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# **NEW HORIZONS IN AGRICULTURAL INFORMATION MANAGEMENT**

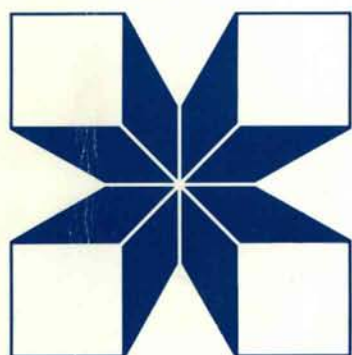
PROCEEDINGS

OF AN INTERNATIONAL SYMPOSIUM

MARCH 13-16, 1991

BEIJING, CHINA

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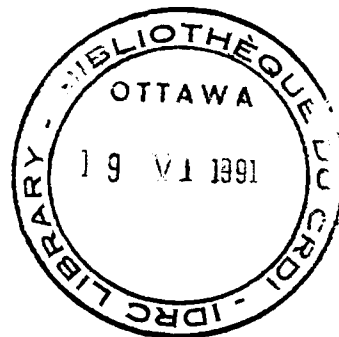
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# **New Horizons in Agricultural Information Management**

**Proceedings of an International Symposium,**

**March 13-16, 1991, Beijing, China**



**Compiled and Edited by**

**Gary K. McCone**



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# A Database of Bamboo Abstracts

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## Abstract

*Bamboos are widely distributed in the tropical and subtropical areas of Asia and the Pacific, to some extent they also occur in Africa and South America. Due to their fast growth, easy propagation, soil-binding properties, short rotation and the long fibre of culms, bamboos are ideal plants for use in afforestation, soil conservation and social forestry programs. As a result of the rapid decrease of tropical forests in recent decades much more attention has been paid to the cultivation and utilization of bamboo. Bamboo societies have been set up in America, Europe and in Asian countries. Hundreds of bamboo research papers are published annually, some 200 of them are from China.*

*In order to enhance the international exchange of bamboo information the Bamboo Information Centre, supported by the International Development Research Centre of Canada (IDRC), set out to establish a computerized database of bamboo literature for retrieval and to publish Bamboo Abstracts in Chinese and English versions. Methods of work are discussed and details described.*

## INTRODUCTION

It is said that over 75 genera and 1,250 species of bamboos occur in the world. They range from plants the size of field grass to giant trees of great height and thickness. They grow from the sea-level tropics to some 4,000-meter mountain slopes, occurring mainly in the tropical and subtropical areas of Asia and the Pacific. They also grow in Africa and South America. The most striking characteristic of bamboos is their vertiginous growth. No other living thing grows so fast. Near Kyoto a Japanese scientist measured the world's record. A culm of *Phyllostachys bambusoides* grew more than one meter in 24 hours. By watching it closely, one should have been able to see it grow. Another distinguishing feature of bamboos is their adaptability to various environments with different climatic and soil conditions. In addition bamboos propagate themselves easily by vegetative means.

Bamboos form the single most important item of forest produce used by rural communities in Asia. Their use as a long fibre raw material in the pulp and paper industry is well known and is one of the much sought after raw materials in the tropics. Their use in housing, agricultural pursuits, the fishing industry, basket making, transport systems both on land and water, handicrafts and the production of edible shoots is extremely important. Their extensive rhizome-root systems play a significant role in

soil conservation on river banks and hill slopes. The cultivation and utilization of bamboos offer more job opportunities to local people and increase their income, thus improving the stability of rural communities and the harmony of the whole society. For example, the Philippine Human Resources Development Center, a part of an ASEAN-wide Human Resources Development Program for technology transfer is developing successfully. An important part of its work is the development of manpower in cottage industries. It aims at upgrading the qualifications and competence of craftsmen in woodcraft and bamboo industries.

As a result of the rapid decrease of forests on earth, and particularly in the tropics, people pay more and more attention to the cultivation and utilization of bamboos. Consequently they deserve an improved status in the forestry literature and greater study in depth.

China is one of the most important bamboo producers in the world and bamboo has been closely bound with the life of the Chinese people throughout history. Some four thousand years ago our ancestors began to weave bamboo mats and baskets. Before the invention of paper they kept historical and cultural records on bamboo slips. They used bamboo brushes to write and bamboo arrows and bows to fight. Over one thousand years ago, the ancient Chinese scholar Dai Kaizhi recorded in his *Bamboo Manual* sixty-one types of Chinese bamboos. Later on there were further descriptions of bamboo varieties, distribution patterns, shapes, characteristics, habits and cultivation techniques in many other scholars' works. Nowadays hundreds of bamboo research papers are being published annually around the world, and some two hundred of them are from China.

In order to improve the international exchange of bamboo research information the Bamboo Information Centre (BIC) was established with support from the International Development Research Centre (IDRC), Canada and the Chinese Academy of Forestry (CAF), the People's Republic of China. The main activity of BIC is to establish a computerized database of bamboo literature for retrieval and to publish a semiannual periodical *Bamboo Abstracts* both in Chinese and English.

## **A DATABASE OF BAMBOO LITERATURE**

Generally speaking, the amount of bamboo literature is not very large, but the papers are scattered in various periodicals, such as forestry, agriculture, light industry, civil engineering and mining industry. Furthermore, there are lots of other kinds of publications like proceedings, monographs and theses, devoted to bamboo research. This causes enormous problems for professionals to identify and locate. Obviously, a computerized database is needed for document retrieval. Since, as mentioned above, the amount of bamboo literature is not very large, it is possible to establish the database on a microcomputer. With financial assistance from IDRC, we obtained a North Star NS1200 microcomputer system, which is compatible with the famous IBM series.

At the beginning of our work we wrote a computer program for retrieval and typesetting of publications, both in Chinese and English. Later on we learned that a program for document retrieval called CDS/ISIS, recommended by UNESCO, had been widely adopted by many Chinese and foreign information institutions. For the purpose of effective information exchange our computer engineers wrote a program for the conversion of data from our own system into CDS/ISIS and vice versa.

In such a vast country as China most southern provinces engage in the cultivation, utilization, research and development of bamboo. In recent years, due to the serious shortage of ordinary wood and the rapid development of a market economy, new forms and technologies of bamboo utilization have been created, and workshops on bamboo research are being held in many provinces. It is impossible to collect all this information promptly without an efficient national network. To organize the bamboo information and comply with our objectives, we have formed a bamboo information network, consisting of some thirty persons from all the southern provinces of China. They are employees of universities, research institutions, governmental bodies and enterprises. With the help of this network we receive all important bamboo information from all bamboo cultivating provinces in a timely and regular fashion. All the members of the network are capable individuals, but that does not mean they can work in harmony with each other and offer information according to our procedures naturally. The proper function of a modern information network is only attainable with well-trained members, but such individuals do not exist in our country. They must be trained in accordance with our requirements. For this purpose we organized workshops of network members. In these workshops our colleagues explained the structure of the classification system of forestry literature, the thesaurus of forestry terminology, the principles of indexing, the rules of abstract compilation and the input sheet form for computer storage. Members also discussed the proper distribution of work among themselves. Consequently the information comes to us without overlapping, in due form and in due time.

## **BAMBOO ABSTRACTS IN CHINESE AND ENGLISH**

The *Bamboo Abstracts* are published semiannually in two versions: Chinese and English. Every number includes 150 references, some 100 references are edited in Chinese and translated into English, some 50 references are edited in English and translated into Chinese. The abstracts are classified according to the Universal Decimal Classification System for the English version and the Chinese Bibliography Classification System for the Chinese version. All the references are indexed in same way for both versions.

For better translation and indexing a microthesaurus of bamboo terminology is being compiled. Some 2000 terms, including those of bamboo species, taxonomy, cultivation, protection, investigation, processing, utilization and management, have been selected.

The English language is not very popular in China. The compilation of the English version of *Bamboo Abstracts* has met many difficulties with the language barrier. With

an oriental language for a mother tongue, we Chinese often find it very difficult to express our ideas properly in English. Along with the language barrier, the different ways of reasoning and different styles of expression between persons of different cultural backgrounds also present lots of difficulties.

We Chinese are used to building sentences in a natural order, in the active voice. In our opinion the subject of a sentence should be arranged at the beginning, followed by a predicate, and then objects, both indirect and direct. Sentences of such a pattern are widely received in Chinese language, but once you translate them into English, sometimes they sound verbose, and sometimes even tedious. Some of our abstracts are crammed with such clauses as: "This paper described the process of...", "The author suggested that..." Actually these clauses don't make any sense to readers. Most of them should be deleted from the English translation. We reviewed some research papers written by native Englishmen and found many of the sentences were built in the passive voice. Such sentences read laconic and clear, they tell us the most interesting points: what has been done and how it was done. It goes without saying who did it, of course the author did. So it is of no use to mention it. Our translators should try to think and express themselves in English as Englishmen do. In this way, and only in this way can we improve our English competency.

Some of our compilers do not understand the real meanings of abstract work, they often write many facts which are known to information users. Examples are as follows: "Strong seedlings should be raised from high-quality seeds," "Proper fertilization will facilitate the growth of bamboo shoots," "A deep, fertile soil layer is better for bamboo growth," "Bamboos are grasses from the family Graminae." As our readers are educated professionals, they are very well acquainted with such common knowledge. Abstracts containing such ABCs are not informative for them. Our abstracts should be a source of information, not a textbook. Therefore such sentences should be deleted from *Bamboo Abstracts*.

Another question is how to indicate the geographical positions and seasons clearly and scientifically in English for foreign readers. Most of our abstracts are taken from Chinese local periodicals. The geographical positions are generally stated in detail, for example, "Dongshan village, 10 kilometers north of Taipin township, Taihe county." These data are quite useful for local readers, but they mean nothing for foreign ones, because on publicly available maps in English the foreign readers can find only the names of counties, and if you do not mention in which province the counties are located, it will be very difficult for foreigners to find them. We decided to indicate the geographical positions by mentioning the names of counties and provinces in our future numbers. Local terms for seasons are also widely used in local periodicals, such as "the period of peach flood," which means March of the Chinese lunar calendar, "small sunny spring," which means October of the lunar calendar. All these expressions sound strange to foreigners, and we will put them in correctly in the future.

Misspellings form a very troublesome problem in our work. They occur as a result of the poor English knowledge of the operator and the inaccuracy of translators. We often

find "referred to" instead of "referred to," "aboretum" instead of "arboretum" on proof-sheets. An ordinary Chinese proof-reader can hardly detect all these misspellings. In order to correct them we adopted the computer program WordStar 2000, which helps to find and correct all the misspellings. This caused more conversion procedures of the computer files. On the suggestion of IDRC officials we bought a copy of CDS/ISIS for document retrieval, which is recommended by UNESCO and widely used in many countries. In order to develop the international exchange of computerized data we ought to convert our file into CDS/ISIS, but for the preparation of printing mats for Bamboo Abstracts we must use a program called FORES, which was developed by our own staff, and in addition, for checking spelling we use WordStar. Sometimes such conversion procedures cause systematic errata so we have to carry out these procedures very carefully. Our software specialists are trying to simplify all these procedures.

Most of the abstracts are translated into English from other languages by various translators, which leads to inconsistency of translation. The names of institutions, periodicals and authors are often translated variously. For example, the Subtropical Forestry Institute and the Research Institute of Subtropical Forestry are one and the same institute; the *Newsletter of Forest Diseases & Insect Pests* and the *Bulletin of Forest Pests* are the same periodical; Chu Yuting, Chu Yu Ting, Chu Yu-ting and Chu Yu-Ting are the same person. A bamboo species could be written as *Phyllostachys pubescens*, Ph. pubescens, P. pubescens. Such inconsistency has resulted in misunderstanding by readers and the miscalculation of computers. Once the inconsistently translated terms are used as subjects for indexing, the computer prints out subject indexes and author indexes in a mess. Obviously, the standardization of translation is important and urgently needed. We compiled a concise guide to translators, telling them how to translate specific names, how to express the units of measure, and how to create abbreviations. According to this guide all the names of Chinese authors will be ordered as English names, the family name will be printed in full, and only the initials of the given names will be used. We believe this will raise the efficiency of editorial work and decrease the errors in keyboard operation.

There are many Latin names of bamboo species, insects and diseases in abstracts such as *Phyllostachys*, *Schizostachyum*, *Nechouzeana*, *Oxytenanthera*, *Aurantihumerala*, and *Shibataea*. Our operators often make mistakes in their spelling. To prevent such mistakes we compiled a key glossary in the program. All the Latin names are shortened. The short form of *Oxytenanthera* is Ox., Sch. is for *Schizostachyum*, D. is for *Dendrocalamus*, and so on. In this way, the operator puts in the short form and the computer converts it into the long form automatically. This will lighten the operator's work load and eliminate his/her errors.

## CONCLUSION

The establishment of the database of bamboo literature and the publication of *Bamboo Abstracts* have improved the international cooperation of bamboo workers of all countries and increased their mutual understanding. We will make more efforts to fulfill our task better. As a newly-built small scale information institution, the Bamboo

Information Centre looks forward to developing links with all individuals and institutions dealing with bamboo cultivation, processing, utilization and research, and welcomes candid criticism and suggestions for the improvement of its work.