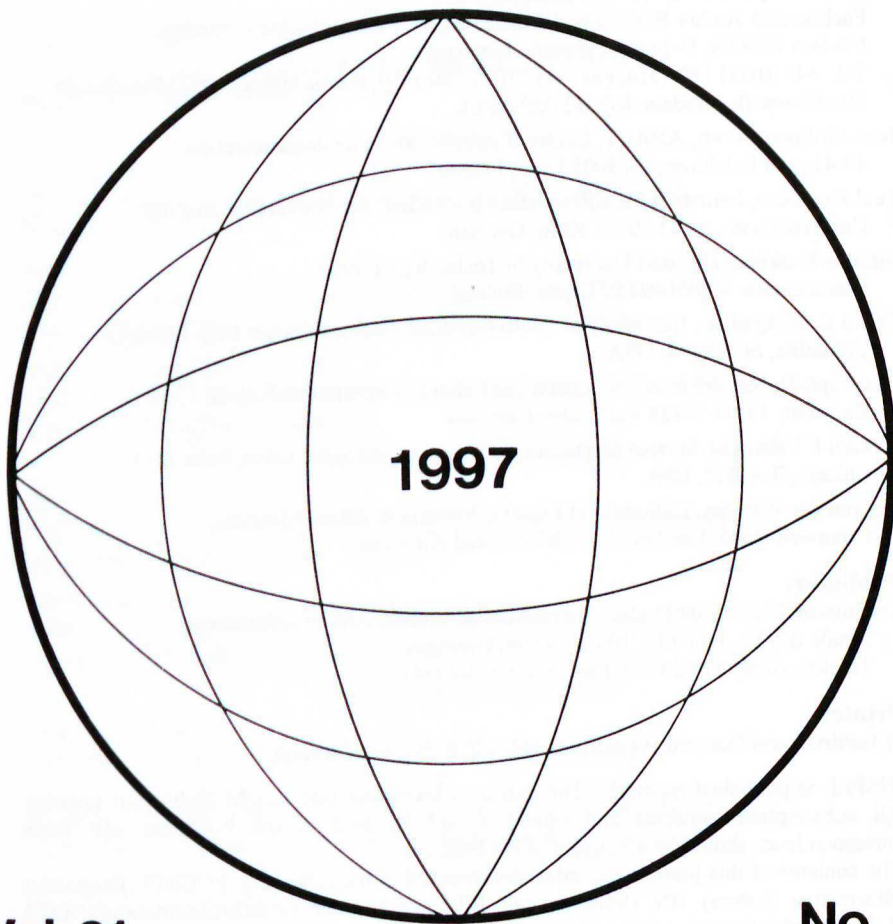


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*Medical Librarianship in China: China between International  
Cooperation and the Development of Information Networks*

Edited by Jean-Philippe Accart

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***MEDICAL LIBRARIANSHIP IN CHINA: CHINA BETWEEN  
INTERNATIONAL COOPERATION AND THE DEVELOP-  
MENT OF INFORMATION NETWORKS***

**Edited by Jean-Philippe Accart**

**INTRODUCTION**

**PRESENTATION OF THE SECTION OF BIOLOGICAL AND MEDICAL  
SCIENCES LIBRARIES OF IFLA**

The Section was set up in 1978 in order to respond to the growing needs of an international medical librarian community: IFLA, as a recognized international organization, gives permanency, continuity and is a strong link amongst librarians worldwide.

The Biomedical Section is one of the five sections that form the Division of Special Libraries within IFLA. The members must be nominated by Associations members of IFLA: the committee is elected every two years to promote the work of the Section. A representation from the World Health Organization and the US National Library of Medicine or other relevant bodies is included.

One of the main tasks of the Section is to be part of the organization of the International Congress of Medical Librarianship (ICML) every four years, choosing for example the location: the next 8th ICML will be held in London, in the year 2000. The provision of an annual program by the Section is an ongoing responsibility of the Section's Executive: it is a unique opportunity to learn about medical library developments in a particular or cultural context. It is a real help to develop library contacts.

The Section plays a strong role in maintaining contacts amongst medical librarians on a worldwide scale. The Sections's Newsletter is the link between the members and it is now on Internet, accessible through the IFLA server, IFLANET (<http://www.nlc-bnc.ca.ifla>).

In summary, belonging to the Section of Medical and Biological Sciences Libraries is an opportunity to participate to an open forum for international discussion and cooperation, to share specialised expertise and seek solutions to global library problems.

## EAST MEETS WEST IN MEDICAL LIBRARIANSHIP

The 62th Beijing IFLA Conference on August 1996 was a great moment for the Section of Biological and Medical Sciences. It was the first time that an IFLA meeting was held in China, and the idea of organizing an encounter between colleagues from East and West was a kind of challenge. And it was successful: eight papers were given during the Open Session Program under the main theme of *East meets West in Medical Librarianship* on several aspects of medicine, biotechnology and agriculture in China, with a topic on international cooperation between Canada and China and the access to biomedical Chinese medical information from the West. In conclusion, a point of view on professional perspectives was presented.

Then, in addition to the Open Sessions a workshop on *Traditional Chinese Medicine* gave a unique opportunity to Western colleagues to understand what represents tradition, medicine and cares coming the oldest ages.

As Chair of the Section, and on behalf of the Section of Biological and Medical Sciences, let me give a special thanks to our Chinese colleagues who gave us such a warm welcome and to all members who contributed with their usual efficiency to the work of our Section.

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*VIEWS FROM THE EAST*

**ESTABLISHMENT AND DEVELOPMENT OF CHINA  
MEDICAL LITERATURE RESOURCES SHARING  
NETWORK**

**By Wang Zhaoling**

**Present situation of Chinese Medical Libraries and Their Literature Resources**

According to the incomplete statistics, there are more than 20,000 medical libraries in China. Of which, nearly 100 are libraries of medical research institutes, 147 are those of medical and medicinal colleges, and the rest are those of hospitals. Libraries of medical and medicinal colleges as well as the national central library form the backbone of the medical libraries in China. According to the survey on its 141 membership libraries conducted by Association of Libraries of Chinese Medical and Medicinal Colleges (ALCMMC) in 1994, the present situations of Chinese medical libraries and their literature resources are as follows:

**a) General condition and state of service**

The total staff of the 141 membership libraries of ALCMMC reaches 2,972 people, who provide direct services to 550,000 readers; every staff member services an average of 185 readers. The total literature collected amounts to 28.340,000 volumes; each reader has an average of 52 volumes. The total of foreign journals collected reaches 7.080,000 volumes with more than 4.000 titles. All the libraries cover a total floor space of 410,000 square metres with 340,000 reading room seats; each reader can enjoy an average library space of 0,7 square metres and an average of 0,6 reading room seats. The total annual budget of all the libraries amounts to RMB 28.000,000 yuan. In 1994, the membership libraries of ALCMMC have 214 computers, 366 copy machines, more than 10 fax machines and 40 sets of CD-ROM retrieval equipment. But most of the above-mentioned equipment is owned by national and provincial key medical and medicinal colleges. 4.940,00 volumes are borrowed annually with an average of 9 volumes per reader; while 670,000 volumes are mutually borrowed among the

membership libraries with literature consultation of more than 100,000 items and literature photocopy of over 10,000,000 pages.

These libraries not only provide services within their own institutions, but also provide direct or indirect services to all the medical, medicinal and health practitioners in China. Bearing in mind the quantity mentioned above, they have a wide range of services and a lot of readers, and there is an evergrowing demand for photocopies. But the volumes per reader ratio is still low, most libraries are lacking modern equipment, and the means of services and communications are outdated.

#### b) Present situation of foreign journals

Journals provide an important means of spreading information. Therefore, the journal collection of a library can reflect its overall collection level. At present, there are more than 100,000 titles of journals which can be found in current catalogues worldwide. About 32,000 titles of foreign journals are imported to China, of which biomedical journals amount to around 6,200 titles. The foreign journals subscribed to by major Chinese medical and medicinal colleges and research institutes reach 4,500 titles. The following are major problems concerning foreign medical journals:

##### - Distribution imbalance

China has a vast territory, and there are great development differences in economy, culture, communications, science and technology among the different regions. Distribution imbalance exists in medical literature collections among libraries in different regions. According to the statistics on the 82 libraries involved in Union Catalogue of Foreign Biomedical Journals. Beijing, as the political, economic and cultural centre of China has the biggest collection of foreign medical journals with a total amount of more than 3,000 titles. Next are major cities in the development regions along the coast, such as Shanghai and Guangzhou, with subscription of about 2,000 titles each. Among the six administrative regions, major regional libraries in North China, East China and Middlesouth China generally subscribe to foreign medical journals, each to approx 700 titles. In comparison with these parts of the country, libraries in Northwest China, Southwest China and other remote regions have a poorer collection of foreign medical journals, where major libraries have an average subscription of about 400 titles, and small libraries with subscription of only a dozen of titles.

- Lack of journal titles and duplication of subscription to certain titles

For a long time, Chinese medical libraries have done things on their own behalf, and there has been little exchange and cooperation among the libraries. Lack of macro-control and coordination mechanisms resulted in a nationwide lack of biomedical journal titles and duplication of subscription to certain titles. There are dozens of copies for certain journal titles which are distributed in the coastal areas and major cities, while there is no copy in remote regions such as Ningxia, Qinghai and Tibet. In 1993, the total foreign medical journals subscribed to by the 118 membership libraries of ALCMMC amounted to 11,295 copies with only 3,012 titles. Many periodicals appear several times on subscription lists while many other important journals are completely left out. Due to this it is difficult to increase the overall number of titles nationwide.

- Nationwide decrease in medical literature collections due to the rising prices of publications

Recently, prices of books and journals have been increased both at home and abroad, especially subscription of foreign journals have risen at an annual rate of 15%-20%. The price rises result in rapid growth of the expenditure for ordering foreign journals. The annual budget of each library not only has been increased with price rises, but also has experienced a decrease. Many libraries have been unable to keep their collections as they had. Before 1988, the foreign medical journal collection of the Library of the Chinese Academy of Medical Sciences was able to satisfy 80% of the demands for original medical literature from readers who retrieved the foreign literature information by means of computer connection or CD-ROMs; in 1994, the percentage dropped to 22.6% while the foreign medical journal collections of the 104 all member libraries of the ALCMMC together could only meet 56.6% of the readers demands for the originals. This reflects that the medical literature collections have diminished. The only way to escape this predicament is to strengthen the cooperation and realize the mutual collection resources sharing among the libraries.

## **The Coordinate Network Organization of Chinese Medical Libraries**

Most Chinese medical libraries were established in the 1950s, each of which is independent and only provides services to its own institution. After the establishment of the Peoples Republic of China, the government devoted great attention to the library undertaking. It promulgated a series of policies and set up a special administration organ. The measures brought about rapid development of the Chinese library undertaking. Since 1978, especially the 1980s, the successive establishments of the organs such as the China Society for Library Science. National Committee on Library and Information Service of University as well as



some other national/local library coordination organizations have propelled the Chinese library undertaking forward. In 1981, China resumed its legal seat at the IFLA, which enhanced the extensive cooperation and exchange between the Chinese libraries and their counterparts worldwide.

In 1978, the Ministry of Public Health, Peoples Republic of China sponsored the first National Conference of Medical Libraries, formulated Development Plan for National Medical Libraries (draft) and proposed to establish a medical library coordination network. By six years' endeavors, the ALCMMC was established in 1985, under the support of the Ministry of Public Health. The ALCMMC is an academic coordinate organization, which gets the support of the Education Department of the Ministry of Public Health, Peoples Republic of China.

In order to promote the exchange and cooperation among the member libraries about twenty activities are organized by the ALCMMC all over the country per annum. In particular it has played an important role in such aspects as personnel training, academic exchange, interlibrary cooperation, international contacts, application of new technologies in library and literature resources sharing, etc. The effective activities of the ALCMMC laid a good foundation for the establishment of medical literature resources sharing network of three levels which are national, regional and provincial levels.

### **Construction of Chinese Medical Literature Resources Sharing Network**

During the late 1970s and the early 1980s, the concept of Literature Resources Sharing began to attract the attention of the Chinese medical library community. In 1978, the Chinese medical community proposed to set up a medical information network to accelerate the modernization of medical information work, and establish a modern medical central library network to achieve the goal of making medical literature computer retrieval network available. By 1985, the Institute of Medical Information of the Chinese Academy of Medical Sciences had successfully set up the publication system for medical literature retrieval with Chinese characteristics, consisting of the Catalogue of Chinese Scientific and Technological Literature (Medical Science), the Catalogue of Foreign Scientific and Technological Literature (Medical Science), the Foreign Medical Science (series), and the China Medical Abstracts (series). In order to create favourable conditions for literature resources sharing, the ALCMMC attaches great importance to editing union catalogues of subscribed and collected foreign biomedical journals, organizing surveys on national literature resources and coordinating subscription to foreign journals, while carrying out extensive academic exchange and coordinate activities. In 1987, the Ministry of Public

Health invested RMB 3.6 million yuan to introduce the database of US MEDLARS and establish the MEDLARS Retrieval Service Center at the Institute of Medical Information of the Chinese Academy of Medical Sciences. The establishment of the Chinese MEDLARS Centre and the purchases of MEDLINE CD-ROMs by major Chinese medical libraries helped solve the problems facing the users demands for retrieving foreign secondary documents. In 1989, the State Science and Technology Commission aided with RMB 0.5 million yuan to develop the Chinese Medical Literature Analysis and Retrieval System, which will include all the Chinese biomedical journals of more than 600 titles. Its operation will help supply the users demands for retrieving secondary documents of domestic journals. But the readers higher demands for originals or copies of medical literature can only be met by literature resources sharing. Based on the survey and analysis on the Chinese medical libraries and literature resources sharing of overseas medical libraries conducted by senior medical librarians both at home and abroad under the organization of the Education Department of the Ministry of Public Health, a Plan on Chinese Medical Literature Resources Sharing Network was proposed. In 1991, at the Seminar on Medical Literature Sharing jointly sponsored by the Education Department and the ALCMMC, the plan was passed, which brought about the establishment of the leading group of national medical literature resources sharing project and the corresponding project groups for hardware and software, all under the leadership of the Education Department of the Ministry of Public Health. The ALCMMC was designed to be in charge of the implementation of the plan.

By three years endeavor, the three-levels national medical literature resources sharing network has begun to operate and will gradually realize management modernization. By now, the plan on Chinese medical literature resources sharing network has achieved its goal for the first phase. Its plan for the year of 1993-1997 aims to further improve and strengthen the existing network by means of computers and modern communication equipment, manage to establish, within three years, the four-levels network with more rational literature distribution, better service functions and more benefited institutions, and progressively enable, within five years, the terminal users including those who are in the outlying districts and minority nationality regions to freely retrieve and get medical literature by network.

### **Strengthening the Construction of Literature Resources and Expediting the Development of Medical Information Network**

A modern medical literature information network system involves an advanced literature retrieval system, a powerful literature support system and a developed

communication network. The functions of current Chinese medical information network system are: users can get secondary document by CD-ROMs or medical literature online retrieval network, and primary document by literature resources sharing network. If users can not get the originals or copies of the literature they need, the literature information they retrieve will turn valueless. Therefore I think that China should draw on overseas successful experience in literature resources sharing and information network services, strengthen international cooperation as well as macrocontrol and planning on network establishment, support literature collections, and expedite the construction and development of medical literature information networks. My proposals are as follows:

- a) To formulate an overall development plan on the Chinese medical literature information network, set the goals of national network construction, and define the focal points and progress of each phase.
- b) To draw up regulations on the Chinese medical literature information network, and acts on literature resources sharing, etc., and set rights, duties and work standards of network centres at various levels.
- c) To budget with serious consideration of inflation factors, and provide the national central library with special financial support for their resources construction.
- d) To bring the medical literature information network into line with the national/local government plans on medicine and health.

At present, a project of the ALCMMC on network development is being carrying out. The establishment of CMINET in the 11 key medical universities of China indicate that the undertaking of Chinese medical information has entered a new stage.

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***EAST MEETS WEST***

**THE SELECTING AND TRAINING OF SUCCESSORS FOR  
MEDICAL LIBRARY DIRECTORS IN CHINA**

**By Dizhi Xiong**

**Historical Perspective**

Modern medical librarianship began in China in the early years of this century. About twenty libraries are very influential in the medical community, because they are very well staffed and equipped. Careful and thoughtful selection of the leaders has been a decisive factor for their development. Up to the mid-eighties, most of the directors of these libraries had medical degrees. Less than one third of them were graduated from general university library schools in the thirties or later. Through decades of experience, Chinese administrators at larger medical institutions reached the consensus that a competent medical library director should have a satisfactory background in medicine, foreign languages (English in particular), and an improved knowledge of library management.<sup>1</sup> These have been regarded as routine criteria for selecting directors at medical school libraries.

By the late eighties, library directors at 17 national medical universities and academies were graduated from medical schools. Some changes occurred in the nineties. In 1995, three directors had background in humanities, while 14 held medical degrees.

**The Selecting of Library Directors at Larger Medical Settings from the Eighties**

The transition began in the mid-eighties when college librarians were being to deliver more quality services for the faculty, libraries were beginning computerization, and many senior directors were to retire. The selection of successful candidates became crucial for the development of medical librarianship. The choices were as follows:

1. Some medical professors were persuaded to take the position, or at least to be a concurrent director with an assistant one accompanied;

2. More managerial division heads, such as the managers for teaching or research affairs, were assigned as library directors.
3. A few experienced successors of middle age were selected from within.
4. A few young librarians with background in medicine or medical information science who had been working in the library were appointed to associate directors from late eighties on.
5. A small number of associate directors were invited from larger institutions to smaller ones to be the full directors.

### **Discussion: Advantages vs. Disadvantages**

In a developing country where libraries must strengthen their functions of instruction and information, and they are relatively poorly staffed, not only senior professional „transplantation“ is necessary, but also inevitable. As medical library education in China is just in its childhood<sup>2</sup> and the administrators do not intend to give up their criteria, most of the leading members will be imported for a certain period of time. Obvious achievements have been made in many influential libraries since the new directors came. Their contributions are:

1. raising the visibility of the library thus gaining more opportunities for the library both on the campus and outside;
2. accelerating the development of the staff;
3. widening the horizon of the librarians on staff;
4. enhancing the automation of library management;
5. improving the information services in particular;
6. bettering the academic atmosphere of the library.

A farsighted approach is to appoint young librarians with medical subject backgrounds to the leading positions. In the early eighties, administrators at some medical schools, foreseeing various kinds of possibilities, assigned medical graduates to their affiliated libraries. They took advanced courses in library science, foreign language medical literature and retrieval, and then worked in the library. Gradually some devoted young people became experienced and were appointed to the leading positions, though many left the library for other jobs. At some medium sized medical schools young graduates from medical library schools are now assistant directors. These promising young people have displayed their dynamic and aggressive spirit.

The device factor for such a choice is a foresighted administrator and tutor capable of training the candidate. As a rule, successful candidates cannot grow up spontaneously. In the presence of colleagues of the same age or even older, these young directors are facing problems: how to establish their image and credibility?

how to organize team work without jealousy? As is the Chinese tradition, age is both their potential and shortcoming. They must find their optimum solution.

Transplanting directors from larger libraries may be feasible in some speedily progressing districts, such as Hainan and Shenzhen. In less attractive provinces, it may be problematic.

## **The Future**

In the era when the information superhighway is rapidly advancing, the senior administrators at Chinese medical libraries will be increasingly specialized. Not only should they have a better knowledge of health sciences, foreign languages, and library management, but they must also be skillful in information technology. The requirements of a competent medical library director will be increasingly sophisticated.

Authorities at medical schools are more and more convinced by the trend, that they will find it more difficult to persuade a professor or managerial head to accept a new position which will be even more complicated to control. The needs for successors will be met mainly in two ways:

### **Supplementary Training Courses**

In the eighties, two national courses for training teachers of medical bibliographic instruction were organized in Nanjing and Shenyang respectively<sup>3</sup>. Consecutive courses for training librarians with subject background were held later. These were all successful. Some of the trainees became leading library practitioners later. Past experience is of value for the future, though training topics will vary with time. Larger libraries with more qualified staff have played their educational role and will contribute more to the training of future directors. On-the-job training and the exchange of interns are also of assistance, which we have experienced on the basis of mutual agreement.

### **The Required Personality of a Young Successor**

Directors in the future will be younger. Problems facing them are similar to those faced by their predecessors. As compared with the older generation in China, because of the open policy and high technology, there are and will be more competition and temptation for the young. As we know, discrepancies and conflicts may produce a poor image. An empty boaster may damage a highly modernized library, whereas a practical director works miracles. We must learn useful lessons from those tragedies. Devotion, fairness, compatibility, and practicality are values necessary for all directors old or young at home or abroad.

We must re-emphasize their importance. These should be our guidelines in selecting young successors.

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# **A DECADE OF PARTNERSHIP IN LIBRARY EDUCATION BETWEEN MCGILL UNIVERSITY AND CHINA MEDICAL UNIVERSITY**

**By Frances Groen**

## **Introduction**

Since its beginning in 1986 the cooperative program between China Medical University and its Library and McGill University and its Health Sciences Library has been characterized by commitment to a sustained project and concern for the mutual benefits of each of the libraries. Staff at both institutions were equally committed to the personal enrichment of their colleagues, and the results of this ten year cooperation have been beneficial for all concerned.

## **Development of the Project**

In 1986, an exchange program between China Medical University (CMU) and McGill University was established with the following objectives:

1. an exchange of library and other university publications;
2. the exchange of photocopies of requested inter-library loans, provided that national library resources are unable to provide the materials needed;
3. cooperation in responding to difficult reference questions;
4. cooperation in the selection and acquisition of Canadian and Chinese medical publications and in completing collections,
5. the exchange of information of mutual interest such as library statistics and cooperative research projects;
6. the provision of training at the McGill Health Sciences library to staff of the library of the China Medical University;
7. further visits by McGill Health Sciences Library staff to the China Medical University.

Dr. Xiong Dizhi visited McGill University in the spring of 1988. Medline had very recently become available on CD-ROM and was a priority for Mr. Xiong, as were issues of professional development, staff evaluation, and medical library



education. Most importantly, Mr. Xiong was able to guide staff of the Health Sciences Library regarding the next important stage of the project, the training at the McGill Health Sciences Library of interns from China Medical University. The two selected interns arrived together in October, 1988 and followed parallel but somewhat independent paths. Mr. Liu, Shuchun, Assistant Acquisitions Head at CMU, wished to develop his competency in the acquisition of monographs and serials and in general microcomputer applications in libraries. Mrs. Cheng, Yumin, Head of Reference, arrived with an excellent knowledge of MeSH headings, and spent much of her three months in acquiring skills in MEDLINE searching on CD-ROM. A highlight of her visit occurred when the President of Beijing Medical University visited McGill University, and Mrs. Cheng was able to demonstrate this technology to him.

In August, 1989, David Crawford, Project Director at McGill, visited China Medical University to review the success of Mrs. Cheng and Mr. Liu and to lecture to students of the recently established Faculty of Medical Library and Information Science at CMU. In the fall of 1990, the Computer Services Librarian, Angella Lambrou spent one month at China Medical University. Miss Lambrou concentrated on the theory of online searching and CD-ROM technology with emphasis on practical sessions. In the spring 1993, one of CMU's young teachers, Zhao, Yuhong, visited McGill for a three month internship. In fall 1993 Anneli Lukka, cataloguing supervisor in the Health Sciences Library of McGill University taught cataloguing. During all these visits personal friendships as well as professional expertise were developed.

During the author's two previous visits to China, in 1991 and 1994, I have been involved in teaching the students in the medical library program and the staff of the library. Seminars and lectures were given to staff and students on collection development, history of medicine, medical library management and resource sharing. The staff of the Library were particularly interested in performance appraisal, a decidedly North American phenomenon, and related management issues. All library staff and all students in the library studies program were able to attend most courses.

### **Medical Library Education contrasted**

During my first visit, a unique opportunity was given to me by Dr. Xiong when he arranged a colloquium with the Deans of the Medical Library programs in Northeast China. This invaluable learning experience provided the basis for the second part of this paper in which education for medical librarianship in China and in North America are contrasted.

Education for medical librarianship in North America and in China has taken a different road. This may be attributed to the absence of a hierarchy of the professions in China where the medical librarian is not necessarily viewed as holding a less prestigious position than the physician. This contrast may also be attributed to the lack of significant differences in salaries between members of these professions in China. For whatever reason, social, economic or cultural, the programs are in market contrast. North American medical librarianship has developed historically within the overall context of graduate education for librarianship in general. It has traditionally taken the form of one or several courses in medical librarianship and medical bibliography offered as an optional course in the masters program. Historically the view has been that specialization could only be undertaken once a basic, general education in librarianship had been obtained. In contrast, the Chinese program requires basic medical training before the student embarks on training in medical librarianship; the North American practice requires basic education in library and information science, before proceeding with training in medical librarianship.

### **The Changing Role of the Medical Librarian**

Progress in the biomedical sciences and advancements in information technology have combined to re-define the role of the medical librarian in North America. Reform in the medical curriculum in recognition of a new philosophy of cognition based upon problem solving, rather than the accumulation of facts has also had an impact on the medical library. The librarian is becoming a part of the medical curriculum through an increasing involvement in the education of students in information retrieval and the management and evaluation of medical information. Formal teaching is a comparatively new role for the medical librarian, but the need for this expanded role is growing as more sophisticated medical information systems are becoming available.

The experience in the People's Republic of China is both similar and different. The rapid advances in scientific medicine and technology have not had the same accelerated impact upon the Chinese medical librarians. Yet, with the greater and ever-increasing exchange between Western and Chinese health and information professionals and the development of a Chinese Internet, the development of technological applications in the library are accelerated. Most importantly, the implementation of a coordinated regional medical library program for all China is resulting in increased cooperation and the need for more technology to support information sharing amongst medical libraries. Any improvement in the telecommunications infrastructure is likely to impact on the delivery of medical information in future. The availability of a well-trained cadre of highly skilled

medical librarians, educated in both medicine and information science will provide a rich reservoir of skilled professional talent for Chinese medical librarianship, as these new graduates assume leadership roles in the Chinese medical library of the future.

Chinese medical librarianship provides the profession with insight into an emerging outlet for the knowledge and skills of medical librarians. With their skills in medicine and computers as well as their knowledge of foreign languages, in particular, English, graduates of programs in medical librarianship are assuming new roles in medical publishing, as medical editors and in research. Their indexing knowledge is an added contribution to their work in medical publishing. In the medical librarianship programs in Northeast China, in 1995, six recent graduates from China Medical University, assumed roles in this area, principally as junior medical editors. Editors of medical journals are invited to teach students the basics of medical editing as preparation for this specialization.

### **Evaluation and Conclusion**

The China Medical University-McGill University joint venture has proven successful in the effectiveness of human resources development, project continuity, transfer of information technology and the vital strengthening of library collections and services. In particular, the following achievements are identified.

1. Staff members of both institutions have been exposed to new ideas through the exchange of staff.
2. China Medical University was the first Chinese medical library to provide CD-ROM Medline. McGill advised on a CD-ROM vendor, training, and file mounting. Joint purchasing occurs through the two institutions.
3. McGill staff have been exposed to a different culture and have had the chance to learn to teach in a new environment.
4. Publication exchange has provided McGill with useful medical and history of medicine publications and China Medical University has received many gifts of missing serials volumes from McGill.

The „twinning“ of libraries is familiar and one reason twinning is successful is the personal commitment of people. Staff at both China Medical University and McGill have wanted this program to be successful. They have devoted large amounts of personal energy to making it succeed.

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## **ACCESS TO BIOMEDICAL INFORMATION FROM THE EAST IN THE U.S. NATIONAL LIBRARY OF MEDICINE'S DATABASES**

**By Lois Ann Colaianni**

The preservation of the health and the prevention or cure of disease is a world-wide concern. Health professionals and researchers throughout the world should have access to the research findings, information about the occurrence and control of disease, and the delivery of health care in every country. In order to obtain this information it is essential that the publications containing such information be readily accessible. This requires bibliographic information about the publications and their contents, a method to acquire them, and a process to obtain the information in response to a need. It is the role of health sciences librarians to help researchers and health professionals to obtain this information. It is also the role of health sciences librarians in each country to ensure the systems whereby health professionals and researchers in other parts of the world may gain access to the information published in their country. The National Library of Medicine (NLM) is the world's largest medical research library with more than 5,1 million items in over 70 languages. There are over 665,000 monographs and 74,000 serial titles in the collection, from the eleventh century to date. NLM attempts to select, acquire, preserve, and provide access to a comprehensive collection of the scholarly biomedical literature from all over the world. A comprehensive collection is one in which the library endeavors to include all significant works of recorded knowledge in all applicable languages, for a necessarily defined and limited field. Biomedical is defined as pertaining to health care, to the practice of the science and art of medicine broadly conceived, and to those branches of the life sciences which are fundamental to that science and art. Scholarly is defined as resulting from professional study or research. The intent is to ensure that the collection represents the intellectual content and diversity of the world's biomedical literature, although it cannot collect all that is published in biomedicine, even all that is published in the United States. Access to the NLM collection is provided through bibliographic databases, CATLINE for monographs and SERLINE for serials. Access to the information content of the articles in journals is provided through the MEDLINE database.

Important biomedical literature is published in Asia. This purpose of this paper is to review the number of records in the National Library of Medicine's databases for literature published in a few Asian countries. The first section is an overview of the amount of biomedical literature in the collection from four Asian countries. The second section will focus on the journal titles currently published in China, indicating the percentage acquired by NLM and the percent indexed in MEDLINE. The third and final section will contain some observations and recommendations arising from this study.

## **Section 1 - Overview**

The following table shows the number of monograph and journal titles in the NLM collection from China, Japan, Korea, and Taiwan for which there are bibliographic records in CATLINE.

<b>Country</b>	<b>Monographs</b>	<b>Journal Titles</b>	<b>Current Journal Titles</b>
China	8,183	697	422
Japan	21,831	3,397	1,584
Korea	1,252	377	288
Taiwan	385	130	58

Recently a member of the staff reviewed the Japanese acquisitions and was pleasantly surprised to find that 1,476 of the current serials are published in Japan; the Japanese serial collection is the fourth largest, ranking after the U.S. (5,203), the United Kingdom (1,607), and Germany (1,448).

## **Section 2 - Collection of journal titles published in China**

In order to assess the Library's collection it is necessary to determine the number of scholarly biomedical journals published in China. This proved to be a difficult task, especially for someone who is unfamiliar with the Chinese language. Unfortunately, the commercial dealers indicated that they knew of no list that would provide an accurate listing in English of the current journals published in China. The Institute of Medical Informatics at the Chinese Academy of Medical Sciences indicated that about 800 biomedical titles are published in China; they plan to index 600 of these. It was obtained a list of 165 titles (LIST 1) which the Center thought were the most important for NLM to index. Dr. Dizhi Xiong provided a list of 109 titles (LIST 2) which are published by the Chinese Medical Association and the national medical universities. A third list of 174 titles was obtained from the China International Book Trading Corporation. These three lists along with titles acquired for the NLM collection were used to develop a list

of 459 biomedical journals currently published in China. Titles were matched by ISSN numbers to avoid duplicate entries caused by discrepancies in the formation of the English title or the transliteration differences.

The National Library of Medicine currently subscribes to or has on order 352 (76,7%) of the 459 biomedical journal titles identified in this study. The following table indicates the number and percent of known biomedical journal titles published in China acquired by the Library.

NLM	LIST 1	LIST 2	LIST 3	NO LIST
Acquired	109 (96%)	90 (83%)	109 (62%)	169 (91%)
Not acquired	5 ( 4%)	19 (17%)	67 (38%)	17 ( 9%)
<b>TOTAL</b>	<b>114</b>	<b>109</b>	<b>176</b>	<b>186</b>

The next table shows the percentage of these titles which are indexed for MEDLINE.

NLM	LIST 1	LIST 2	LIST 3	NO LIST	TOTAL
Indexed	24 (21%)	25 (23%)	23 (13%)	15 ( 8%)	47 (10%)
Not indexed	90 (79%)	84 (77%)	153 (87%)	171 (92%)	412 (90%)

The Literature Selection Technical Review Committee is the committee chartered by the National Institutes of Health to advise the Library on which titles to index. The committee reviews each biomedical titles published in the world and scores each on a scale of 0 to 5, with 5 being the highest. A score of 4 or higher is needed for a title to be selected for indexing. Since 1988 eighty-four journal titles published in China have been reviewed by the Literature Selection Technical Review Committee; eighteen (21%) of the titles have received scores of 4 or higher. Overall, only 21% of all titles reviewed receive a score of 4 or greater.

### Section 3 - Observations and Recommendations

After reviewing the bibliographic records for the journal titles and the coverage in the Library's collection there are some important observations:

1. The National Library of Medicine's bibliographic records for these titles are often incomplete missing the date when the title began publishing and information about title changes or interruptions in the publication schedule.

2. There are many gaps in holdings. A health professional in the United States cannot be assured of finding the specific issue of a Chinese title in the Library despite the fact that NLM has ordered and presumably acquired the title.
3. Based on the SERLINE records, with the exception of a small number of titles, NLM is the only biomedical library in the U.S. reporting the acquisition of these journals.
4. A little over one fifth (21,5%) of the titles in this study had no ISSN. In a number of cases there was no ISSN printed on the actual journal issues. The absence of an ISSN presents problems for serials librarians since many use this number to control their serial subscriptions. This is especially important where the language of publication must be transliterated for use in most libraries outside of Asia and the transliteration schemes vary. Without an ISSN it is difficult to distinguish reliably between titles.

These observations lead me to make following recommendations:

1. Publishers of biomedical journals and other serials in China are urged to ensure that they obtain an ISSN for each title they publish and publish the ISSN in Arabic numerals prominently on each issue.
2. NLM needs to develop a working relationship with an organization in China which will assist the NLM in obtaining and correcting the bibliographic data for journal titles published in China, ensuring that the data is updated regularly for title changes, new titles, and titles which cease publication.
3. It seems important to develop a Chinese equivalent to MEDLINE to provide international access to the content of articles in more journals published in China. NLM will continue to review and select those titles its advisors believe are of the highest quality and of the most importance to the international audience for indexing in MEDLINE. Many more journals are published in China and many should be indexed. I believe that there are plans to do this in Chinese. This project should be supported. It is also important that such a database be made available in English so the international audience can access the scholarly record published in China. In addition, to make this database useful outside of China, English language abstracts for each article should be included.
4. It is important that copies of issues of Chinese journals be available for consultation outside China. Although efficient document delivery systems can be established between libraries in China and those in other countries and perhaps more titles will be available electronically, the contents of libraries



have been periodically destroyed over the centuries through wide-scale natural disasters. Thus it is important that the informational content be preserved in more than one location.

In this paper I have tried to examine the availability of the current scholarly record of biomedicine from China in the National Library of Medicine and to point out some of the observations I made in accumulating the data for this study. It is important that access to the information in this literature be improved for there is much to be learned from the research and clinical literature from this vast, important country. Implementing the recommendations in this paper would help ensure access to China's biomedical scholarly record for scholars throughout the world now and for centuries to come.

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## ***AGRICULTURE AND BIOTECHNOLOGY***

### **THE EFFECT AND EXPERIENCE OF CHINESE LIBRARIES IN THE SERVICE FOR AGRICULTURAL DEVELOPMENT**

**By Zhao Huaying**

Agriculture is the foundation of national economy. Matters concerning agriculture, rural areas and peasants have always been fundamental issues related to the overall political and economical situations in China. Therefore, libraries' service for agricultural development is of great significance and a very glorious task.

Libraries in China have rendered great contribution to the promotion of a sustained and stable development of agriculture and rural economy in China, obtained significant benefits, and accumulated rich experience in the service for agricultural development.

Libraries' service for agricultural development is of multi-level and multi-aspect in nature. To sum up, it includes three major aspects:

#### **A. Serve governmental decision-making departments at various levels**

Decision made by governmental decision-making departments has decisive influence on the development of agriculture. The major fluctuations, in history, of agriculture production in China had been caused by decision-making mistakes. Scientific and democratic decisions made by leaders at various levels must be based on ample and reliable information. Service provided by libraries and information centers in China for decision-makers at various levels can be broadly broken into three levels:

##### **1. Service for state macro decision-making.**

In other words, such service provides both foreign and domestic strategic and predictive research reports for the formulation of the long-term agricultural development plan, unfolding and utilization of agricultural natural resources, adjustment of rural industrial structure, reform of agricultural administration systems, and export in foreign trade.

## 2. Service for decision-making in regional agricultural development.

In other words, such service sponsors investigations and studies and provides constructive research reports on the basis of the decision-making needs of the local agricultural departments. All these investigations and studies have been adopted by the city leaders as the important scientific basis in formulating agricultural development plans for the Eighth Five-Year Plan.

## 3. Service for leaders at basic units and various departments in micro decision-making.

In other words, agricultural libraries and information institutions provide consulting service for local leaders and department administrators in the formulation of agricultural development plans, screening of research, extension and introduction projects, decisions made on the development and utilization of agricultural products, putting-into-operation and change-of-production-line of township enterprises.

## **B. Serve agricultural research and education, and continuously enhance agricultural development**

For many years, libraries have taken the initiative in providing services of different forms for agricultural research and education by utilizing their superiority of information resources, personnel, library location and service equipment. According to statistics of 1990 provided by the State Statistic Bureau, libraries in China had supported 38,000 agricultural researchers of 1,120 agricultural research institutions who were engaged in 15,111 research projects. In 1990, a total number of 2,051 research projects had won prizes. In 1991, libraries in China had supported teaching work for 69,496 university teaching staff of 62 agricultural colleges and universities which had a total number of 113,728 enrolled students, of whom, 34,034 students graduated from the agricultural colleges and universities in the same year. In addition, libraries in China had supported the teaching work of 44,221 teachers of 372 agricultural vocational schools which had a total number of enrolled 190,091 students, of whom 53,239 graduated from the agricultural vocational schools in 1991.

In recent years, there are, on average, a total number of 30,000 scientific papers and about 1,200 agricultural books published every year. The above-mentioned scientific research achievements and man power have greatly enhanced the reserved strength of agricultural economic development. These achievements could not have been obtained without the services provided by libraries.

In addition to document lending and photo-copying, the major forms of services provided by libraries for agricultural research and education include the following:

1. Establishing domestic databases, introduce foreign databases and provide information services of duplication check of new research projects and research achievement verification.

China starts about 4,000 new agricultural research projects every year. Key research projects, in particular, must be established on the basis of ample information. In order to support agricultural research and education, agricultural libraries in China have established about 100 databases. Comprehensive databases include „Chinese Agricultural Literature Database“, „Chinese Comprehensive Database of Animal Husbandry“, etc. Special topic databases include „Database of Sesame“, „Database of Tea“, „Database of Edible Fungi“, etc. China also introduced the three major agricultural databases from abroad: „CABI Abstract“, „AGRIS“, and „AGRICOLA“, in the form of magnetic tapes and CD-ROM disks. On the basis of these foreign and domestically-produced databases, duplication check of new research projects have been unfolded in combination of manual checking, computer searching and remote on-line information searching. Such service has not only avoided the start of duplicated new research projects, but also provided ample scientific basis for the formulation of research plans, determination of research programs and verification of import technology.

China completes about 4,000 agricultural research projects every year. Research results verification has become a necessary step in agricultural scientific research administration. By using both foreign and domestic databases and making full use of the manpower superiority, library and information institutions provide services in duplication check of new projects in a big way, and provide proven materials for research results identification. For example, SDIC/CAAS (Sciencetech Documentation and Information Centre/Chinese Academy of Agricultural Sciences) has completed duplication check for about 1000 new projects since 1981. In addition, information institutes of Sichuan Academy of Agricultural Sciences, Liaoning Academy of Agricultural Sciences, and Jiangsu Academy of Agricultural Sciences and libraries of some agricultural universities have also obtained significant achievements in duplication check for new projects.

2. Trail key research topics and provide SDI services.

Local library and information institutions provide service of selective dissemination of information (SDI) by selecting, in general, local key projects. For example, the Library of Human Academy of Agricultural Sciences has unfolded

SDI service for the research project of „Hybrid Rice“; the Information Institute of Heilongjiang Academy of Agricultural Sciences has provided SDI service for the research project of „Nitrogen-fixation of Soybeans“.

3. Provide services for the update of agricultural teaching materials and improve the quality of text-books.

Under the support of the administrative department, the Library of the Beijing Agricultural University has established the „Centre for Foreign Text-books of Agricultural Science and Technology“ which imports excellent teaching materials of famous universities in foreign countries and disseminates such information of agricultural universities in China through lending, duplication, publishing „New Book Newsletter“ and reviewing new text-books, with an objective of providing services for the construction of agricultural teaching materials throughout the country<sup>1</sup>.

4. Provide user training in a big way to enhance the information consciousness and information utilization capability of users.

According to statistics, the number of agricultural information users in China has exceeded 300 million, including both current and potential users. In order to learn about the quality of the users, a sampling survey of Chinese agricultural research scientists had been conducted in 1991 by SDIC/CAAS. The results of the survey showed that 28.8% of the users had not received any assistance from library and information institutions while 42.9% of them acquired information via personal communication. Those who had made use of standards and patent accounted only for 5% and 6% respectively, while 30.4% of the user didn't know how to use or had never used references or retrieval tools; and 71.5% of them had not made use of computerized information retrieval systems, and so on. All these figures reflect that the task of user training for agricultural information users in China is very hard<sup>2</sup>.

In order to enhance the information consciousness of user and improve document retrieval and utilization capability, every library is now undertaking continuous education of users at their posts.

The major forms of user training in agricultural universities is to give the course of „Agricultural Document Retrieval and Utilization“. Since 1983, 48 agricultural and forestry universities have included the course of „Agricultural Document Retrieval and Utilization“. Since 1983, 48 agricultural and forestry universities have included the course of „Agricultural Document Retrieval and Utilization“ in their curriculum. Some of the agricultural vocational schools have also given such courses or run such workshops. The popularization of the above-mentioned

courses, has not only turned libraries into one of the educational departments which undertake information education, but also greatly improved the ability of students in information retrieval and utilization. In so doing, library journals will be made full use of and this will have great impact of the future development of students after their graduation.

**C. Promote the integration of economic development with science and technology, strive to transfer scientific and technological research achievements into productivity, and provide services for the overall rejuvenation of rural economy.**

The followings are the major forms of library services for an overall rejuvenation of rural economy:

1. Establishing information networks, publish information journals and provide consulting service

During the transition period toward market economy, peasants are eager to acquire various kinds of wealth-acquiring information. Agricultural library and information institutions of many provinces (municipalities and autonomous regions) have, one after another, established agricultural information service networks, published network journals, and provided multi-direction information services.

2. Participate in scientific markets, science fairs and information release conferences organized by the government and disseminate information of agricultural rejuvenation

In order to vitalize economy, government departments have broken the situation of ill-informed, often organize science markets, fairs and information release conferences which have been actively participated by libraries.

3. Coordinate with „Spark Plan“, „Bumper Harvest Plan“ and „Agricultural Regional Development Plan“, participate in aiding the poor areas with scientific and technological knowledge, and provide services for aid peasants in old revolutionary base areas, minority areas, border areas and poor areas to acquire wealth

In China, agricultural technical extension in general has been implemented in the form of „projects“. However, it takes several gradual steps before a project plan with a certain objective is formulated comes into being.

Agricultural economic development is at a state of imbalance in China. East China and coastal areas have very fast economic development and are at the

beginning of reaching the level of being well-off, while China and Western China areas have fairly slow economic development, especially the poor areas such as the old revolutionary base areas, deep mountain areas, minority areas and border areas. In order to aid these areas to get rid of poverty both economically and culturally, the State government has organized research and educational institutions to send research staff and teachers to go to these poor areas to take part in an „assistance campaign“, help the poor areas to get rid of poverty by taking with them their research achievements and advanced technology, assisting them in formulating development plans, transferring advanced techniques and offering personnel training.

Libraries of various regions take an active part in providing services for the poor areas. For example, the Library of Hebei Agricultural University has taken part in the service for the development of Taihang Mountain Area while the Library of Central China Agricultural University has taken part in the services for the development of Dabieshan Mountain Area. They provide documents to the people who go to the poor areas to assist the local peasants to get rid of poverty, provide SDI services, compile documents of practical techniques, set up information liaison stations, sponsor material exhibitions, run technical training workshop and select and provide projects which need less investment, have low risk and high-profit, and are fast in obtaining returns for the township enterprises in these poor areas. In so doing, they contribute their efforts in the campaign of assisting the poor areas with science and technology knowledge.

#### 4. Provide audio-visual services and lead peasants to acquire wealth

Audio-visual information products are especially appropriate for the needs of peasants of low educational background, and play a special role in rural information services. In China, many agricultural library and information institutions have the equipment for producing recording products, video tapes and slides. They have made series of video products of scientific research results, practical cultivation schemes, animal husbandry and processing techniques. broadcast these products on regular programs by Central China TV Station (CCTV) and provincial (municipality and autonomous regions) TV stations, and release these products and duplicated video products in rural areas.

#### 5. Rural Libraries lead peasants to read and provide services for improving the competence of peasants

Low cultural competence of peasants is an important limiting factor for the development of rural economy and social development. Leading peasants to read is a good practice for the improvement of the competence of peasants and for the

promotion of modernized construction in rural areas. In recent years, many provinces and municipalities have set up peasants' comprehensive schools and, also opened libraries and reading-rooms under the leadership of rural grass-root organizations. These libraries and reading-rooms have led peasants to participate in reading activities and have done a great deal of work in popularizing agricultural scientific knowledge and law knowledge, and in strengthening the construction of spiritual civilization.

Libraries in China have achieved significant benefits and accumulated rich experiences in providing services for governments and agricultural decision-making departments at various levels, for agricultural research and education and, for agricultural production and extension. However, in order to improve the services for agricultural development, it is imperative to strengthen the construction of agricultural information systems and networks, so as to enable the broad masses of peasants to frequently acquire accurate information about the changes of the supply and demand of agricultural products during the transition period toward market economy, and avoid the situation of big fluctuation of agricultural production and waste of resources. Meanwhile, cooperation between libraries and agricultural professional technical associations at grass-root levels should be strengthened. The number of peasants' professional technical associations has reached 1.4 million throughout the country<sup>4</sup>, which serve as the major organizations for disseminating wealth-acquiring information in rural areas. Services provided by libraries should be closely integrated with the information exchange and operational activities of these associations. Libraries should create and operate information industry and, promote the formation and development of agricultural information market during their services oriented to economy, rural areas and township enterprises, so as to provide services for the development of high-yield, good quality and high-efficient agricultural in China and for the overall rejuvenation of rural economy. „Position will be gained only through hard work“. Only when libraries speed up their reform paces and provide good services, can they improve their social positions, can they solve the issue of a limited library budget, and can they achieve further development.

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## **ACHIEVEMENTS, EXPERIENCES, AND PROSPECTS IN SERVICES PROVIDING LITERATURE INFORMATION FOR BIOTECHNOLOGY**

**By Chen Ziyi**

Science and technology are the first production force, and various information media of science and technology are records of development in productive forces, if that is not being studied and taken as example any science and technology can not be further developed. The development of the 20th century science and technology is now making our world as a world of information. What is the most important literature information on source in this ever changing world? The answer should be explicit, that is the library, it is the information source and the main social channel to obtain information.

We feel that to explore continuously the method and model of how to utilize the rich information source in the library for serving scientific research and society should be our responsibility.

1970s witnessed a great change in biological study genetic engineering - an area which will completely change the living of human being had advanced more rapidly. In order to keep abreast with the world tide. China followed up with great effort. Facing this situation, we began to consider further enlarging the Library's information service scope. First of all, in 1978 we established the Journal „*Genetic Engineering*“, providing a new service model for biology information service.

Later on, we edited a series of special issues reporting hot research areas of genetic engineering at home and abroad, including “*Gene Structure, cloning and expression*“, “*Genetic Engineering of Hormones*“, “*Protein Engineering*“, etc. for the enhancement of research work and advances of biotechnological industry in China. Among these “*Meeting Report of Biotechnology Expert Committee*“, and “*The Influence of Biotechnology to the Development of Economic Society*“ had not only enhanced the study and development of this high technology, but also deepened the understanding of biotechnology in public. Therefore, through recommendation by experts, and appraisal by the evaluation committee, this information service project obtained the “*Science and Technology Progress*“ award from Chinese Academy of Sciences in 1986.

## **With a journal as „locomotive“ continuously open the new areas of information service**

The success of the Journal “Genetic Engineering“ greatly raised our fame in science information service. Therefore we were invited to national symposiums, and we utilized these opportunities to continuously enlarge the scope of our information service. We screened relevant literature from the rich resources of our library, compiled into bibliographic type information, and brought to the meeting, thus providing active service that was appreciated by all participants. They call this service „sending charcoal in the snow“.

Since 1986, we began selective dissemination of information to provide systematic service to research projects with great development values. For example, we offered papers about a gene gun to a research group. After they successfully made this powerful tool, which will find wide use in breeding new plant and animal varieties, they said „Our gene gun reached world advanced level is based on the key information provided by you“. In order to improve this product continuously they keep close contact with us and become long term customer.

## **Put emphasis on investigation, enlarging and research of information resources**

In order to master the distribution of biotech information resources, its pattern and trend, for the purpose of development and utilization, we widely surveyed biological literature and reference tools and edited a tool book over 300,000 words “The Resources of Biotech Information“, and had written several papers on the methods of finding biotech literature. This work had laid a good foundation for studying and establishing „Biotech Information System“.

Continuously explore new model of service - Serving for leadership in policy decision

According to the requirements of authorities for information, we completed dozens of reviews, the representatives are “Biotechnology and Health of Human Being“ a chapter in the book “*Influence of Biotechnology to Development of Economic Society*“ edited by the Economic Development Research Centre of State Council, “Review of Biotechnology in 1989“ for Chinese Science and Technology Development Promoting Centre, “Conventional and Biotech Plant Breeding“, “Biotechnology and Intellectual Property“, and “Prediction on 21st Century Biotechnology“ for Planning Bureau of Chinese Academy of Sciences; these papers all obtained good appraisals.

## **Undertaking SDI service for scientific research and national economic construction**

Responsible for national biotech key project's information tracing service among them, some representative projects are: "Hormone Biotechnology", "Promoting Plans Resistance by Genetic Engineering".

"Raise Biotechnological New Varieties in Animal and Plant" and editing relevant Newsletter. Since 1986, we had reported more than 10000 relevant literature and provided some 7000 literature copies.

Edited and published the academic journal "*Progress in Biotechnology*", and the information journal "*Newsletter in Biotechnology*". The journal, "*Progress in Biotechnology*" broaden the reporting scope of original journal "*Genetic Engineering*" and the journal "*Newsletter in Biotechnology*" accelerate the reporting speed.

Propaganda of modern scientific and technical knowledge

Propaganda of new scientific and technical knowledge is a policy made by governments. In recent years, we were invited to write articles as "Biotechnology today", "Biotechnology Tomorrow", "Ten Years of Genetic Engineering Research" by People's Daily, Guangming Daily, Xinhua News Agency etc.

These activities had great influence on the society, many readers wrote us asking for information. We feel that librarians with their information dominance, can serve the society in various forms, and participate in all important activities of economic development.

## **Other important products of biotech information**

We take part in editing three big tool books, one is "*Catalogue of Biotech Institutions and Workers in China*". This is a great promotion to the exchange of information in academic world.

## **Continuously innovate the basic construction of information work**

We set up several computer data banks concerning organizations, staff and research programs and performing application experiments using the newly built information retrieval system.

## **To extend information service areas according to requirements from society**

We played an important role in the establishment of the Chinese Society of Biotechnology, the society also designated our journal "*Progress in*

*Biotechnology*“ as its transactions. The establishment of Chinese Society of Biotechnology is of great significance in promoting and commercialization of Chinese biotechnology.

## **Conclusion**

Through many years of exploration, we have established a multi-level biotech information system, which include investigation report, reviews, reference tools, journals, proceedings, computer data banks, CD-ROM, selective dissemination of information, to serve government's policy making, education, research and development. Famous scholars and professors in Chinese biotech circles all had high evaluation for our information service works. In 1991 we received „Science and Technology Progress Award from Chinese Academy of Sciences“.

We believe following the development of Science and Technology and the construction of information high way library will become more and more important to the advances of world economy and will have a brilliant future,

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## ***PROFESSIONAL PERSPECTIVES***

### **THE IMPACT OF PROFESSIONAL VALUES ON LIBRARY PERFORMANCE**

**By Mariam Ginman**

#### **1. Areas of emphasis in library activities**

The professional view of responsibility and areas of emphasis in library activities imply crucial internal factors for change. During the past hundred years, the professional view has shifted and three main successive strands can be identified:

- a view of library sociology
- a view of information centre ideology
- a view of total responsibility of information provision implying process thinking and result-oriented goal-setting.

#### *The role of the library as a social and educational institution*

The simultaneous surge of sociological research in Germany and in the USA, especially at the University of Chicago, in the 1920s gave birth to library sociology. The social and educational role of the library was focused on, which resulted in regarding the library as a social institution. (Miksa, 1992). This view spread rapidly all over the world. The library began to be understood as an important component in cultural development as well as in shaping social justice and equality in society. The new view affected the speech and language librarians began to use in reference to their work. It also affected the administration and goal-setting of libraries, more specifically the planning of various library activities, and consequently library building.

This view of the responsibility and goal-setting of libraries as an institution was a dominant trend for several decades. Library activities became tightly linked with library organization and library science became identified as a „place/space science“. Research analyses focused on the activities and the properties spanned by this „place/space“. Therefore libraries in practice gathered almost all activities

and acquired almost all information media which gave foundation for the cultural and scientific provision in society.

### *The role of the library as an information centre*

During the second half of this century another view began to emerge (Miksa, 1992). It had its origin in the research of the 1950s which developed a system for interpreting signals in mathematical terms and analyses resulting in a variety of models for document retrieval and knowledge representation. The disciplines underlying this development were communications science, cybernetics, information processing and cognitive sciences. This research trend gained several adherents with a new notion of the responsibility of the library; library was seen as a system of human communication. The library was begun to be understood as an information centre with emphasis on the storage, retrieval and use of information. New methods for analysis (e.g. bibliometrics), new tasks (e.g. information search) and new terminology (e.g. the word „information“) came into being. Information was defined as something that flows in a system, which can be measured in various scales and which can be controlled. Libraries had new departments organized for performing information searches, and this new service form had implications on the space division in libraries.

### *The relationship between the different roles*

Today we see that these paradigms have a strong causal relationship and are both indispensable for a harmonious development of information provision. Their interdependence has been emphasized particularly at the face of the information society, in which the social and economic role of information is becoming more and more significant. At the same time the areas of emphasis in the professional responsibility have been influenced by new trendy tendencies of our day, such as holism.

### *The holistic view - from place/space to process*

In most disciplines, researchers try to bring together fragmented research results to form an integrated view of man, nature, society etc. Today this trend may be caused by various factors, but originally it was influenced by the new possibilities created by mathematics and information processing. Having methods for analysing large quantities of data and being able to combine them to new unities, structures, patterns, made researchers strive for a new understanding of previously unknown connections and phenomena.

In the context of library and information science, holism contributed to a „unifying“ insight into the discipline, i.e. made it possible to define and analyze

the responsibility of the discipline in relation to the whole. It was asked what form, what content, what scope was concerned in the studies of library and information science. And questions concerning the relation of library and information science and the flow of information in society began to be more and more crucial and pronounced.

The role of the library as an intermediary is emphasized. Today's library is shifting from a collection-based ownership to an access-based intermediary activity, i.e. information is readily retrieved when needed - instead of collecting it for potential request.

## **2. External factors**

### 2.1 The service requirements of the library users

What are the needs of the users when they come to the library?

In principle it lies in the responsibility of the scientific library to be able to give a satisfactory answer for the following user needs:

1. need for document
2. need for information
3. need for place/space for intellectual work

#### *Need for document*

Today many libraries are trying to meet the need for document by „libromatic service“. This is achieved by appropriate provision of self service equipments for the library users to locate, to access library materials and to check them out of the library. This implies that the library provides services which save the user's time and effort, such as document delivery. This also requires well organized collections, efficient tools for location, a sufficient number of automatik copying and lending machines as well as a lot of working space. Moreover, this means giving up the idea of conventional book stacks and document stores. The collections of library materials will be situated in an active working area with plenty of light and space for intellectual and physical communication. Library users may feel free and comfortable to sit down to read and study documents, copy them without disturbing other users. The collections of library materials shall be easily accessible. This makes a requirement for an extreme flexibility of space. Only thus is it possible for it to follow the changing demands caused by the changes in the principles underlying the library activities, e.g. the demand made by a shift from the printed format to the electronic.



Concerning the meeting of the library user's information need, two different trends prevail: on the one side more and more often the end users themselves search databases; on the other users need more and more assistance, i.e. instructions in the use of information tools available, training in collecting, choosing, assessing and distribution information, and especially in search strategy formulations at the face of masses of information in global networked systems.

#### *Need for place/space for study and research*

It is difficult for a scientific library to realize the dream of its status as an intellectual centre if it cannot meet the teachers', students' researchers' need for space for study and resesarch. University teaching and learning is becoming more and more a problem-based team work, which brings students in large numbers to libraries. They need a place for group work with facilities for electronic information search. They need reading rooms and computer carrels for writing their assignments.

The researchers need what are called scientific sitting rooms to keep abreast with current information as well as working and reading rooms for a more systematic study and research.

#### *Space for the personnel*

The requirement for organizing service-oriented library activities leads to the requirement for organizing the internal library practices and routines - i.e. the library tasks essential and indispensable for providing the services - according to user needs. The underlying principle of „one stop shop“ means that users do not have to go from the lending office to the interlending office or further to the office of information service; all their information-related needs are taken care of at one service point. This organization model can be built on a close team work and a large responsibility on the part of the library personnel; the space structure can promote cooperation and internal communication.

### 2.2 The impact of telematics

One important factor shaping the work in the libraries of the future is modern information and communications technology.

The first movement of information technology swept over libraries a decade or so ago. As a consequence e.g. many manual routines became automated. Conventional library services were performed with new, faster, and more effective methods.

The second movement of information technology is now sweeping over many libraries, Global electronic information networking has brought forth unforeseen service forms and related routines. They give libraries an opportunity to link databases, to organize the acquisition and distribution of information via campuses and global networks, as well as the bibliographic control and distribution of easily available information resources. Through their work stations, libraries may provide users access to information in a variety of databases: bibliographic, full-text, fact or multimedia with interactive access to text, voice and image. Never before have libraries been so open for various kinds of partnerships in various fields. In many universities there is a close cooperation between libraries and computing centres, enterprises and organizations both of private and public sector.

The third movement is still to be seen in the near future. It is difficult to envisage by the existing phenomena and services so far provided. What is certain is that information provision takes less and less place within library walls and more and more space outside library walls - in cyberspace.

The primary idea of the librarian's role will not change, however. The principal task for the librarian will still be to act as an intermediary between the information producer and the information consumer, i.e. to act as a vital link in the process of information provision. What is concerned at the very core of this task is how to analyze information resources and how to make them available and accessible according to user needs.

### **3. Concluding remarks**

The acceleration and power of this development depends on the intellectual and material resources of individual libraries. Never before has the future of libraries been so closely tied to the proactive potential of the profession. The issue which all libraries must take a stand on today is: Will libraries plan for, participate in and respond to the drastic changes which are to come. We will have a diversity of solutions. Therefore it is impossible to envisage in detail today what libraries will look like tomorrow - after five or ten years.

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**CHINA CENTER FOR TRADITIONAL CHINESE MEDICAL  
LITERATURE RETRIEVAL  
STATE ADMINISTRATION OF TRADITIONAL CHINESE  
MEDICINE**

China Center for Traditional Chinese Medical Literature Retrieval (CCTCMLR) was founded in July, 1992. It is the largest traditional Chinese medical literature retrieval department affiliated to the State Administration of Traditional Chinese Medicine in China. It has a strong technical staff which consists of experienced experts of different academic titles, specializing in indexing, retrieval of Chinese medical literature and computer. In 1995, it set up 8 branch centers in China, and established a nation wide Traditional Chinese Medicine Information Network. Now it is linked to the Internet.

**1. CCTCMLR's Databases**

**1.1 TCM Literature Database**

This is the largest traditional Chinese medical literature database in China developed by CCTCMLR. It contains references to literature on traditional Chinese medicine, Chinese Materia Medica, integrated Chinese and Western medicine, acupuncture, acupuncture anesthesia, Qigong, massage, health-preserving and health care, published in more than 500 biomedical journals. The amount of literature increases at 20.000 per year on average, 50% of the citations are attached with abstracts. The database of acupuncture and acupuncture anesthesia has both Chinese and English versions. In this system, the literature is indexed and classified in accordance with MeSH (*Medical Subject Headings - Annotated Alphabetic List*, National Library of Medicine, U.S.A.), *Subject Headings of Traditional Chinese Medicine* (compiled by the Institute of Information on Traditional Chinese Medicine) and *China Classification of Books and Reference Materials* (3rd edition). It is characterized by wide coverage and high retrieval capability. There are online searching and microcomputer searching systems, the former is run on VAX/4500A system with TRIP (a fulltext retrieval program) software and the latter on microcomputer with CDS retrieval software. References can be retrieved via journal titles, authors, units, subject headings, key words, and classification, etc. more than 20 routes. In online searching system, retrieval can be even done via topics or abstracts.

It provides on line searching service and floppy disks to users.

## 1.2 China TCM Patent Medicines Databases and China TCM Enterprises database

This database contains references to over 4,000 Chinese patent medicines produced by near 1,000 manufacturers, which can be retrieved via name of products, name of manufacturers, approval number, price, appraisal of product, dosage-form, components of the medicine, therapeutic application, etc. Its information consultancy service will contribute to popularizing Chinese TCM products, helping our medical enterprises go international and participate in the competition on the world market. It will build up a bridge for prompt communication between the enterprise and the customer. It provides prompt information on TCM market, forecasting the trends of marketing, and gives advices for designing new projects. It provides online searching service and floppy disks to users.

## 1.3 TCM Press Information Database

The database contains references to more than 100 newspapers and periodicals which have been published in China since 1988. The items of citation include Title, Author, Name of Newspapers, Abstract and Issue Date. It is updated each month.

## 1.4 Foreign Organizations and Scholars Database

The database contains reference materials of 1,500 organizations based in the United States, Canada, Japan, Germany, etc. including production organizations, business organizations, scientific organizations, teaching organizations (schools and colleges), medical organizations (clinics and hospitals), academic organizations and publishing houses in the fields of traditional Chinese medicine, Chinese materia medica, acupuncture, Qigong, Tuina (Chinese massage) and alternative medicine. The items recorded for each organization include Nationality, Province, Translation Name, Original Name, Address, Telefacsimile, Grade, Character, Main Business, Main Products, Brief Introduction, Founding Date, Responsible Person(s), Members, Publications, Subordinate Relationship, Source of Information, Date of input, Notes, etc. The database is updated once a year. Its disks are available.

## **2. CCTCMLR offers following services:**

### **2.1 Literature Retrieval**

Upon the user's request, either by ordinary mail, or by e-mail, or by phone call, or by fax, or in person, etc., provide retrieval service of medical literature, especially traditional Chinese medical literature at home and abroad, including providing the citation, abstract or fulltext duplication of the requires literature.

Telephone: 86-10-64032167, 86-10-64014411 Ext. 3232

Fax: 86-10-64032167

E-mail: Cui@ustcm.imicams.ac.cn

### **2.2 Special topic information consulting service**

To provide information consulting service on special topics, such as the progress of research on a certain disease or on a certain medicine, the development of TCM new product and new market, and the topics referring to life preserving, cosmetics and health care.

2.3 Provide floppy disks of TCM Literature database, China TCM patent medicines database and China TCM enterprises database.

2.4 Provide online searching service for registered users.

2.5 A WWW server has been set up with the address:  
<http://tcm.imicams.ac.cn>

2.6 Service hours  
24 hours a day, seven days a week

## **3. Standard of payment**

### **3.1 Online searching**

a) Registration fee: US\$ 2,000

b) Annual fee: US\$ 2,000

### 3.2 Purchase disks

Name of Database	Years of Coverage	Version	Citations	Price (US \$)
Traditional Chinese Medical Literature Database	1984-1994	Chin	around 20.000 per year	\$ 500/yr
Acupuncture Literature Database	1984-1994	Chin	24,000	\$ 300/yr
	1984-1994	Eng	24,000	\$ 500/yr
Chinese Materia Medica Database	1949-1994	Chin	30,000	\$ 300/yr
	1990-1994	Eng	10,000	\$ 500/yr
Databases of various Topics	1984-1994	Chin	(Price: Based on number of citations; determined by consultation)	

#### 4. For ordering disks or making inquiries please contact:

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