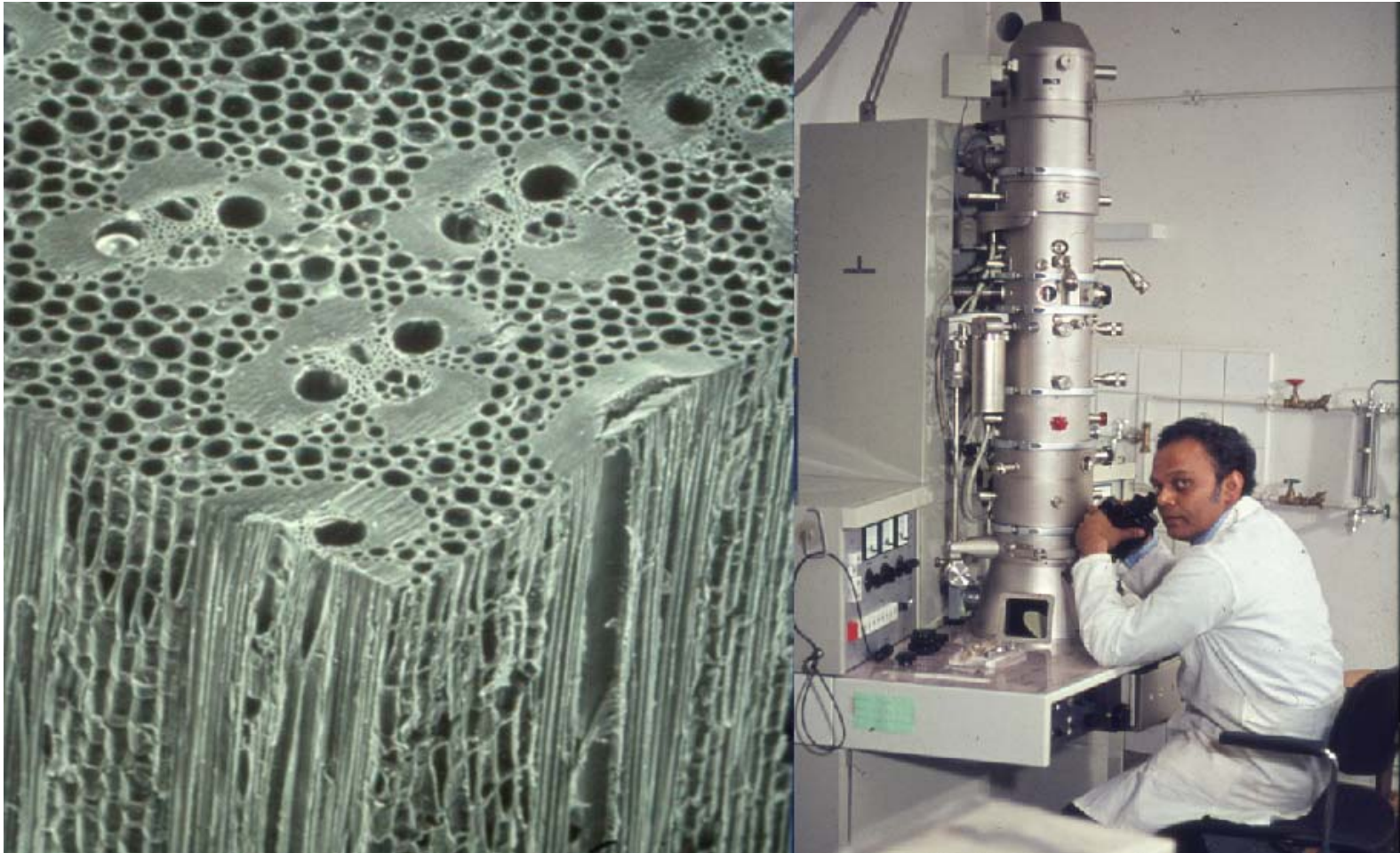
First work on Indian bamboo with Dr. Dadswell and Dr. Wardrop,
CSIRO, Melbourne, 1958



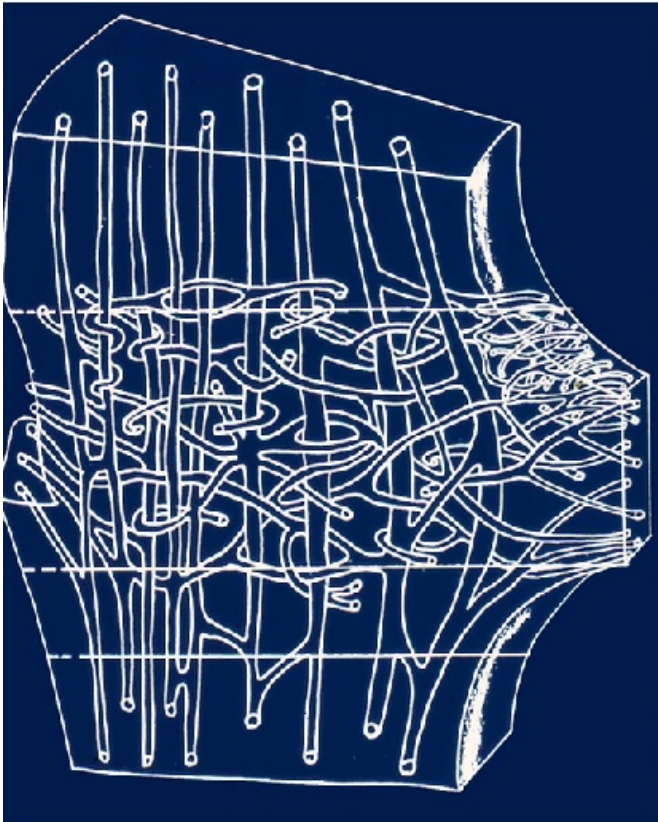
Vascular bundle types related to bamboo types



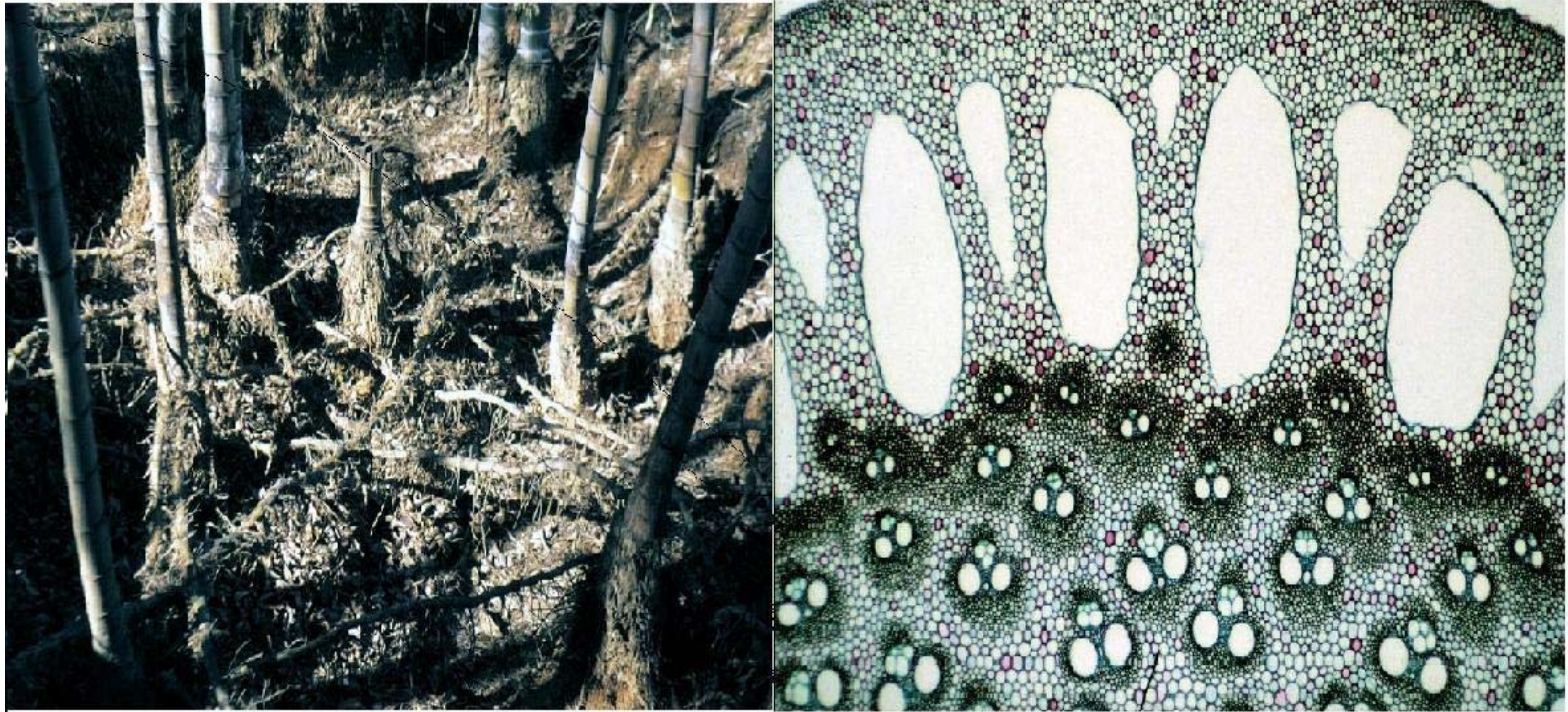
A refined vascular bundle classification by Dr. D. Grosser presented at the Bamboo Workshop 1991, Chiang Mai



Dr. N. Parameswaran explores the microstructures of bamboo by electronmicroscopy



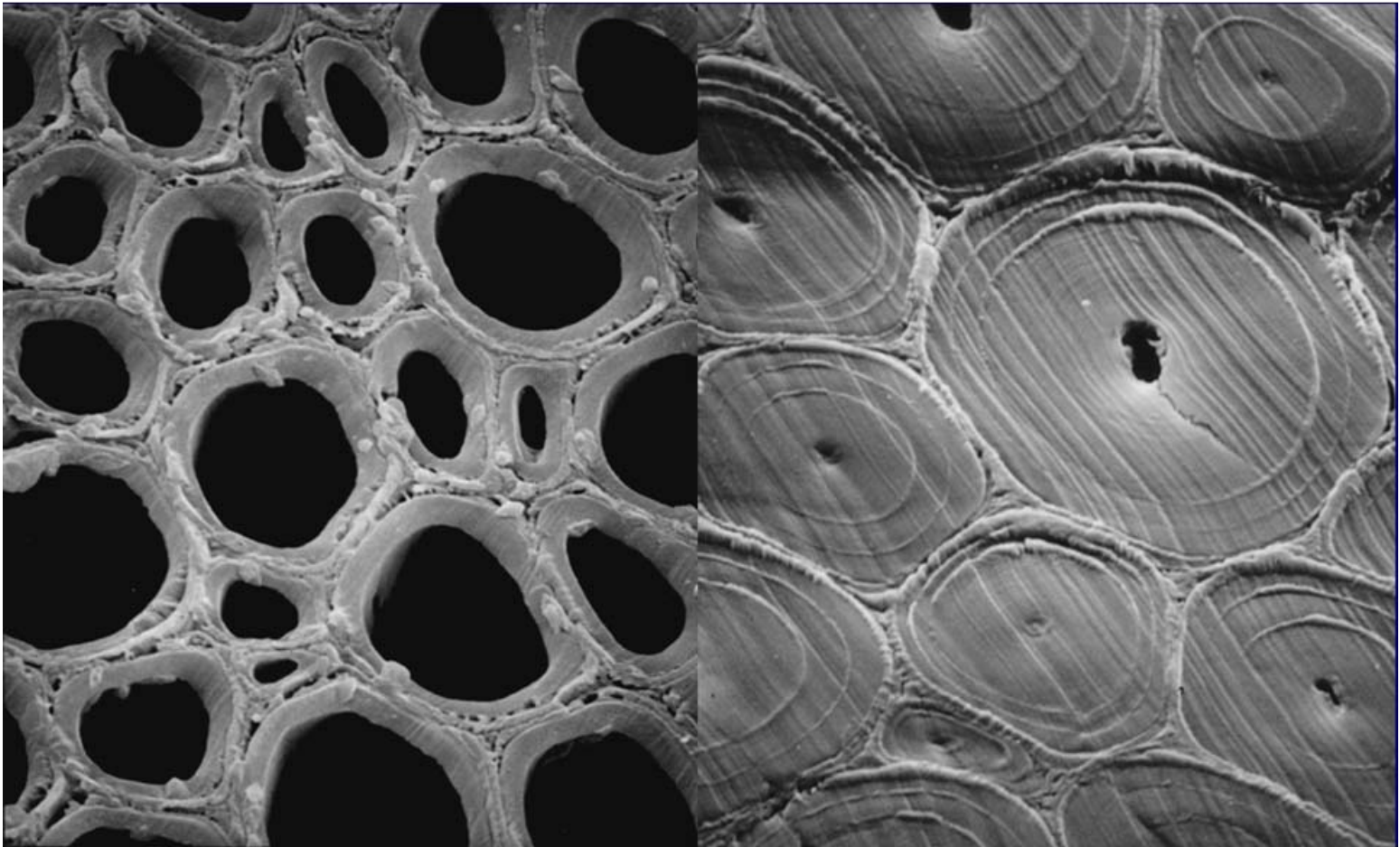
Dr.Yulong Ding clarifies the nodal structure of the bamboo culm



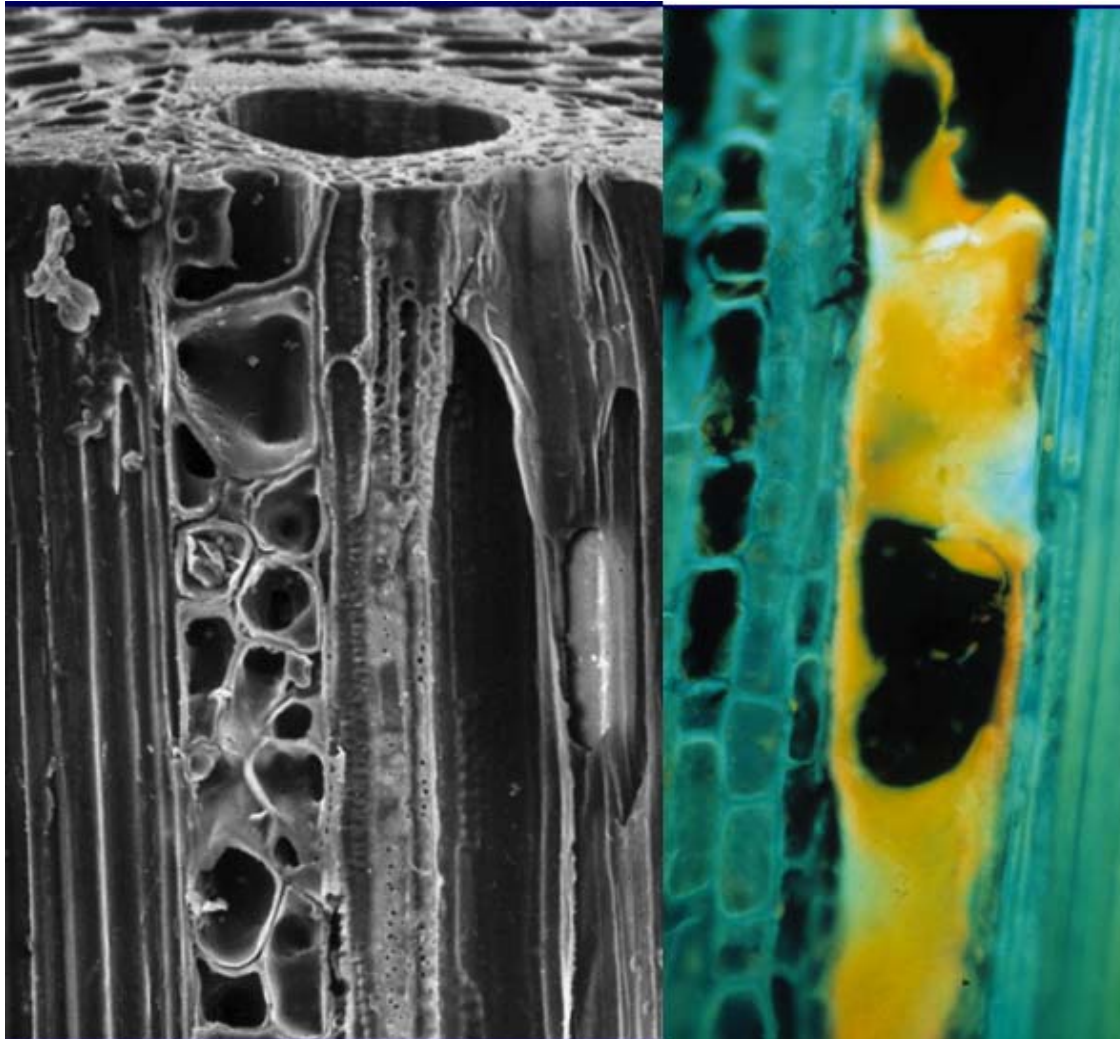
Structural differences of the bamboo rhizome with air canals, *Phyllostachys heteroclada*



Cooperation between Yulong Ding and Gudrun Weiner



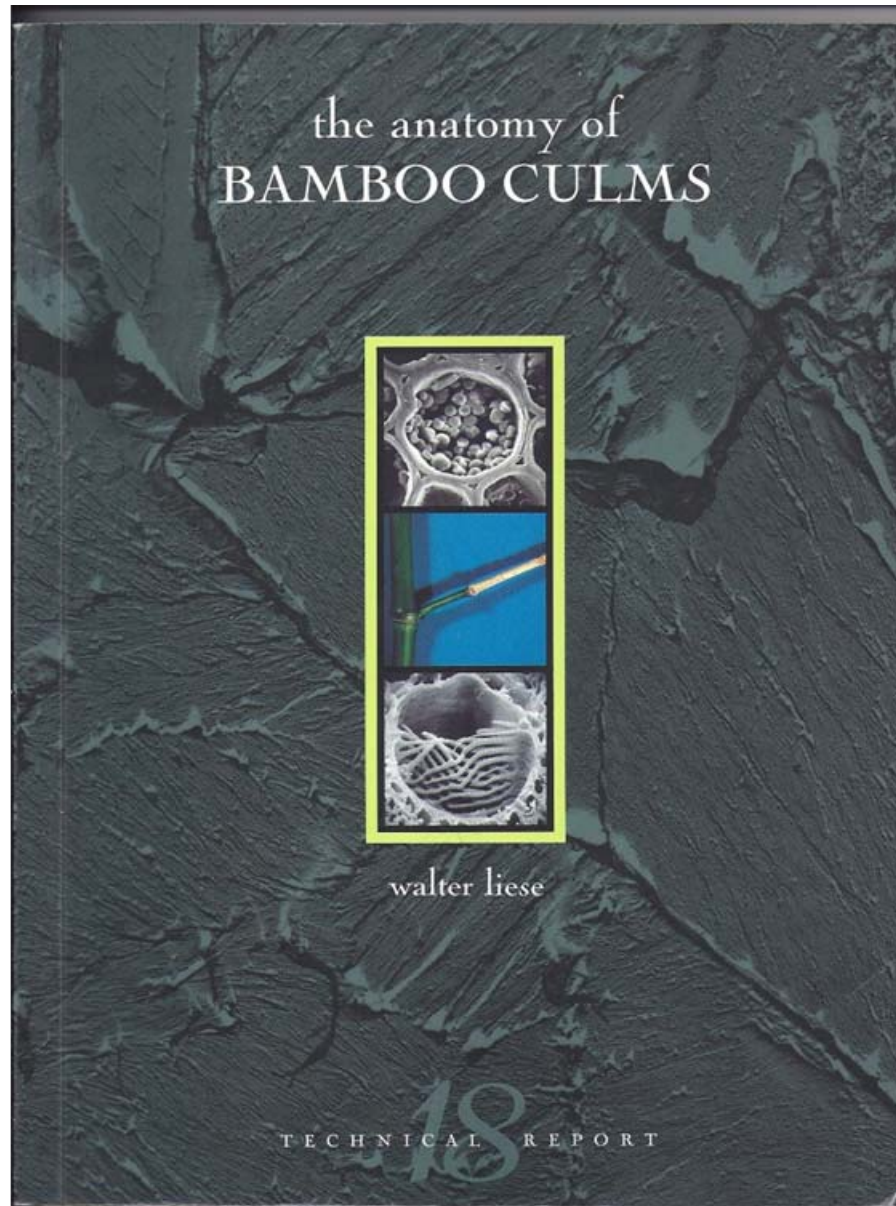
Bamboo fibre cell walls at 1 year and 6 years, *Phyllostachys viridiglaucescens*



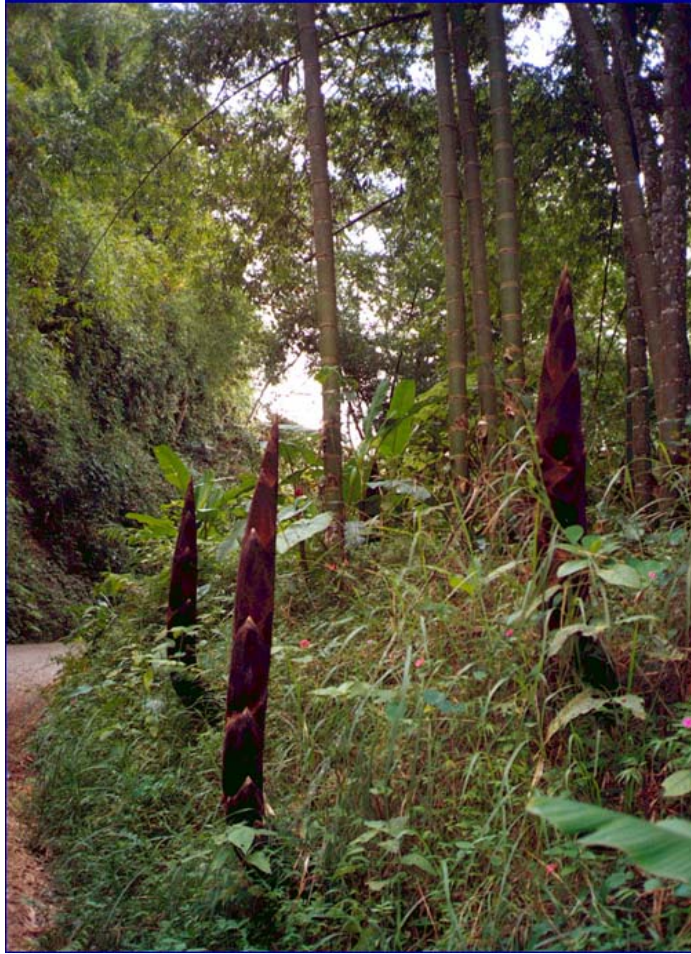
Vessel closure by tyloses and slime



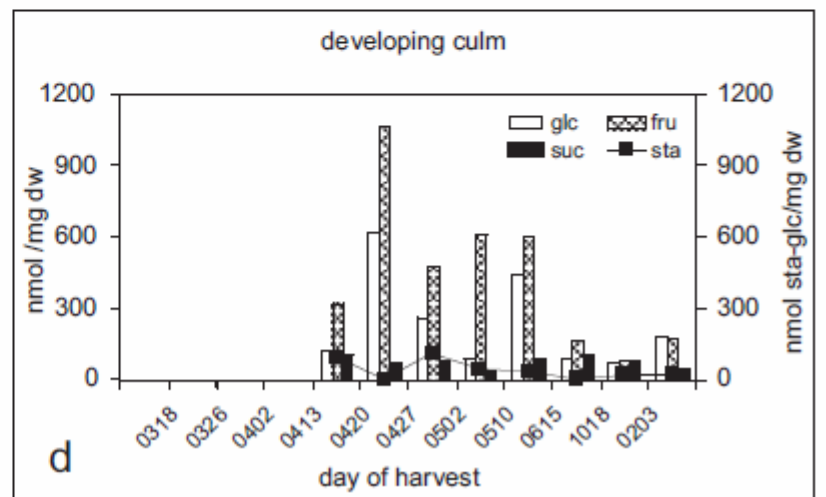
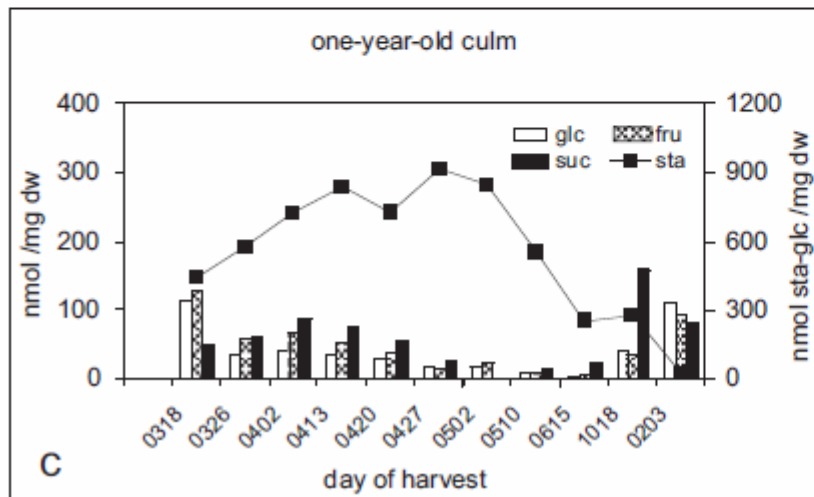
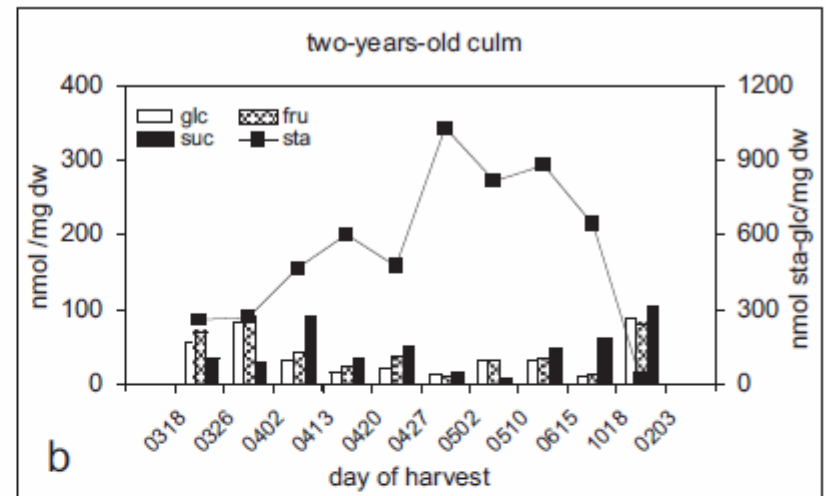
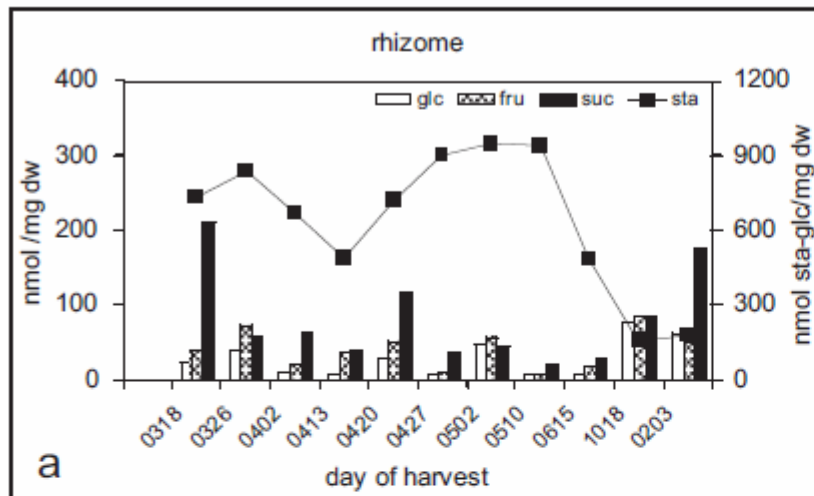
Discussion between Abd. Latif Mohmod with Katrin Liese, Malaysia in our bamboo garden



The anatomy of bamboo culms, INBAR Rep. 18, 1998



Expansion of bamboo culms, *Guadua angustifolia*,
with Xymena Londono, Pereira, Colombia



Seasonal course of contents of glucose ,fructose , sucrose and starch in the rhizome ,one-year-old , two-years-old , and the developing culm of *Sasa palmata* from March 18th, 2004 until February 3rd, 2005



Collection of bamboo sap from *Oxythenanthera braunii*, fermenting from tasty to alcoholic. Iringa, Tanzania



Happy villagers after enjoying bamboo wine, Tanzania



Natural bamboo forest with young and dying culms,
Guadua angustifolia, Colombia



Flowering of *Fargesia murielae*



Flowering of *Melocanna bacciferra* : 1969 in Bangladesh; 2004 in Colombia as well as in North-India. The pear-like fruits-with vivipary-appear delicious, specially for rats



Bamboo flowering with their subsequent dying, *Dendrocalamus strictus*



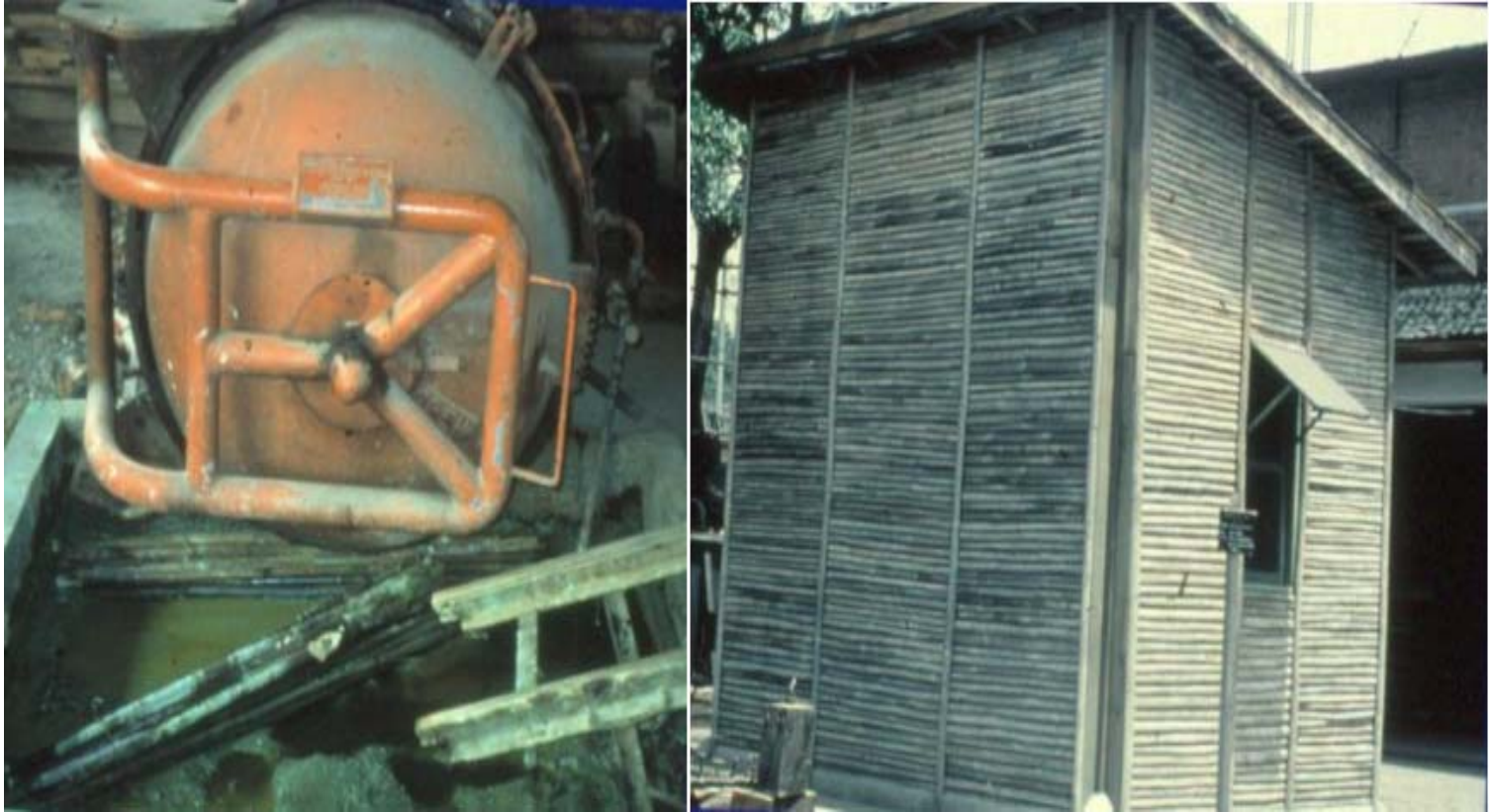
Bamboo structures with captured CO_2 will naturally degraded and release the CO_2 again into the atmosphere



A newly built bamboo hotel is soon infested by fungi for degradation



Bamboo storage at a pulp mill, degraded after 2 years



Earlier pressure treatment protects this construction since over 50 years



Pressure treatment with creosote caused environmental damage



Trials to treat bamboo culms directly in the forest
with the sap-replacement system



Bamboo culms treated by the sap replacement system, EBF,
Bali



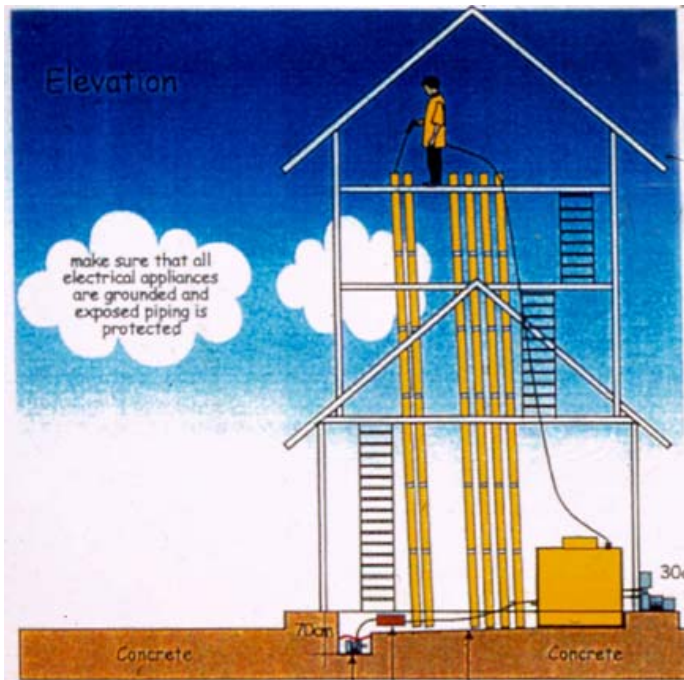
A valve at the pressure cap releases air to let preservative pressed in



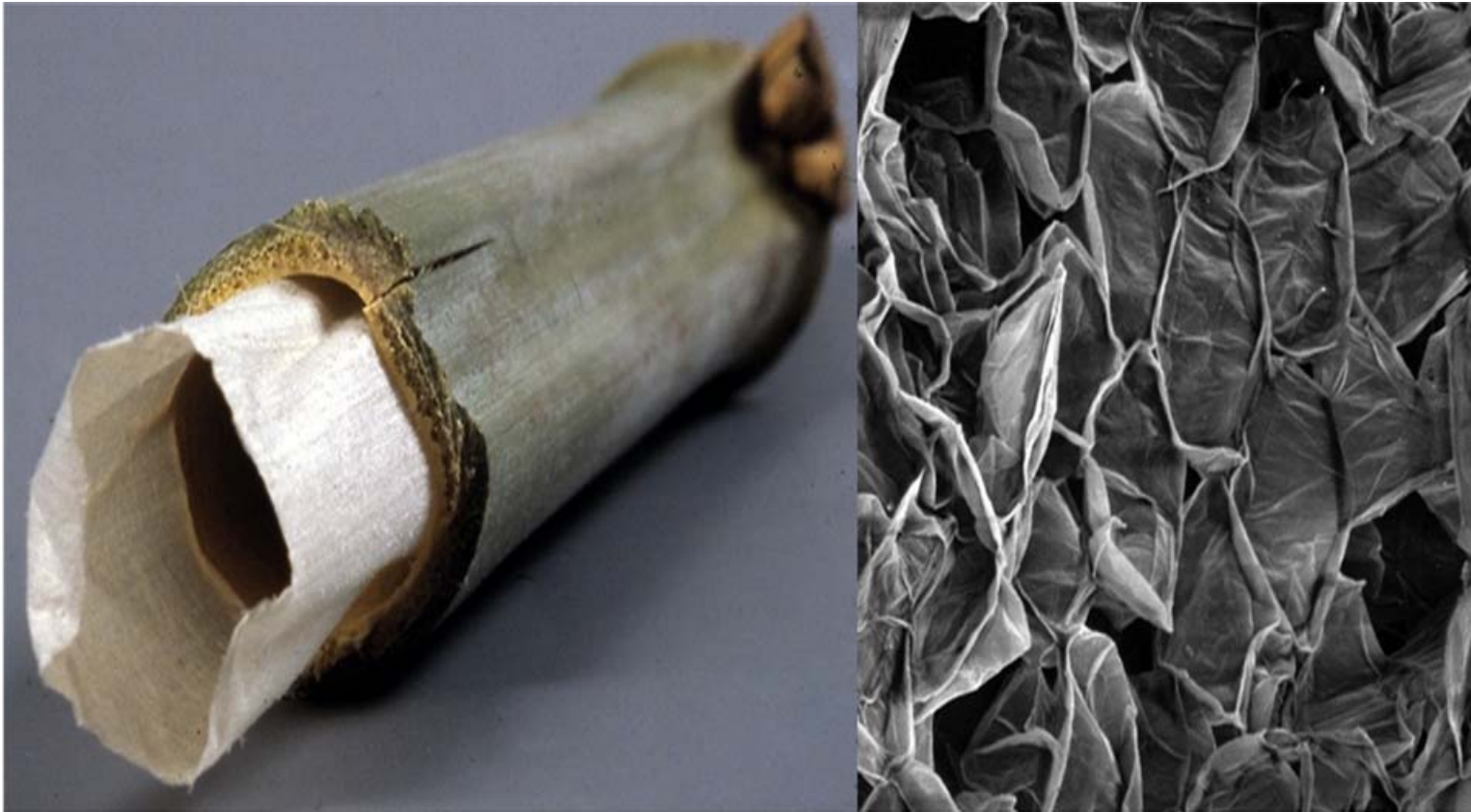
Centre for the Environmental Bamboo Foundation, EBF, Ubud, Bali



Linda Garland, Founder of the Environmental Bamboo Foundation (EBF)



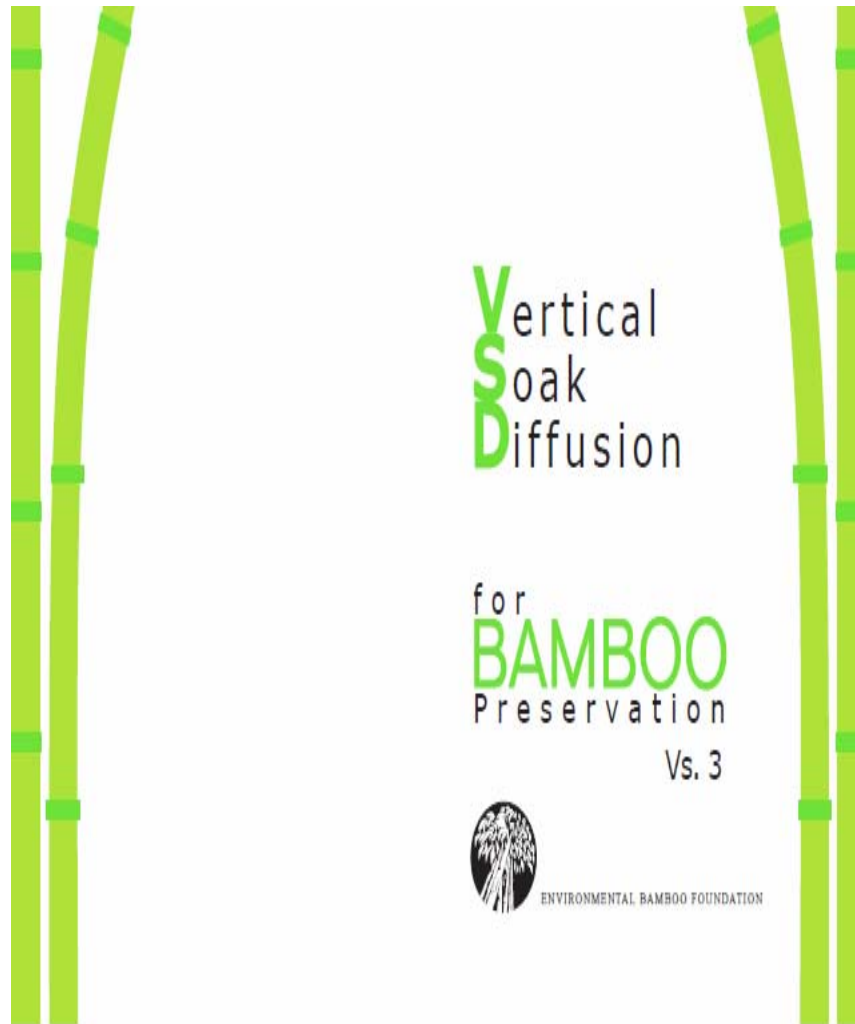
Vertical Soak Diffusion System (VSD) for bamboo preservation



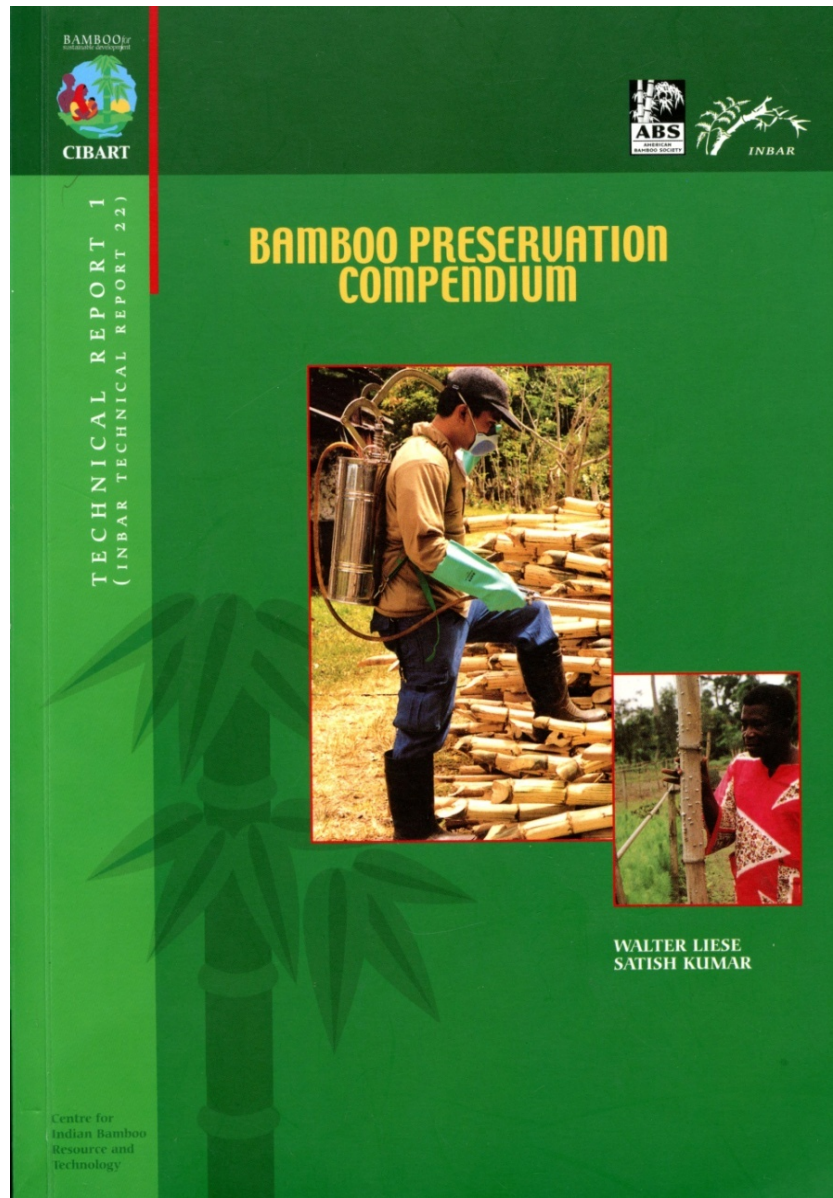
Diffusion of the preservative into the culm will be influenced by the structure of its inner cell layer.



Filling the preservative into the lumina with their disrupted nodal walls, except the last node, to form a container, Thailand



Operational manual for the VSD method by
the Environmental Foundation, 26 pp.



Bamboo Preservation Compendium
INBAR Techn.Rep 22, 2003



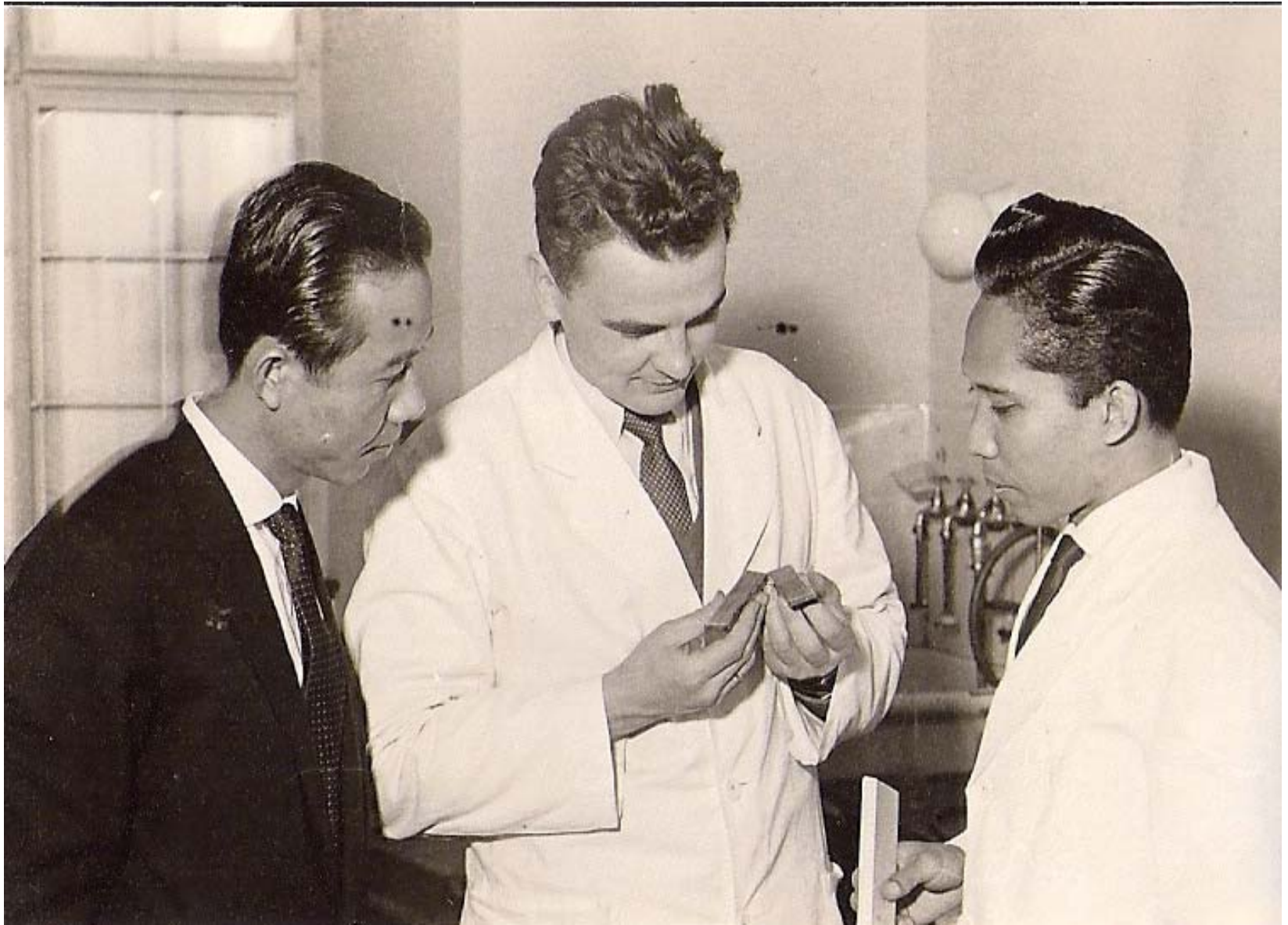
The IV International Bamboo Congress, Festival and Trade Fair, Ubud 1995



Bamboo music is always a happening, Bali', 1995



Lively inter-change at the congress



Laboratory work with Bhot Anuwongse, Thailand and Abdurachim Widjaja, Indonesia



KYOTO INTERNATIONAL CONFERENCE HALL, SEPTEMBER 6-12, 1981

Opening of the XVII IUFRO WORLD CONGRESS, Kyoto, 1981

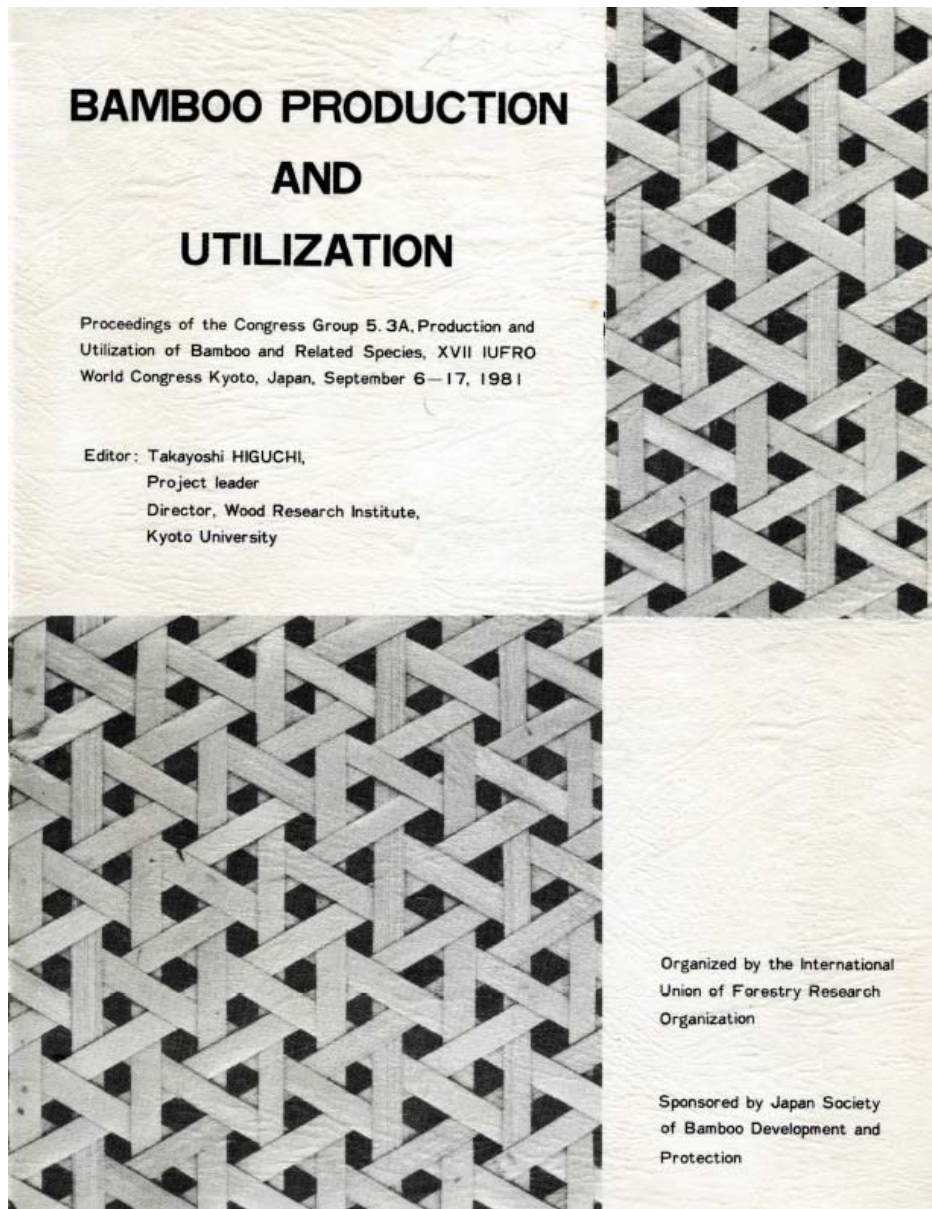


Fig. 49 : Proceedings on „Bamboo Production and Utilization“, IUFRO CONGRESS 1981, 213 pp.



At the IUFRO Congress, from right
Prof. Koichiro UEDA, Prof. Takayoshi HIGUSHI, Prof. Ken
SHIMAJI

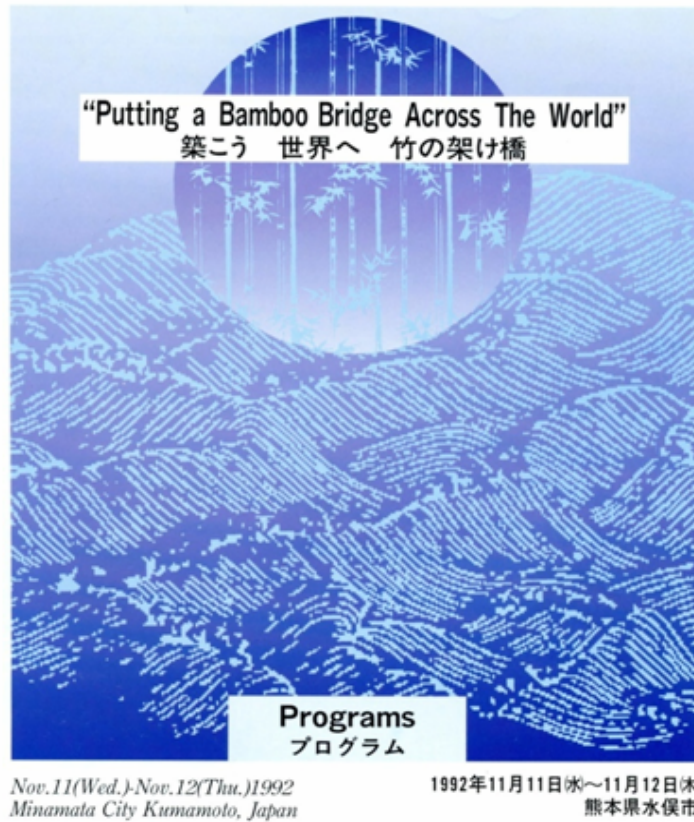


Prince and Princess of Japan planting
Phyllostachys pubescens var. *heterocycla*



The bamboo grove after 30 years

The 3rd International Bamboo Congress and The 33rd National Bamboo Convention



The 3rd International Bamboo Congress, Minamata, Japan
with Dr. Masatoshi Watanabe and Wolfgang Eberts



INBAR International Bamboo Workshops, Xianning Hubei, China, 2003



Dr. Cherla Sastry,
IDRC Regional Representative, Beijing



Discussion with Chinese delegation about IUFRO participation,
with Prof. Wenyu Hsiung, left, 1980, Beijing



Welcome at Nanjing Forestry University by Prof. Wenyu Hsiung
left



Lecturing as Concurrent Professor, Nanjing Forestry University



Welcome by the Taiwan Forestry Research Institute, Prof. Shuen Chao Wu, at right



Visit an all bamboo house, Taichung Forest



Prof. Wu trusting and enjoying a bamboo laminated chair



Yves Crouzet at the Bambouseraie, La Reunion



Nastus borbonicus, La Reunion



*Walls, left from local bamboo with limited lifetime,
right imported from China and quit durable*



Oxythenanthera abyssinica growing
in high altitude, Ethiopia



The highland bamboo as the only material for heating and cooking



The lowland Bamboo *Oxythenanthera braunii* flowers and dies



Fruits after flowering of the lowland bamoo



The lowland bamboo is loved by cattle and thus reduced



Children transport heavy bundles of bamboo for the daily meal.
Since bamboo does not keep glow, a constant resupply is needed



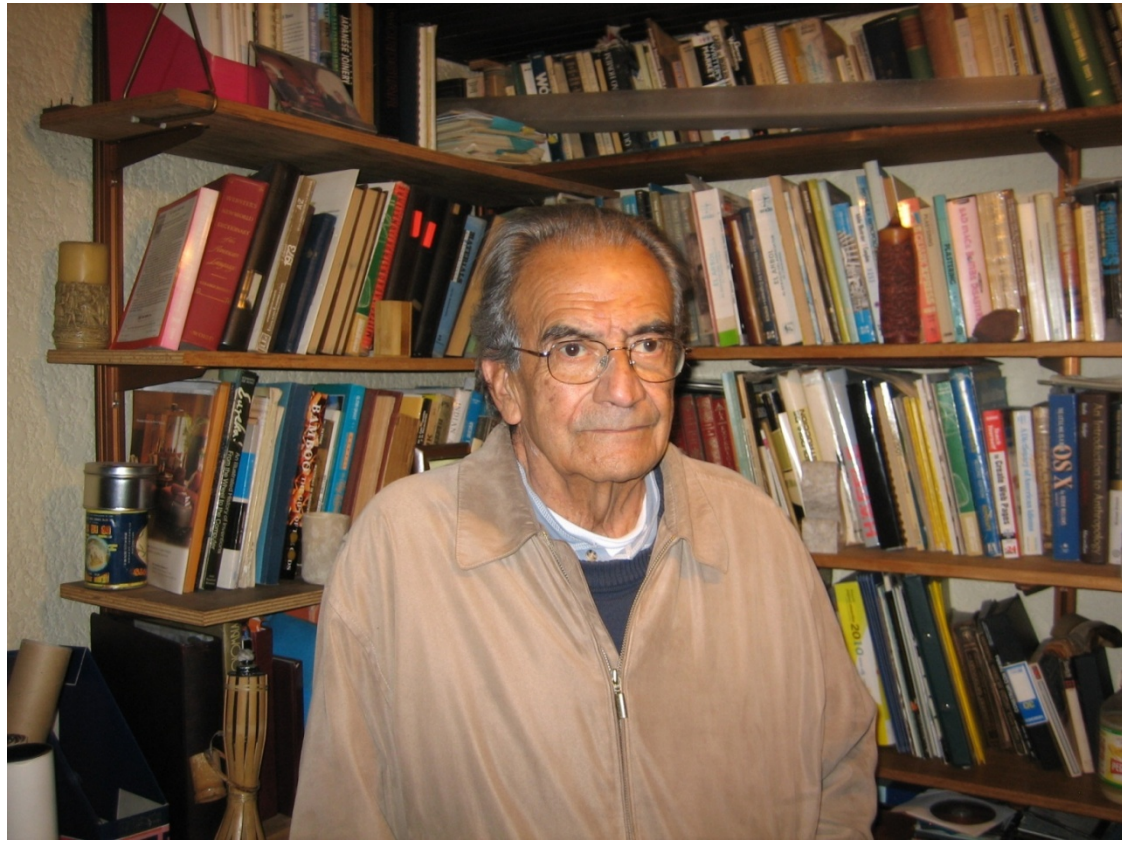
ITTO Workshop for production of bamboo charcoal,
with the ITTO DG Emmanuel Ze Meka at right



ITTO Workshop on production of bamboo coal, Thailand



Bamboo coal from Thailand



Oscar Hidalgo Lopez



Proyecto Nacional BAMBU, Manizales, Colombia



Jules Janssen and Walter Liese discussing bambo issues



Bamboo house in Costa Rica



Construction failures due to weathering and splitting



Culm embedded by cement causes shrinkage,
with water collection causing fungal decay



FUNBAMBu; Production of prefab. panels. Photo J.Jansen



FUNBAMBU: Sap replacement treatment for constructions, Photo J. Janssen



Farewell at the Simposio International GUADUA 2004, Pereira, Colombia



EU Project, field excursion, Philippines, 2003

INCO: International Scientific Cooperation Projects
1998-2002

Contract number: ICA4-CT-2001-10089

FINAL REPORT

Title: Bamboo Thematic Network

Project homepage: www.bamboonetWORK.org

Keywords: Bamboo, network



Bamboo Thematic Network.
Final Report, 2004



Convocation hall at Vergiate, Italy made with Guadua culms from Colombia

Acknowledgment

I would like to express my special thanks to Ms. Thi Kim Hong Tang in helping me to prepare this presentation.

Thank you for your attention!



Universität Hamburg

