LIBRARY AUTOMATION AND THE LIBRARY INFRASTRUCTURE OF INFORMATION SYSTEMS IN LATIN AMERICA: IMPLICATIONS FOR THE CARIBBEAN

by

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I. Introduction.

It was but a few minutes after my delivery of a report to last year's meeting of SALALM in San José, Costa Rica on the study done for the Organization of American States (OAS) on the present state of library automation and information systems in Latin America and the Caribbean that our meeting room on the fifth floor of the Gran Hotel Costa Rica was rocked by an earthquake.- not a severe one, about 5.5. on the Richter scale.* Although one would exaggerate to say that the contents of my report were earthshaking, it is safe to say that the level of library automation attained in Latin America thus far is moving, indeed, and worthy of emulation by other countries and regions.

For decades librarians all over the world have discussed the advantages of centralized and/or cooperative cataloging, of Cataloging-in-Publication (CIP), of resource sharing, and of the development of information and library systems. The computer has brought new dimensions to these concepts and added new ones, some to resolve problems hitherto neglected such as the ISBD, ISBN, ISSN, etc., authority control, networking, data base management, as well as Universal Bibliographic Control (UBC), the creation of national information systems (NATIS) sponsored by UNESCO, and sectoral [illegible] the cooperative and coordinated indexing of periodicals, participation in library networks and "bibliographic utilities" such as OCLC (On-Line Computer Center).

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* This paper is an expansion and update of the working paper prepared by the author for the XXVII SALALM, entitled "Library Automation and Information Systems in Latin America and the Caribbean."

The principal factor in the recent advances has been the utilization of the computer, mainframe as well as mini- and microcomputers, to library operations, and especially to cataloging procedures. Other factors include: 1) the development programs of international organizations such as UNESCO and the Organization of American States (OAS), and of such national agencies of international development as Canada's International Development Research Centre (IDRC), for planning and creating national and regional systems of library and information services; 2)increased communication among educators of the Hemisphere and their greater awareness of the importance of library and information services as they relate to curriculum development, a subtle change from the oral tradition to a more book-oriented method of teaching involving greater use of textbooks and other teaching and reading materials, and to emphasis on the research role of the university; 3) the stress of scientists and industrialists worldwide on the need for an increased and more rapid access to information found in printed sources as well as in automated data banks; 4) an improvement in the training of library and information specialists through graduate study in schools of library and information science in the United States, Canada and Europe, as well as in special advanced courses in Latin America and the Caribbean and through their increased participation in international and regional conferences on library and information planning and on scientific and technological information services sponsored by such international organizations as the International Federation

of Library Associations (IFLA) and the International Federation for Documentation (FID) and their regional committees, and by such regional organizations as the Inter-American Association of Agricultural Librarians and Documentalists (AIBDA) and the Association of Caribbean University, Research and Institutional Libraries (ACURIL), and others; and of the successful application of the MARC formats to the automated cataloging of materials in many countries of the world.

II. Automation of Library Systems and MARC/MARCAL.

Integrated automated library systems have been created in recent years in Mexico and Venezuela, and a third is being developed in Brazil. Chile lays claim to a micro-computer based system at the institutional level, Costa Rica has hopes of initiating library automation, and Colombia has taken steps toward automating procedures of a library network.

All of these systems utilize the MARC/MARCAL format. (MARCAL is a Spanish translation of the original MARC II - "MARC para América Latina.) In the recent past problems of merging cataloging and indexing data have arisen because of the fact that some of the information systems in Latin America and the Caribbean have used the ISIS system (Integrated Set of Information Systems), and a few libraries have automated their cataloging with assistance from IDRC with Hewlett-Packard equipment for the use of MINISIS, primarily

because the ISIS system is considered more simple than MARC and assistance has been available from IDRC and UNESCO. The UNISIST Reference Manual is a set of instructions on ISIS. A way out of the dilemma is the result of an IFLA-sponsored feasibility study monitored by the Library of Congress which determined how MARC and MINISIS can be made compatible. The conversion is being worked on at the present time. By this means the ISIS-based listing of an "Index to Periodical Articles in the Caribbean Region: a Current Awareness Bulletin"of the Caribbean Development Bank could be merged into a data base of monographs using MARC, it is hoped.

A. The National Autonomous University of Mexico.

The need to bring some degree of order to the holdings of some 165 libraries of the National Autonomous University of Mexico (UNAM) maintained by the university at its university city campus and in regional campuses throughout the country led to the creation of the LIBRUNAM system of the General Directorate of Libraries. LIBRUNAM is an integrated system for the handling, processing and retrieval of bibliographical information principally on the books held by the various libraries. As developed by local computer specialists and librarians, LIBRUNAM is a complex system with many programs which make it easy to use, versatile, flexible, and compatibl with systems developed elsewhere.

LIBRUNAM's data base is composed first of the MARC tapes of the Library of Congress to which have been added the titles recorded in the official catalog of UNAM/DGB in 1977, and new records for titles acquired by university libraries since 1978, all in Spanish and in MARC format. The first records were entered into the data base in January 1978. The retrospective catalog was incorporated into the data base in the following two years. Some 250,000 titles were included in the data base by 1982, representing almost 2 million volumes in UNAM libraries. The compilation of a data bank of abstracts of theses produced at UNAM, which by 1982 included more than 3,00 titles, was made possible by the design of another program for the purpose.

The LIBRUNAM system was designed to cover also the routines used in the annual acquisition of from 120,000 to 150,000 volumes ordered and received by the university's libraries which include payment to suppliers, the preparation of reports on library accounts, the handling of money orders, requests for checks and bank drafts, applications for payment for UNAM's bursar's office, invoices received, verification of checks, orders control, foreign currency exchange, and catalog supply operations such as record forms, labels, etc.

Covered in the modular units comprising the LIBRUNAM system are the following: 1) the acquisition of monogra phs; 2) the bibliographic data bank; 3) the cataloging and classification of monographs; 4) retrospective conversion of the union

catalog of the university's libraries to the MARC format; 5) quality control; 6) information retrieval; and 7) theses.

In accordance with the various elements of the catalog card, the retrieval capabilities are on-line. Phonetic retrieval was built in to enable information to be retrieved even though orthographic mistakes may be present in the presentation of the bibliographic information. Access is by author, title or subject.

Bibliographies can be compiled by author, title or subject from the LIBRUNAM data base, and the user can select the printed format he prefers in short, long, or original form.

The publication of acquisitions lists of individual libraries is made possible in the LIBRUNAM system, as well as lists of all the libraries. Catalog cards are made available to libraries throughout Mexico (or elsewhere if so desired), from the LIBRUNAM data base, and microfiche sets of its complete catalog have been given by UNAM to all university libraries in Mexico.

The development of an integrated national library system in Mexico has been made possible in the design of the LIBRUNAM system, with adequate planning and control.

The LIBRUNAM system is being applied to authority control in an OAS-sponsored project and in a national cooperative cataloging project maintained by the Colombian Institute for the Promotion of Higher Education (ICFES), through technical assistance and training programs made possible by OAS travel funds, and through

a formal bilateral agreement between Mexico and Colombia.

Magnetic tapes of the LIBRUNAM data base, using MARC formats, can be merged with other data bases in Latin America and elsewhere which use the MARC format. It can be used in the creation of a Latin American data base in Latin America or elsewhere, or for an OCLC-type operation with bibliographic data in the Spanish language.

Word has it that one of the creators of LIBRUNAM has now produced software for a system called LOGICAT which is similar to LIBRUNAM for use in the individual libraries which compose the UNAM system. It is being applied also in the library of the Universidad Iberoamericana, in Mexico City.

B. The National Library System of Venezuela.

An essential element in the development of a National Systen of Libraries and Humanities, Scientific and Technological Information (SINASBI), created in 1976, is an automated project to improve the Venezuelan collection of the National Library of Venezuela. The National Library itself was converted by law into an Autonomous National Library and Library Services (INBINA).

Of the some 175,000 titles of Venezuelan origin and on Venezuela thought to have been printed by 1976, it was found that the National Library possessed only about 35,000 titles. To remedy the situation a foundation was created to purchase some private libraries of Venezuelan materials and to engage in a bibliographic effort to identify the Venezuelan works which had been published. A contract was signed with Northwestern University Library to search printed library catalogs and bibliographies and other [illegible] works, to train Venezuelan library personnel,

and to apply the NOTIS-3 automated system (Northwestern On-Line Integrated System) to record the titles and to produce a listing of them as well as to develop a cataloging and integrated library system for the National Library.

The National Library has achieved the automation and control of the processes of acquisition, the printing of catalog cards and labels, and the compilation of author, title and subject bibliographies, as subproducts of the implementation of the computerized NOTIS-3 system, as well as the printing of the national bibliography, the cataloging of the works received, and the production of lists for administrative purposes.

MARC tapes are incorporated by the cataloging module into the data base, together with up-to-date records for new Venezuelan publications which are entered into the national bibliography with help from the legal depocit law of the country. The cataloging of all works received by the National Library is done in the MARC formats, using anglo-American cataloging rules.

Some 105,000 records for books from or about Venezuela held by libraries in the United States had been entered into the data base by the time that the "Proyecto Venezolano" was completed by Northwestern in 1979, together with some 16,000 authority records in English and Spanish.

The cataloging of new monographs had been automated by August 1980 by the National Library, and nine months later all new materials were being entered into the data base and a beginning had been made in converting the retrospective catalog to machine-readable form. By March 1981 all the elements of

serials cataloging had been automated. The first annual national bibliography was printed from the data base by September 1981. The acquisitions operations and authority control were also automated at the same time. The versatility of the NOTIS-3 system has been one factor in the easy implementation of the automated system in the new setting in Venezuela.

In the authority control of names and subject headings the MARC authority format has been applied. Some 17,000 LC subject headings were translated into Spanish in 1979 and entered in bilingual form into the data base through the creation of a computer program compatible with NOTIS-3. The National Library can searth the data base by subject by applying the authority control program.

The conversion of the bibliographic elements in English in the cataloging record produced by U. S. libraries into Spanish by computer, in fixed form, was made possible by a program designed during the Venezuelan Project at Northwestern; The program required the use of the 150 field for topical headings in Spanish and 450 for English terms, in the form of "see from" references.

Although the NOTIS-3 system has been employed for various purposes, at the national level it has yet to develop to its fullest capacity. Included in the system thus far are the aspects of acquisitions including exchanges, the control of periodicals received, the printing of cards and bibliographies, and others.

However, more than 60,000 periodical article records had been entered into the data base by early 1982, adapting the MARC format for monographs inasmuch as the format for analytics had not yet appeared. By now the National Library's data base is on-line for all materials cataloged as well as for its retrospectivo catalog and for Venezuelan works. Furthermore, the computer prints out card sets for the public library system of Venezuela. By February 1982 the General Library of the Central University of Venezuela was on-line with the data base, and had begun to contribute its own cataloging records to the data base. It was also on-line to the Supreme Court and the national patent office.

The creation of an on-line catalog for public use does not have a high priority at the present time even though Northwestern has progressed rapidly in the development of its automated user-service LUIS.

The application of the NOTIS-3 system as developed in Venezuela to other countries is possible at three different levels. With its documentation in Spanish it can be applied immediately in other countries especially those of the Andean Pact Nations or Convenio "Andrés Bello." Agreement has been reached whereby Northwestern will permit Venezuela to assist in applying the system to the National Library of Chile for the same purposes for which it was designed for Venezuela, i.e. the cataloging and production of the national bibliography, and the production of catalog

cards for a national public library system. A UNESCO grant will make possible technical assistance from Venezuela for Chile. Chilean library and computer experts have already engaged in in-service training at the National Library of Venezuela. IBM equipment no longer needed by the Ministry of Education is being reinstated for use by the Chilean National Library. The financing of the license from Northwestern for yearly revisions and updates of NOTIS-3 is made possible through the collaboration of the Library of Congress of Chile and assure : : the development of a system in Chile for external as well as internal use in the National Library.

An additional advantage of the use of NOTIS-3 in other countries of Latin America and the Caribbean for the control of national bibliography and library uses is the fact that the University of Florida at Gainesville, with its continued interest in Latin America and especially in the Caribbean, uses NOTIS. Its version called FOCUS is being distributed by Northwestern University. It is connected to OCLC and therefore inputs data on works from and about the Caribbean and Latin America into the OCLC data base, and obtains data from OCLC on works from the region which has been derived from LC MARC tapes as well as from important sources as the Benson Latin American Collection of the University of Texas and other libraries which participate in SALALM's cooperative cataloging project of library users of OCLC.

The potential exists for the increased use of the Venezuelan experience in national libraries and large university library systems of other countries by virtue of an informal agreement by Northwestern

to permit the OAS to distribute the NOTIS-3 system in Latin America and the Caribbean by a payment of $100,000 (some $50,000 are now charged per institution to libraries in the United States), with technical assistance, in-service traing, and documentation in Spanish to be provided by the Venezuelan National Library. Such implementation would facilitate the expansion of the proposed Latin American Data Base. Justification for such a payment can be made when three countries of Latin America and the Caribbean ask the OAS to provide the permanent license fee for the use of NOTIS.

As for equipment, the NOTIS-3 system uses an IBM main-frame com Puters. IBM's Personal Computers (PC's) can be used as NOTIS terminals, using the IBM-provided software. Many IBM models can use NOTIS from a cost of $163,000 for all equipment needed to sustain 75 terminals and 400,000 bibliographical records to $375,351 for 450 terminals and 1,250,000 bibliographic records. Additional disk drives can expand the records to a level of from 4,500,000 to 11,500,000 records for the same equipment. Additional software costs amount to some $295 for each possible configuration.*

*Facts derived from Northwestern University's NOTIS Configuration Guide , January 1984.

Other central processors known to be possible to use for NOTIS include AMDAHL, Control Data Omega Series, Formation, Magnuson, Motorola Four-Phase Models 311 and 312, National Advanced Systems and Nixdorf Model 8890. These would likely be used in a shared environment.

A second level of operation is made possible by the experience of the Venezuelan National Library. The modification and distribution of records produced by the Library of Congress and by the National Library of Venezuela is permitted by an agreement between the two institutions, without restriction. This means that MARC records of LC can be translated into Spanish in Venezuela and distributed to Chile and elsewhere. However, in order to provide this service, it may be necessary to seek funds from some financing agency interested in the wider accessibility of information.

Nonetheless, the translation aspect of the NOTIS-3 system in Venezuela of MARC and other records in English into Spanish has the potential for a great impact in Latin America because it facilitates the immediate use of MARC tapes in the Spanish-speaking countries. A MARC record from a MARC tape can pass automatically into the National Library's file by applying the translation program for bibliographic elements and subject headings transferred by automated means. As needed, the conversion tables are updated regularly.

The third level of potentiality of the Venezuelan experience is the utilization of the data base at the National Library of Venezuela as the basis for an all Latin-American data base into which can be merged the data produced by other countries on their national publications. Venezuela has arranged with Mexico for an exchange of experts for the improvement in the development of the two systems. Unfortunately, funding is lacking at present for the development of a conversion program in Venzuela to permit the incorpor ation of the LIBRUNAM records into the Venezuelan data base. The development of a Latin American Data Base in Venezuela would permit the duplication of magnetic tapes from it for use elsewhere, such as in the Columbus Memorial Library of the OAS, and/other countries of Latin America.

C. The BIBLIODATA System of the Gétulio Vargas Foundation of Brazil.

In 1979 the Gétulio Vargas Foundation in Rio de Janeiro began its automated cataloging project with the use of MARC tapes received in exchange from the Library of Congress and of the BIBLIODATA system developed on the basis of a Portuguese language translation and adaptation of MARC as CALCO (Catalogação Legível por Computador), developed originally at IBBD, now IBICT. More than 200,000 bibliographic records have been converted from MARC tapes into Portuguese and entered into the data base. Libraries in Brazil are offered listings by author, title and subject of materials cataloged in Portuguese.

Approximately 100,000 LC headings have been translated into Portuguese and entered into the data base in bilingual form, and name headings were to be entered soon. For those libraries which use systematic catalogs a "systematic index" has been created on an automated basis.

So that cataloging has to be done only once, the Automated Processing Center of GVF has developed another subsystem for other libraries in Brazil to use the data registered. The following products were offered by GVF to cooperating libraries by early 1982: cataloging cards including shelf list cards; lists, cards and microfiches of subject headings in Portuguese; labels for books and book cards; listings by author and titles of books cataloged, and listings of books in processing.

The Central Library of GVF has developed a provisional subsystem to include: automated bibliographic compilation; automated control of loans; the control of periodical numbers received; SDI services on an individual basis; retrospective searches for retrospective bibliographies; MARC records for other libraries in Brazil in Portuguese, and the adaptation of MARC records in the CALCO format for other libraries in Brazil.

The GVF Central Library is also experimenting with a minicomputer so as to gain experience which may be applied in other libraries in the country. The Library of the Federal University of Rio Grande do Sul was one of the first to use the CALCO format in its automated program of cataloging.

It is not known to the author at this time to what extent the services of the GVF are being used by other libraries in Brazil or whether the national bibliography of Brazil is being printed for the National Library from the BIBLIODATA data base.

Inasmuch as the bibliographic records being generated are in the MARC format, they, too, can be incorporated into a Latin American Data Base with those of Venezuela and Mexico, and with those expected to be produced in the near future in Chile and elsewhere.

D. Other Automated Systems.

The Catholic University of Chile uses a mainframe TEI for cataloging, with the National Union Catalog (NUC) of the Library of Congress on microfiche for cataloging data. Microcomputers are used for other operations, the IMS 8000for circulation, to be installed in 1983, and the IMS 5000 for the development of such projects as acquisitions, the on-line catalog, and the union list of serials. Each one of the configurations operates independently. They are neither interconnected nor connected with the University's DECIO computer. The cataloging system is original, developed by the Library System, and is written in Pascal.

In April 1983 Mexican experts who had worked on the LIBRUNAM were invited to evaluate the system. Travel funds from the OAS permitted the original exploration of the potential of library automation as developed in the United States and Canada. OAS assistance is making possible the adaptation of the LIBRUNAM-based authority control system developed by ICFES in Colombia for use on the equipment of the Catholic University of Chile.

LIBRUNAM is being adapted for cooperative cataloging by ICFES in Colombia, with assistance also from the OAS. The University of Costa Rica, with OAS assistance, has explored the possibility of utilizing the MINIMARC system of floppy disks and equipment for cataloging purposes for its library system and for the services of the Centro Catalográfico Centroamericano, as well as the feasibility of using mini- or microcomputers for the development of an integrated library system, either connected or not connected to the University's computer.

MARCFICHE (produced by the NARC Applied Research Company of Washington, D. C.)is being used by a university library system in Monterrey, Mexico. The Ibero-American University Library in Mexico City uses MARC records through the AMIGOS library network, connected to OCLC. In early 1983 UNAM in Mexico was to begin training librarians for a connection to OCLC, also through AMIGOS. The National Library of Venezuela is giving consideration to an OCLC connection.

A review of the systems already in place in Venezuela, Mexico, Brazil, and Chile is to take place in July 1984 at the request of the Catholic Un iversity of Chile, under OAS sponsorship and with additional assistance from UNESCO. Representatives of university and national libraries will participate as well as some of the experts who have developed the systems. The potentiality of stand-alone systems for mini- and microcomputers vs. the use of large mainframe computers used in a time-shared environment will be explored. In the meantime, a prior meeting in April 1984 on the use of computers in developing

information systems will bring together in Chile representatives of such international organizations as UNESCO, OAS, ECLA, and others, as well as of such information systems as ERIC. Seminars on library automation have been held recently in Uruguay sponsored by USIA and in Peru sponsored by the OAS, for national purposes.

An OCLC connection has been recommended for use in the Caribbean, especially for the Library of the University of the West Indies in Trinidad. This has not yet been achieved, largely because of the telecommunication costs. However, experience has shown that ham radio operators can use certain radio frequencies rather than the telephone lines to communicate with other computers, even home computers. It remains to explore how digital transmission can be exchanged between libraries and library computers in Latin America and the Caribbean.*

III. National Bibliography and Its Automation.

Of the five countries recently surveyed by the OAS, three rely on their National Library for the production of the national bibliography. Other agencies have assumed the responsibility in other countries, for one reason or another. Of great importance in assuring a fairly complete coverage of national publications is the effective functioning of the national legal deposit system.

In addition to monographs and periodical titles, national bibliographies frequently cover journal articles, theses, official publications, non-conventional documents, and audiovisual materials. The Anglo-American cataloging rules are applied in all countries. Specialized national bibliographies are also produced in Colombia, Mexico and Peru in such fields as education, agricultural sciences and cattle production, migration, nuclear energy, popular arts, universities-at-a-distance, and statistics.

* Dunn, John M., "Good tidings from computer data banks," Today in Gainesville, vol. 2, no. 6, March 1984, pp. 13-15, 22-23.

A. Automation of the National Bibliography.

The automation of national bibliographies has been mentioned in previous paragraphs. The first number of Venezuela's national bibliography printed from the automated data base was published in September 1981. The national bibliography of Chile will be produced by the NOTIS/Venezuela system. Technical assistance has recently been supplied by the Inter-American Development Bank to the Instituto Caro y Cuervo which publishes the Colombian national bibliography.

The automated production of the Bibliografía mexicana is the national project of the Multinational Center for the Transfer of Automated Bibliographic Information of the OAS was to be carried out by the National Council for Science and Technology of Mexico (CONACYT). The National Library of Mexico, with the assistance of CONACYT and UNAM/DGB has experimented with the automation of the Bibliografía mexicana and achieved the automation of the bibliographical records found in the printed number of the bibliography for January-February 1979 in tapes provided for participants in the 1980 OAS meeting in Mexico on the MARC/MARCAL system. The coordination of this project with the LIBRUNAM system has been suggested, but the author has no late information on progress being made on the project.

The BIBLIODATA project in Rio has as one of its principal purposes the automated production of the national bibliography of Brazil for the National Library. No information is available to the author on this aspect of the BIBLIODATA project at present.

B. National Bibliographic Control.

The principles of Universal Bibliographic Control (UBC), developed by the International Federation of Library Associations (IFLA) with assistance from UNESCO, have carried over into the planning by the OAS for regional bibliographic control and by individual countries as well. In some coun tries various institutions have been given responsibility for assigning ISBD (International Standard Book Numbers) and ISSN (International Standard Serials Numbers) numbers, for legal deposit consistency, and for the study of the bibliographic standards of the International Standards Organization (ISO). On a regional basis at least a start has been made to achieve Universal Bibliographic Control.

IV. National Library and Information Systems and Services.

National systems of library and information servicies have been created in most of the countries of Latin America, and there have been discussions of their creation in most of the remaining countries, as was revealed in a recent unpublished study on library automation and information systems done for the Organization of American States.* In relatively few countries has there been a well developed national plan for creating a national system with sectorial subsystems. The principal pattern has been that of creating library and information services in such essential fields as science and industrial technology, education, agriculture, and biomedicine before any thought was given to bringing them together into an integrated and unified national network. Library networks

* By Marietta Daniels Shepard, completed in 1983.

have formed an important part of the national information networks wherever they have been created.

Technical assistance has been provided by the OAS in the development of national information services to industry, of national school and public library services and university library networks, as well as to the development of various elements of the library infrastructure of information services such as centralized cataloging, the production of tools in Spanish leading to greater standardization of bibliographic description, and to library automation.

Admittedly, information from only five countries from which the OAS obtained information in responses to questionnaires cannot lead to definitive conclusions about the state of library and information services in all of Latin America and the Caribbean, although it does demonstrate what has gone on and is going one in a segment of Latin America which does include some of the well developed systems and subsystems, as well as of important examples of library automation.

It can be seen from information available that the creation and maintenance of national information systems and subsystems are most successful in medium-sized and smaller countries such as Colombia and Venezuela and in Jamaica, generally where there has been an active and vocal group of specialists and information

users and purveyors who have been involved in promoting legislation in support of a national information system, and where there are adequate networks of libraries to support an information system. In large countries, even where there have existed national councils for science and technology, it has been difficult to create active national subsystems of scientific and technological information. On the other hand, many countries which have not yet developed national systems or subsystems do possess active information centers which can serve as focal points for the eventual creation of national systems.

The following paragraphs describe library and information systems in six selected countries of Latin America and the Caribbean, as revealed in the literature search and the dispatch of questionnaires devised to acquire information related to the library infrastructure for information systems as well as of equipment available for automated library and information services. Data was received for the OAS study mentioned previously from some 40 information systems and subsystems and 19 library networks of which 16 are in Colombia, 2 in Costa Rica, 19 in Mexico, 10 in Peru, plus 4 regional information systems, and 8 in Venezuela. To these five countries have been added Jamaica and Barbados with information from the literature search, even though the questionnaires were not sent to Jamaica.

A. Colombia.

Effective government support for a unified national information system was facilitated by changes in governmental and institutional structure in the early 1970's, in the creation of "descentralized

institutes" which could share responsibility for different types of library and information networks. As a result, the National Information System (SNI) is operated by the national science foundation COLCIENCIAS, in collaboration with the Colombian Institute for the Development of Higher Education (ICFES). ICFES,for its part, also has responsibility for overall and university library development and for the Sistema Colombiano de Bibliotecas de Instituciones de Educación Superior. COLCULTURA, the Colombian Institute for Culture, has responsibility for the National Library, for the National Archives and its national archival subsystem , an d for developing a network of public and community libraries especially in the Casas de la Cultura throughout the country, as well as for reprinting outstanding works of Colombian literature. The Ministry of Education remains responsible for a network of school libraries.

The National Information System, created in Colombia by decree in 1973, doubles as a national subsystem for Scientific and Rechnological Information, maintained by COLCIENCIAS. In its national plan, Colombia groups all types of information institutions into two categories: 1) networks by institutional types such as networks of school, public, and university libraries; and 2) specialized subsystems by topics such as agriculture, health, education, etc.

Nine specialized information subsystems function in Colombia, two of them in the Ministry of Health and one in education. Specialized institutions are responsible for others: in agricultural

sciences (SNICA) at the Colombian Institute of Agriculture (ICA); in economics and administrative science (SNICEA) in the Chamber of Commerce Library in Bogotá; in energy resources (SNIRE) in ECOPETROL (the Empresa Colombiana de Petróleos); in industrial information (SNII) in COLCIENCIAS; in maritime information (SNIMA) in the National Navy; and in natural resources and the environment (SNIM) in the Institute for the Development of Natural Renewable Resources (INDERENA). In the planning stages are subsystems in tourism at the NAtional Tourist Corporation; in population at the National Planning Department's Population Division; in anthropology at the National University's Department of Antropology; and in telecommunications in the National Telecommunication Office.

In addition to national networks of school, public and university libraries, there are six regional library committees which function as integral parts of SNI for the different geographical regions of the country, and three groups of specialized information units in the areas of Medellín, El Valle, and the Coast.

Insofar as elements of the library infrastructure for information systems are concerned, much has been accomplished in Colombia at the national and regional levels by cooperative endeavors such as the study and adoption of ISO standards; the development of subject headings in lists and thesauri; regional and national union lists of serials; a union catalog of analytics of periodical articles produced by university libraries; and a cooperative cataloging plan for university libraries. The cooperative cataloging plan is being automated on the basis of Mexico's LIBRUNAM system.

B. Costa Rica

Although Costa Rica does not yet have a national information system, it was hoped that the decree creating a National Information System for Development might be implemented in 1982 by the OFIPLAN, the National Planning Office for Economic Policy. Responsibility for creating a subsystem for science and technology rests with CONICIT, the National Council of Scientific and Technological Research. There are subsystems in industry, agriculture and health, and educational information services are provided even though a subsystem as such does not exist.

Information services in the field of energy form part of the subsystem of the Executive Secretariat of Planning of the Sector of Economy, Industry and Coomerce (SEPSEIC). A System of Libraries, Documentation and Information is maintained by the University of Costa Rica for its main and regional campuses, but does not include the services of other universities in the country.

C. Jamaica.

Jamaica has a well-planned National Information System supervised by a National Council of Services of Libraries, Archives and Documentation, with adequate legislation to support it. For its effective operation it depends on the National Library created in 1978 on the basis of the former library of the Institute of Jamaica, on the Jamaica Archives and Records Centre, the JAMAL Foundation (Jamaican Movement for the Advancement of Literacy), and the efficient Jamaican Library Service for school and public libraries. Furthermore, national centers for liaison with inter-

national and regional information systems include the Network of Social and Economic Information (SECIN).

Jamaica collaborates with regional information systems to which it sends bibliographic information, including: CARISPLAN of CEPAL and its CARISPLAN Abstracts; the Caribbean Agricultural Research and Development Institute (CARDI); the Caribbean Community (CARICOM); and AGRINTER of IICA and CEPAL's CLADES.

D. Mexico.

The National Council for Science and Technology (CONACYT) of Mexico legally has responsibility for the development of a national information system as well as of a subsystem for scientific and technological information, since its creation in 1971. A semi-autonomous agency INFOTEC has served as a model of information service to industry for similar services in other countries. It was developed originally as a function of CONACYT. Another agency of great importance created by CONACYT is SECORI, created to coordinate and facilitate the consultation on-line of national and foreign information data bases. In addition to the technological information system developed by CONACYT which became INFOTEC, CONACYT in its early years carried out a parallel program as a planning and coordinating function for a national information system.

Furthermore, in its early years CONACYT developed plans for a fellowship program for training university librarians in post-graduate schools of library and information schools in the United States, as well as plans to improve the holdings of provincial university libraries, for automating a union catalog of the holdings

of some dozen scientific libraries and publishing a union list of serials held by libraries in Mexico. With administrative changes in CONACYT, came changes in priority activities of the Council and activities related to creating a national information system or subsystem in science and technology were down-graded.

Many activities and services of specialized libraries and information centers provide the basis for national sectorial information subsystems and subsubsystems, even though they have not been given official status as such. The Information and Documentation Center of the National Institute for Nuclear Research (ININ/CIDN) is one of the most effective of these, with on-line access to INIS in Vienna. It has taken steps to create a national information subsystem in energy.

Furthermore, efforts have been made to create information subsystems in chemistry, metallurgy, arid zones, cattle production, telecommunications and transportation on the basis of existing services and centers.

Other fields covered by information serfvices or subsystems include: statistics, geography and informatics in SENEGI; programming and budget and administrative sciences in SPP/CTCCD; health through CENIDS and its regional centers CRIDS; labor in INET; patrimony and industrial ppromotion in SEPAFIN; marine information; of the Federal District (SID); and agriculture in SNIA.

The National Autonomous University of Mexico (UNAM) has developed two important systems: 1) that of the General Library Directorate (UNAM/DGB); and 2) of the Center for Scientific and

Humanistic Information (UNAM/CICH) to provide information services for the university's more than 5,000 researchers.

CONACYT, in addition to SECOBI, maintains in its Scientific Development Directorate reponsibility for the development of the national scientific and technological information subsystem and supervision of the activities of the OAS-sponsored Multinational Center for the Transfer of Autoamted Bibliographic Information for the development of the MARC/MARCAL system for Latin America.

In addition to the information subsystems, various library networks are in operation, two of which are of university libraries: the library system of UNAM and the network of public university libraries (REBIMEX) in provincial capitals which has an agreement with the National Library for the cataloging of 16th to 19th century books held by member libraries. The LIBRUNAM system, as stated previously, was developed by UNAM/DGB to centralize the cataloging of the holdings of the 165 libraries of the UNAM system, using the MARC format and MARC tapes. The Autonomous Metropolitan Universities of Mexico City (UAM) are considering utilizing the LIBRUNAM system and data base, as well as other libraries and library systems in Mexico.

A network of public libraries is the responsibility of the Division of Publications and Libraries of the Secretariat of Public Education, with centralized acquisitions, cataloging and building construction programs in provincial capitals, with the collaboration of state governments. The General Archives is developing a national archival system on the basis of two subsystems, of historical and

administrative archives.

E. Peru.

A National Network for Development has been in the planning stage for several years. Various meetings at a national level have dealt with the proposal. In the National Plan of the Government for 1980-85 there are included policy statements and objectives of such a network. The National Council of Science and Technology (CONCYTEC) and its National Center for Scientific and Technological Information and Documentation (CENIDCYT) have responsibility for developing a National Network of Scientific and Technological Information (RENICYT). It is hoped that during the five-year period CENIDCYT may have adequate resources to initiate activities leading to the maintenance of a national union list of serials, a national inventory of information resources, the dissemination of information in microform, the organization of training courses and continuing education in library and information sciences, as well as the production of newsletters of scientific and technological information, and the creation of specialized sub-networks to form eventually part of RENICYT.

The interest of the Peruvian Government in the development of information systems is evidenced in the educational information system (SISNIDE) which functions within the Ministry of Education, with regional information centers (CENDIE and CREDIES, now called CEDDIES), as well as in the recent creation of a national network of school libraries and of professional training. As a responsibility of the National Library a network of public libraries has existed for many years, located in the Office of Public Libraries

(OBIPU). The development of a national information system in the field of Culture had its beginnings in a recent meeting on the subject held in Lima, with assistance from the OAS.

Interest in unifying existing information and library subsystems is a natural outgrowth of the large number of them such as the following: in petroleum resources, in PETROPERU(Empresa de Petróleos del Perú); in industrial standards in ITINTEC(Institute of Technical Research in Industry and for Industrial Standards); of mineralogy in the Mineral Enterprise of Peru; of fishing in PESCAPERU, the Fishing Enterprise of Peru; in nuclear energy in the Peruvian Institute of Nuclear Energy, with ties to the INIS system; in productivity through CENIP (National Productivity Centers); in economic and social matters through ABIISE (the Group of Libraries for the Integration of Information in the Socio-Economic Field); in biomedicine through the Information Center of the Colegio Médico del Perú, with its conenctions to BIREME in São Paulo; in agriculture through two systems, of a national network REDAGNIGO, the subsystem REDINA maintained by the National Agricultural Library affiliated with the National Agrarian University in accord with the Association of Agricultural Librarians and Documentalists of Peru (ABYDAP), and the other REDAGRYCO of the Documentation Center of the Agrarian Sector, which contribute to the AGRINTER and AGRIS information systems; and in telecommunications in RENIDTEL: of the National Institute of Research and Training in Telecommunications; in housing in the REDINAHVI network of the Ministry of Housing and Construction's Center for Documentation and Information in Housing and Construction (CENDIVIC); with an additional national network in drinking water and sanitation (SENAPA) of the National Service of

Drinking Water and Sewage as a national focal point for REPIDISCA, in the planning stage.

Efforts are being made to bring into existence a network of university libraries through an alliance between CENIDCYT and the National Council of Peruvian Universities (CONUP). A branch of the Peruvian Association of Librarians, the Group of University Librarians, is active in promoting such a network.

Lastly, as a subsystem of the National Statistical System an Educational Statistics System operates as a function of the National Statistical Institute (INE).

Regional information systems with headquarters in Lima are described in a later section.

F. Venezuela.

SINASBI, the National System of Library and Information Services of Venezuela, was created by decrees of 1976 and 1978, based on the NATIS concept of UNESCO, to cover the Humanities, Science and Technology, archives, statistics and informatics. The development of SINASBI is a function of C ORDIPLAN although its Technical Secretariat was initially located in the National Library. The National Library was converted by law into an Autonomous Institute National Library and Library Services, INBINA, for greater autonomy of action than provided by its previous location.

A National System of Scientific and Technological Information (SINICYT) became the responsibility of the National Council of

Science and Technology (CONICIT).

The National Library was made responsible for developing a network of public libraries throughout the country in provincial capitals and in coordination with state governments, as well as for developing improved library services in the National Library through improving its collection of Venezuelan publications and automating its national bibliography. The improvement of its Venezuelan collection and the automation of its national bibliography through a contract with Northwestern University and the application of the NOTIS-3 system of Northwestern has been described in previous pages. The General Archives of the Nation is responsible for developing a national archival subsystem.

SINASBI was left, unfortunately, without a budget for 1982, although its legal personality was retained. CORDIPLAN is seeking funds for its operations.

The structure of Venezuela's national system is a descentralized and coordinated one, composed of various elements: 1) information networks; 2) regional information centers for the information needs of the different geographical regions of the country; 3) specialized information centers which are functionally oriented toward the priority areas in science and technology and in socio-economic development, all integrated into the national information network.

Also forming part of SINASBI are coordinating nuclei, working groups, library networks, and information subsystems. The four entities functioning as coordinating nuclei are: 1) INFINA as the coordinating nuclei of library services and of Humanities information;

2) the National Council of Scientific and Technological Research (CONICIT), acting as a coordinating nucleus for the SINICYT, which also includes university and specialized libraries and other informational units in the area of science and technology; 3) the Central Office of Statistics and Information (OCEI) as the coordinating nucleus for the System of Statistics and Informatics; and 4) the General Archives of the Nation (AGN), a dependency of the Ministry of Justice, for the national archival system.

Information networks have developed as subsystems of SINICYT in the fields of biomedicine, socio-economic matters (REDINSE), in engineering, architecture and related subjects (REDINARA), in housing and urban development, and in nuclear energy. The Network of Information in Petroleum and Petrochemicals (RIPPET) is located in the privately financed INTEVEP, the Center of Petroleum Research and Development in Venezuela.

In addition to the National Library, SINASBI includes various library networks, some 16 networks of public libraries in Caracas and in the states, with four new public library networks in the planning stage. In order to provide library services to the largest possible number of users, the public library networks are to be coordinated with the school library network which functions in the Ministry of Education with the collaboration of the privately supported Ban co del Libro. The National Library must provide advisory services to the school library network whenever it is needed.

A decree of 1978 calls for the creation of a network of central specialized libraries in each Ministry of the National Government, to be related to the National Library. In addition, there are some 425 documentation centers in science and technology in the country, related to CONICIT. A network of information units in the Humanities were to be created for which the National Library is responsible.

Headquartered in the Central Library of the Central University of Venezuela in Caracas is the University Library Network. A network of university libraries of the Institutes of Higher Education of the National Council of Universities and Institutes of Higher Education (CNU)is directed out of the Planning Office of the University Sector (OPSU). They function in collaboration with CONICIT and indirectly with INBINA.

G. Barbados.

Technical assistance has been given to Barbados by IDRC for the planning of BLAIN, the Barbados Library, Archive and Information Centre Network.

V. Regional Information Systems.

A number of regional information systems have been created in more or less recent years, some of them sponsored and either partially or wholly supported by the specialized agencies of the UN family, some by the specialized organizations of the Organization of American States, and others with the support of Canada's IDRC in the field of developmental science. Many of the regional information systems are affiliated with international information systems and contribute bibliographical information to them.

A. AGRINTER of the Inter-American Institute of Agricultur al Sciences.

AGRINTER is the inter-American component of AGRIS of the Food and Agricultural Organization, and is maintained by the Inter-American Institute of Agricultural Sciences in San José, Costa Rica. Based on a network of agricultural libraries created by the Institute (IICA) over a period of forty years, bibliographical data produced in each country and in IICA is forwarded to AGRIS. From the AGRINTER data base the Indice agrícola de América Latina y el Caribe is produced. The organization of the network and of the information system owes part of its success to the activities of the Inter-American Association of Agricultural Librarians and Documentalists (AIBDA) , to financial support from the members of IICA as a specialized organization of the OAS, to financial assistance from the Rockefeller and Kellogg Foundations and from Canada's IDRC, and to the interest of the National Agricultural Library of the United States.

IICA/CIDIA is now offering a retrieval package to Member states for use of the information included in AGRINTER. (It has also converted the AGRINTER format to ISIS, which is used for retrieval.) It is hoped that the AGRINTER data base can be transferred with IDCR assistance, to five countries (perhaps Trinidad, Colombia, Venezuela, Honduras and Peru) and that their capacity to provide information can be reinforced, such as with SDI services from the AGRINTER data base.

B. BIREME (Regional Medical Library) and PEPIDISCA of the Pan American Health Organization.

The Regional Medical Library (BIREME) located in São Paulo was created with the collaboration of the Pan American Health Organization and the National Library of Medicine of the United States, and other organizations, for the utilization at least in South America of the MEDLARS and MEDLINE tapes. Its data base, now on-line in Brazil, was designed to use not only the MEDLARS

tapes but to add to them data on Latin American publications in the biomedical field. Copies of documents cited are provided by BIREME. Plans have been made to develop similar regional centers.

REPIDISCA, another information system developed by the Pan American Health Organization (PAHO) at its Pan American Center for Sanitary Engineering and the Environment (CEPIS) in Lima, deals with the fields of sanitary engineering and environmental sciences. REPIDISCA also has an automated data base developed with the application of the ISIS format.

C. Regional Systems Located in Santiago de Chile.

A regional network for educational information and documentation (REDUC) is maintained by the Center for Research and Development in Education (CIDE) in Santiago de Chile. Its geographic coverage of Latin America and the Caribbean coincides with that of the UNESCO Regional Office on Education for Latin America and the Caribbean (OREALC), also located in Santiago. REDUC covers all levels and types of education whether formal or informal. It depends on the collaboration of national centers and regional subsystems. Its affiliation with OREALC and the International Office of Education includes the means of putting its products at the disposal of international usage. Some 2,000 abstracts had by the first semester of 1981 been produced in its Revista de Resúmenes en educación. The original documents it receives from Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Paraguay, Uruguay and Venezuela are processed and distributed in microfiche.

Other regional information systems in Santiago include those sponsored by CEPAL and its Latin American Center for Economic and Social Development (CEPAL/CLADES) such as the INFOPLAN system, and

of CELADE (the Latin American Center for Demography) with its system DOCPAL for recording bibliographical data and providing a document delivery service.

D. Other Regional Systems.

In addition to REPIDISCA mentioned earlier, three other regional subsystems are located in Lima: the Network of Educational Information for the Convenio "Andrés Bello" countries of the Andean Pact nations (RIDECAB); the Andean System for Technical Information (SAIT); and RIALIDE of the Latin American Association of Financial Institutions for Development (ALIDE).

In the process of formation are other regional information systems RITLA (the Latin American Network for Technological Information); SILADE (A Latin American Documentation System sponsored by UNESCO); and OLADE of the Latin American Energy Organization headquartered in Quito.

Subregional information systems are being created in the Caribbean, such as: CARISPLAN sponsored by CEPAL, and Caribbean Information, and in Central America the system of ICAITI in Guatemala aided by the OAS, in the field of industrial technology. Another OAS specialized organization, the Inter-American Indian Institute in Mexico City has created a service (SIDIAL) to provide documentation services on Indian affairs for Latin America. Before creating the service the Institute undertook studies to determine the characteristics of the production of information on Indian groups, and analyzed the nature of the users of this type of informa-

tion. It found the principal producers to be governmental organizations and academic institutions. The materials tended to be of a fugitive nature, difficult to obtain, and the institutions producing it were likely to be unstable and subject to political whims. Much of the publications in this field tended to be found in the Latin American Library of the University of Texas rather than in Latin American institutions. Therefore, SEDIAL would have to depend on the good will and cooperation of national coordinating centers in the various countries to produce national directories of institutions issuing publications in this area and to develop the necessary mechanisms to create the documentary services desired.

With the developments made in Mexico in the LIBRUNAM system and in automated cataloging systems in Venezuela, Colombia, and Brazil, and soon to be developed in Chile and perhaps Costa Rica, it is not too early to speak of the development of a MARC/MARCAL system in national bibliographic control.

VI. Library and Archival Networks Forming Part of Information Systems.

Library networks form part of the information systems of all the six countries mentioned. Networks of school, public and university libraries as well as groups of information units in specialized fields are integral parts of information systems in Colombia and Venezuela. Although a national network of university libraries to unite all the universities of the country does not yet exist in Costa Rica, a system of Libraries, Documentation

and Information funcion[s] in the University of Costa Rica for its various campuses. Networks of school add specialized libraries also exist in Costa Rica.

The National Library of Mexico collaborates with the Network of Public University Libraries (REBIMEX) as reported earlier. Activites of the 165 libraries of the UNAM system throughout the country are coordinated by the Dirección General de Bibliotecas (UNAM/DGB) which maintains the LIBRUNAM system for this purpose. National systems of school and public libraries as well as specialized libraries also exist in Mexico.

Various library networks, together with documentation and information centers, exist in Peru, affiliated with the development of a national information system and subsystems, through the office for public libraries of the National Library and through school libraries of the Ministry of Education, and preliminary studies have been made on the proposed formation of a network of university libraries. Specialized library networks are represented by ABIISE (in soc io-economic information), and by agricultural libraries through ABIPAP.

Furthermore, the development of a national information system in Jamaica owes much to the development over many years of the networks of school and public libraries of the Jamaica Library Service.

Of more recent formation are the networks of archives being developed by the National or General Archives of the countries studied, forming part of the planning for integrated national information systems and services.

VII. The Library Infrastructure of Information Systems.

Much progress has been made in recent years in creating a firm basis for library development and standardization, as well as in the development of a structure for national systems of library and information services. Adequate bibliographic control of production of Latin American and Caribbean publications, together with an inventory of the holdings of individual libraries, has received priority attention in the planning of the development programs for libraries and information.

Tools for the internal organization of libraries have been produced in Spanish and some in Portuguese in recent years, many by the OAS or with OAS assistance. Included in these essential tools are the following: a Spanish translation and adaptation to the needs of Latin America of the combined 18th and 19th editions in English of the Dewey Classification system; aSpanish translation of the AACR2 now in press; a revision and expansion of the bilingual list of subject headings of the OAS done originally by Carmen Rovira, produced in the LEMB project of the OAS by ICFES in Colombia in a special project, with a computer printout now in press; and a Spanish translation of the MARC format as MARCAL (MARC for Latin America), and of the authority format. A translation of the Sears list of subject headings is being completed by Rovira for publication by the H. W. Wilson Company.

The authority control of names as well as of subject headings is well under way in the LEMB project in Colombia, as well as in projects in Venezuela and Brazil. An ongoing project to coordinate and further the national auth ›ity oontrol of names and to connect it with the National Authority Control system (NAC) of the Library of Congress would be desirable.

A further example of standardization, it was found in the OAS study of the five countries that the Rovira list of subject headings is the list most used in library and information networks, supplemented by that of Gloria Escamilla in seven systems and subsystems, with the original list of the Library of Congress (LCSH) being used in the same systems. It is presumed that no single list is used exclusively. In addition, for specific terms in medicine the networks of university libraries in Colombia and Venezuela use the MeSH list of the U. S. National Library of Medicine, and Sears in used in 2 systems. Nine systems compile lists locally, based principally on the lists mentioned in accordance with local needs. Various thesauri are also used, especially those of OECD (Organization for Economic Cooperation and Development) for economic and social terms, and for educational terms ERIC and EUDISED (the European Documentation and Information System for Education), both of which have been translated into Spanish.

All of the 17 systems and subsystems reporting to the OAS study use the Dewey Decimal Classification System either in the original English edition or in Spanish translation, or both, and of this number 5 also use the Library of Congress system. Another 4 use LC exclusively.

Centralized cata loging services are reported by 11 information systems and subsystems and 6 report cooperative cataloging programs. Centralized cataloging services as well as cooperative programs are reported by Colombia's libraries. The Library, Documentation and Information System of the University of Costa

Rica offers a centralized cataloging service for the libraries of Central America as well as for its own libraries and those of the country, through its Centro Catalogr áfico Centroamericano, as mentioned previously. It can provide catalog card sets for the new books it catalogs in addition to publishing a Boletín bibliográfico with cataloging data for subscription purposes. At present an evaluation of the bulletin is under way to assess why it is not being more widely used by university libraries of the region.

Mention has also been made of the centralized cataloging services of the LIBRUNAM system for the 165 libraries of the university system in Mexico. By providing microfiche sets of its union catalog to all university libraries in Mexico, it can be said that UNAM does provide centralized cataloging services for all university libraries in the country. It also generates card sets for interested libraries.

Great strides were made in recent years in Mexico in the expansion of the public library system and by the centralized cataloging services offered them by the Division of Publication and Libraries of the Secretary for Public Education (SEP). Centralized cataloging services for Mexican publications are rendered by the National Library in its production of the Bibliografía mexicana and by its cataloging of 16th to 19th century publications for REPIMEX.

Centralized cataloging services are provided by the school library network of Peru as well as by the agricultural library

network REDINA.

Being developed at present on a national basis in Colombia is a cooperative cataloging program for university libraries by ICFES with OAS assistance with its automation, using the LIBRUNAM system. The cooperative cataloging service of the Office of Public Libraries of the National Library of Peru is extended to public libraries. A cooperative cataloging service is being planned for the school library network of Venezuela. The information network of Petroleum and Petrochemicals (RIPPET) of Venezuela also maintains cooperative cataloging services.

Essential to the functioning of information systems at a national level is the compilation of union catalogs of books and union lists of serials held by libraries for adequate document delivery service. It was learned in the OAS study that from 45 to 100% of the component members of systems and networks participate in the compilation of such union catalogs and lists, which are maintained in many forms. Some are in card file form, at both the national and regional level, and some have been published, at times by computer assistance. The union catalog of Argentine publications held by the University of Buenos Aires libraries, maintained at its Instituto Bibliotecológico (IBUBA) was recently published by G. K. Hall of Boston.

Some of the catalogs have been automated such as one of Colombia and one in Mexico, with 2 in Venezuela and a third one in that country in the project stage. Union lists of serials have been automated in several countries and published from the

data base in Argentina, Brazil , Mexico and Venezuela. It is not known if any of these data bases are accessible on-line.

Another essential component of the infrastructure of information systems is access to the indexes of periodicals. The bibliographical control of the contents of Latin American journals is especially important because much of the results of research and development in the region is reported in that format rather than in book form. Unfortunately, the periodical indexing done by the Columbus Memorial Library was dropped years ago, but subsequently revived in a cooperative project of the Seminars on the Acquisition of Latin American Library Materials (SALALM) through the Hispanic American Periodicals Index (HAPI), published by automated means by the University of California at Los Angeles. Until recently there were few indexing and abstracting services dealing with periodical articles of Latin American origin.

Some steps were taken by the National Autonomous University of Mexico (UNAM) to resolve some of the information problems even before the institution reached its present proportions of 300,000 students and 20,000 faculty members. The first step was to bring all the libraries into a system coordinated by the Dirección General de Bibliotecas (DGB). The second step was to create the Centro de Información Científica y Humanística (UNAM/CICH) to analyze and index journals as a basis for specialized bibliographies and computer-produced indexes, as well as to provide SDI services to researchers based on user profiles.

UNAM/CICH now produces three important indexes to journals from automated data bases:

- CLASE: Citas latinoamericanas de sociología, economía y humanidades. 1976-. Quarterly.
- Periódica: índice de revistas latinoamericanas. 1978-. Quarterly. An index to Latin American journals.
- Bibliografía latinoamericana. 1982-. Twice yearly. Contains articles published by Latin American authors in foreign journals and articles on Latin America published in foreign journals.

Unfortunately, because of lack of interest in it the SDI service Alerta has been suspended.

CICH's impact on information problems in Latin America would be hard to assess. Its potential is even greater than its current influence, m oreover. This may be attributed to the fact that some libraries and information centers wish to index journals as an institutional means of giving information services to their users. Of great help would be the merging of the data from the different indexing services into one data base which could provide rem ote access to it on-line.

Information on the indexing of national journals was indistinguishable from that on the indexing of journals from other sources in the data supplied to the OAS for its study. However, much duplication of effort can been seen in the indexing projects carried out by information systems in Colombia, Costa Rica, Mexico as well as in subject fields. In order to achieve greater coordination of these indexing services and those of UNAM/CICH and HAPI, the OAS plans to hold a meeting of representatives of indexing services during the present biennium.

It was found that the data banks of periodical articles maintained not only by CICH and HAPI are automated, but also those of ICFES of Colombia, and the National Library and SINICYT of Venezuela and of various of the regional information systems. If all of them were to use the MARC analytics format, the records could be merged into a single file and broader coverage achieved by each institution. Exploration and planning is needed to make the results of indexing programs of all the institutions more widely available and used, as well as to seek grater coordination of projects on a standardized basis.

It may be assumed that most of the systems and subsystems of Latin America and the Caribbean provide traditional reference services. However, reports from the 40 systems and subsystems reporting to the OAS are very uneven with respect to the kinds of user services rendered.

Bibliographic searches are made by 20 systems and subsystems in Colombia, Mexico, Peru and Venezuela in manual form in at least 10 of them, an d on-line with data bases in 7 systems in Mexico and Venezuela prinnipally through DIALOG, ORBIT and BRS, aswell as with INIS in Vienna by a subsystem in Mexi co. The cost of the on-line service varies, of course, with the data base accessed and with telecommunications costs.

SDI services are provided on a manual basis in 13 systems and from magnetic tapes in systems in Mexico and Venezuela, using automated data bases. Photocopies of title pages of journals are made for current awareness services by 21 systems especially in the fields

of agriculture, education, energy, finance, housing, petroleun, technology and telecommunications, financed usually by the component members of the system or by the focal center. Greater cooperation among the countries in this area could also avoid duplication of efforts and uosts.

In 20 systems translation services are rendered. New efforts should be made to revive the UNESCO-sponsored center in Latin America for translations now closed because of the lack of cooperation from other countries.

Great strides have also been made in recent years not only in home loans by individual libraries but by strengthening their document delivery systems through increased inter-library loan services. Photocopy and microform copies are ..... provided frequently in lieu of the loan of original documents and are obtained from the retrieval services of the information services mentioned as well as from INIS, NTIS, ISIS and PASCAL. The libraries most frequently used for inter-library loan requests are the Library of Congress, the National Library of Medicine and BIREME of São Pauo, and the British Lending Library.

In 14 systems user interests are identified in user studies, and user profiles are made in 10 systems in Colombia, Mexico, and Peru. 13 systems and subsystems carry out user training programs by various means.

Observations.*

From the foregoing report it is apparent that great strides have been made in the last dozen or so years to achieve improved access to the world's knowledge and information through improved bibliographic control, and to make it available to users in Latin America and the Caribbean. Computer technology merged with telecommunications facilities has improved access to information sources through improved storage and retrieval activities as well as to enable the transfer of data and information of all kinds to be made more quickly and easily. Existing documentation and information centers have been used as focal centers for the development of national, regional and sectorial information centers and services and new ones have been created when necessary.

On the other hand, perhaps because of a lack of knowledge of what has been going on in other countries and frequently within a single country, much duplication of effort can be seen, with the corresponding waste of money. However, much has been achieved when good principles of coordination have been applied and good cooperative and centralized services have been created, where thorough planning has taken place, and where there has been adequate financing and necessary legislation enacted, and where there has been effective standardization of methods and techniques applied and of the mechanisms used to assure compatibility among new information systems and subsystems as they are created.

Therefore, it behooves those concerned with the national and regional development of Latin America and the Caribbean to seek

* These Observations are taken from the paper prepared by Shepard, entitled "The Present State of Information Systems and Bibliographic Data Bases in Latin America and the Caribbean" written for the Conference on the Transfer of Scholarly, Scientific and Technical Information Between North and South America, Ann Arbor, Mi. April 1983

means to develop more effective national and regional library and information systems; the automation of bibliographical data and of libraries in accordance with international standards; to create new data bases in strategic fields, and to increase utilization of existing and new ones; to achieve bibliographic control of published works at the national and regional level on the basis of international standards so that the bibliographic record of a work can be created one time only and in the country of origin of the work; to plan new library and information networks based on the identification of "centers of excellence" which can serve as regional, international and sectorial focal points for information systems; to train users in how to identify their information needs and how to use data bases and information systems; to train the human resources required to take advantage of the new technological advances, including the translation into the languages of Latin America of various technical manuals and studies and the preparation of new ones in those languages.

The flow of information to and from Latin America and the Caribbean is of great significance not only to the peoples of the region but of those throughout the world. This means making better known the information generated in Latin America and the Caribbean as well as providing access to people in this region of universal knowledge and information.

Some of the necessary elements of library and information infrastructure for information transfer have been created in some of the countries of Latin America in an effective form, others

exist in only a few of the countries or only in partial form in any one country. Such elements include the compilation of current and regularly produced national bibliographies and union catalogs of books and union lists of serial holdings of libraries and documentation centers; the existence of cooperative and centralized plans such as those of cataloging of books and other materials such as official publications, in accordance with internationally accepted standards; the indexing of journal articles in Latin American and Caribbean periodicals and by Latin American authors in journals outside the area; loan services, especially inter-library loan services and document delivery services; as well as traditional reference services of libraries and other information units.

Automation, which can provide faster access to information provided in these elements and to a much larger body of data and information than formerly available to information users using manual methods, has been successfully applied. Two factors, however, are of extreme importance in the automation process to achieve the widest access at the least cost, the standardization of form an d the compatibility of format for the presentation of information in automated form. These two factors have not always been applied in automation projects.

A few observations may be in order to determine how the present situation can be used to plan for improvements in the transfer of information. For instance, in the countries studied, union catalogs of books and union lists of serials exist, covering the bibliographical holdings of the principal libraries such as university libraries, a circumstance which bodes well for inter-

library loan purposes. However, it is not known whether such lists and catalogs now in print or in card files are available also on-line, even within the city where they are located. If the same bibliographical standards and compatible automated formats and programs are applied in each country, the data found in different data bases can be merged to provide greater access to the data at less cost than the development of individual unmergeable systems.

Until recent years there was virtually no access to the contents of journals published in Latin America and the Caribbean in which much of the research done in the region is recorded. Much has been done in the last twenty years to correct this situation. Many indexing services have been mentioned in this report. However, frequently individual indexing projects have been undertaken to provide immediate access to the institution's users without those responsible for producing the indexing being aware of similar projects being carried out elsewhere, or having at hand the published products of such indexing services. An effort should be made to coordinate these projects so as to avoid unnecessary duplication of effort and reduce overall information costs, as well as to achieve the automation of such services so as to make the information more widely available and accessible.

Two successful programs achieved in automated bibliographical control and in the control of library collections have been discussed, those of the National Library of Venezuela and of the libraries of the Autonomous University of Mexico in its LIBRUNAM system. Not only are they of importance for the bibliographical

control of their own holdings, but for the transferability of their experience and of the systems themselves to other countries. Together with the data bases also using the MARC format being created by the automated projects in Brazil, Chile, Colombia and in the planning stage in Costa Rica, they can be merged into a Latin American Data Base. Such a data base can be made available in all countries by its reproduction in printed form, in microfiches or on magnetic tape, as well as on-line through telecommunications services. Conversion programs may have to be developed to make this possible.

To facilitate the merging of bibliographic records for all kinds of materials, work will have to be continued on the translation of MARC formats for the kinds of materials for which the formats are not yet available in Spanish.

The two systems mentioned can be utilized to create national and regional union catalogs of books and union lists of serials on an automated basis by the use of a MARC format for holdings. Experience in the creation in the United States of OCLC and other bibliographic utilities as well as in the Sputheastern ARL Libraries Cooperative Serials Project in periodicals holdings should be taken into consideration in creating them.

As a matter of fact, thought should be given as to whether an OCLC-type operation should be supported in Latin America in relationship to the creation of the Latin American Data Base mentioned earlier, which is conceived of as a data base of materials published in Latin America and on the region, and not as an

in Spanish
automated union catalog/of holdings of materials from whatever origin they may be.

the information at hand on
In reviewing/ the computer and auxiliary equipment available and their present products, it would be safe to say that it is underutilized at the present time, and that additional programs could be mounted without additional equipment in many countries.
Mexico micro- and
Experiments in Chile, and Costa Rica in /minicomputers applied to library automation are expected to be significant.

Mexico seems to make the greatest use of U.S. data bases of any country of the region, perhaps because of its proximity to the U.S., making telecommunications costs minimal. The services of SECOBI to facilitate access to these data bases may also be contributing factor. The reduction in telecommunication costs for other countries might increase their use of these information services. The use of European data bases may be increased as a result of a survey presently being carried out by Cuadra Associates to coordinate a project by which some twenty information brokers in the U.S. and Mexico will provide access to an additional 40 European data bases.

With respect to accessing data bases on-line in other countries, it is not known to what extent restrictions have been placed on their use by such national information policies as the barriers constructed
and recently lifted
by Brazil/to constrain the flow of information into that country.

Remote on-line access to Latin American data bases is a topic which requires exploration and development. It is not known to what

extent the data bases of AGRINTER, BIREME, REPIDISCA, or of CLADES are available by on-line access either within or outside the country in which they are located, nor for that matter of on-line accessibility within the country of PRODASEN of legal information for the Brazilian Senate.

In accordance with some of the mandates of the Organization, it has been recommended that the OAS seek the means of creating additional regional information systems and data bases in the fields of Education (perhaps a Latin American ERIC), in Energy based on INIS, in the field of Popular Cultural based on the automated system of INIDEF in Venezuela, and of National Bibliographicl Control based on the Venezuelan and Mexican systems. These fields have been selected not only because of OAS interests in them, but also because the development of information systems would be relatively easy because of the information centers and services already in place in Latin America on which they could be based, and of the experience of international information systems which can be applied.

IX. Implications for the Caribbean.

A. The Library Infrastructure of Information Systems in the Caribbean.

The library infrastructure of information systems seems to need considerable study in the Caribbean. ECLA's Office for the Caribbean has mounted a regional information system in whose development variou agencies are participating in addition to UNESCO, the OAS and IDRC. Alma Jordan, in a new study on "The development of integrated information policies with reference to the English-speaking Caribbean," mentions seven regional agencies: 1) the Caribbean Community (CARICO 2) the Caribbean Development and Cooperation Commission of ECLA's Office for the Carubbean; 3)the Caribbean Council for Science and Technology for which CDCC/ECLA serves as secretariat; 4) UNICA (Association of Caribbean University and Research Institutes) and its Commission on Science and Technology (UNICA sponsored the creatio of ACURIL). 5) the three campuses of the University of the West Indies; 6) the Caribbean Agricultural Research and Development Institute (CARDI) in Trinidad; and 7) the Caribbean Development Bank (CDB). (pp. 10-13)

The lack of the various elements of the library infrastructure, as mentioned by Jordan, such as the lack of union lists and catalogs, a fact that impedes the rapid development of adequate inter-library loan services, must be taken into account in developing regional information systems, and means found to develop them. Groupings of librarians at the national level to serve as pressure groups to assure the development of the necessary library infrastructure is

noted, with mention made of the Trinidad Library Task Force whic h remains to be reinforced. Advanced training possibilities for librarians in the newer information technologies and in library automation are also needed in the Caribbean.

In discussing the planning and research needed in the library and information field, Jordan mentions the following: "Thus, for example user studies and adap tation of library automation systems to suit local circumstances are both needed... The scope and size of the information problem extend well beyond the capabilities of any single nation in arriving at adequate and lasting solutions on its own." She calls for regional and international cooperation for "compatibility harmonization, and ultimately integration of national, for regional and international information policies." (pp. 31-32)

B. Early Exploration of Possible Cooperative Action among Various Caribbean Nations.

1. The Current Caribbean Bibliography.

For many years the Current Caribbean Bibliography was published annually by the Caribbean Regional Library. When the Caribbean Commission ceased to exist, the Caribbean Regional Library was transferred to the University of Puerto Rico in Rio Piedras where it is still located. Although the Government of Puerto Rico promised to automate and bring out the annual volume more currently, only one number was automated, and early experiment in automation.

2. National Bibliography in the Caribbean.

With assistance from IDRC librarians from the various English-speaking nations of the Caribbean have been trained in the application of AACR2, and four of the nations now issue regularly listings of new national publications.

3. Tentative Steps Toward CARIBINET with OCLC Connection On-Line.

With the OAS serving as host, and with travel funds provided by AID, representatives of university libraries from Trinidad, Barbados and Jamaica met together in Washington, D. C., in 1976 with representatives from Puerto Rico and the Virgin Islands to explore the possible creation of a centralized and/or cooperative cataloging project for the Caribbean, before going to Columbus, Ohio, to see the operations of OCLC. Topics discussed included: 1) the linkage of Caribbean libraries with OCLC; 2) mem bership in AMIGOS for OCLC connection; 3) local institutional agreements and operations (manual and automated); 4) interconnection among participating institutions; 5) cataloging principles; 6) development of instruments and mechanisms required for CARIBINET's full operations; and 7) other developments of importance to the development of CARIBINET.

Upon their return to Washington they met with staff of the OAS Library Development Program and high officials of the OAS, and with representatives of AID and the U.S. Office of Education to explore

possible financial assistance in the creation and automation of a CARIBINET to access the data base of OCLC. A visit was made to the MARC Development Office of the Library of Congress. A subsequent AID technical assistance mission toTrinidad recommended a connection between the Trinidad campus of the University of the West Indies and OCLC.

Although there were no positive results of the meetings, the OAS has continued its interest in supporting the development of such a library network and is now giving support to the plan for an information network in the Caribbean initiated by ECLA.

C. THe Potential Use of Integrated Library Systems.

Although the participants in the above-mentioned planning group for CARIBINET were primarily interested in the cataloging aspects of library automation, the experience in the creation of LIBRUNAM in Mexico, the application of NOTIS-3 in Venezuela to both the production of a national bibliography as well as to automated cataloging and other services and products, and the use of microcomputers in Chile for various library purposes, attest to the feasibility of utilizing an integrated library system proven to be effective in the Latin American environment. The production of bibliographic records in MARC format makes it possible to merge them into a Latin American Data Base. The existence of a program in NOTIS-3 in Venezuela to translate bibliographic data from English into Spanish would also permit the translation of data in Spanish to English for the English-speaking Caribbean. Both NOTIS-3 and LIBRUNAM have developed an automated authority control system, and Catholic University in Chile is adapting the ICFES-devised authority control system in

Colombia, based on LIBRUNAM, to microcomputer usage.

On the other hand, the local development of integrated library systems is costly, perhaps as much as $3 million, a fact which also points toward the feasibility of utilizing an existing system. If three countries of the Caribbean and Latin America request the OAS to obtain the license for using NOTIS-3, the expenditure by the OAS of $100,00 would be more than justified.

D. Equipment for an Integrated Library System.

LIBRUNAM was constructed for Burroughs equipment and NOTIS-3 uses IBM and IBM-compatible equipment. Microcomputers can be utilized for single operations such as cataloging, acquisitions, circulation control, etc.

E. Telecommunications Costs.

At the time of the Washington meetings it was hoped that Venezuela might become interested in joining with the interested institutions in the Caribbean so that all might share in the costs of a dedicated line to OCLC. It was estimated in 1976 that the direct line from Trinidad to Columbus, Ohio would cost about $9,000 a month. However, about 25 "drop-offs" are possible, so that the cost per participating institution could be as low as $360 a month, if all shared the costs equally.

An alternative to the telephone costs was informally explored with NASA, that of satellite communication. At that time OCLC seemed not inclined to consider erecting a gr ound station for the satellite communication.

Subsequently, in 1981 a study was made by James H. Kennedy, Director of AMIGOS, for presentation to ACURIL, on telecommunication costs in the Caribbean. In it he discussed such topics as telephone and telegraph lines and their potential for the transfer of data, Telex and TWX public networks, the advantage of a "leased line" over a "switched line," "packet switched networks," and similar telecommunication characteristics. A study of available facilities in the Caribbean is needed to ascertain the current feasibility of an OCLC connection.

In discussing telecommunication conditions in the Caribbean, Jordan calls upon international organizations which would have some influence on national and international protocols "to seek preferential telecommunications rates for libraties as non-profit institutions with an important role to perform in public information dissemination"which so far have not been achieved by various statement and resolutions made in the past. "Initial interests in the possible use of OCLC bibliographic networks in the region have remained alive. Progress has been thwarted partly by delays in the introductio of suitable network linves in Trinidad and Tobago. Only in Barbados has a networking facility been introduced with correspondingly reduced telecommunications rates to make regular information retrieval services possible. Similar network rates are in the offing in Trinida and Tobago and two terminals are likely to be operating there in the near future. The University of the West Indies has also latterly experimented with a dedicated line linking the three campuses with other stations in the Eastern Caribbean for a distance teaching

project. The use of these lines fpr library purposes, including facsimile transmission has been mooted and is currently being explored." (pp.23-24).

F. Alternatives to an On-Line Telephone Connection to Automated Data Bases.

1. Manual Production of a Regional Bibliography.

On the basis of existing national bibliographies being produced, a current bibliography of the Caribbean could be resuscitated if one institution were willing to assume the responsibility. Plans should be made, also, to close the gap between the list volume of the Current Caribbean Bibliography and any new version.

2. Cataloging Data in MARC Format from Other Sources.

Although the full 10 million title data base of OCLC's cataloging resources would not be available, a large amount of data in the MARC format can be found in the MARC tapes themselves, in the National Union Catalog (NUC) of the Library of Congress, and on MARCFICHE (of the MARC Auxiliary Research Company of Washington, D. C.) now used by some 1400 libraries around the world. A regional cataloging center on a centralized basis such as the Centro Catalográfico Centroamericano of the University of Costa Rica might be set up in the Caribbean, and/or on a cooperative basis such as that for university libraries in Colombia.

3. Adoption of an Existing Integrated Library System.

Because of the application in the FOCUS system's modification of NOTIS-3 by the University of Florida Libraries, which have for years made a special effort to collect items from the Caribbean, it is suggested that libraries of the Caribbean give special thought to the use of the NOTIS-3 system in their library network, even though they may need to utilize IBM-compatible microcomputers in their individual libraries.

4. Proposal for a Pilot Project with a Coordinating Center or Centers in the Caribbean and a Cooperating Center on Mainland United States.

Steps to develop the needed techniques and mechanisms for the creation of a library network in the English and Spanish-speaking Caribbean are proposed as interim measures until the telecommunications problems are resolved, making it possible to benefit by OCLC bibliographic data in the meantime.

Initial efforts for a connection to OCLC are suggested to be made through a cooperative pilot project which would involve acceptance by one or two institutions in the Caribbean to provide centralized services, and one on the mainland to function as a "switching center". Perhaps it might be well to think of two centers in the Caribbean, one for the Spanish-speaking countries and one for the English-speaking countries.

a. Procedures Suggested.

Bibliographic information on local publications would be input into the OCLC DATA BASE by the Caribbean Center through the mainland library and from it to OCLC on-line.

The procurement of bibliographic data of non-Caribbean origin would be achieved by sending microfiche copies of title pages of the work to be cataloged to the mainland library. It, in turn, would access the data in its own data base or in OCLC, copy it out and convert to copy to microfiche to send to the cooperating library and/or center in the Caribbean. Microfiche should be used for both the data on Caribbean publications and non-Caribbean publications because of its relatively inexpensive airmail cost. A regular mailing schedule of microfiche should be agreed upon, such as weekly.

For items not in the OCLC or mainland library data bases, the individual library would catalog the material and send the data directly to the mainland library or to a Caribbean center for dispatch to the mainland library, for transmission to OCLC.

The Caribbean center or centers would maintain a Caribbean Data Base in machine-readable form, if it is determined that the project should be automated from its inception, as well as a union catalog of the holdings of Caribbean libraries participating in the project. Tapes of this information could be forward to the proposed Latin American Data Base in Venezuela. Bibliographic information Caribbean materials could be sent on tapes to the Library of Congress, perhaps in exchange for receipt of the MARC records on the Caribb ean from the Library of Congress.

b. Institutions Suggested as Possible Cooperating Centers.

Because of past interest in an automated cooperative cataloging

project, the Library of the University of the West Indies in Trinidad is suggested as one Caribbean cooperative and/or centralized cataloging center for the English-speaking Caribbean. Because of its experience in centralized cataloing, it is suggested that the Inter-American University of Puerto Rico might be used as a center for the Spanish-speaking Caribbean. The UWI library would begin by creating a network of the UWI libraries and add other institutions as convenient and feasible.

Staff of the University of Florida Libraries, from the Director down, have expressed enthusiasm for serving as a switching center between the Caribbean and OCLC.

c. Telecommunications Alternatives.

The use of microfiche sent between the Caribbean and the US mainland library obviates the need for telecommunication between libraries of the Caribbean and OCLC. However, because of the obvious advantages for an on-line connection to OCLC, this procedure could be considered an interim measure until telephone costs are reduced or means are found for feasible telecommunication via satellite or a radio frequency used by ham operators can be explored.

Other alternative means of connection between the Caribbean libraries and OCLC might be explored similar to the method understood to be used by INTEVEP (the Petroleum Technological Institute) of Venezuela which uses a Shell Oil Company's line to New York and from New York to Ohio by a time-sharing network. At one time some thought was given to the possibility of using on an after-hours basis the line which the Government of Puerto Rico maintains to Washington,

D.C., for an OCLC connection to Puerto Rican libraries.

d. Anticipated Results and Products.

The proposed plan can be operated on a manual basis resulting in a card file of Caribbean imprints and works on the Caribbean, as well as a union catalog of holdings, or if it is automated, in an automated data base.

If the system is to be automated, care should be taken to assure that the bibliographic records are in the MARC format, using equipment that is compatible with the system chosen, so as to lessen programming costs and further complications.

If the NOTIS-3 system, or its FOCUS version, is selected, it will simplify the merging of the data from the Caribbean Data Base into the Latin American Data Base and vice versa.

Among the results to be anticipated from the proposed plan would be the following:

-- Cataloging data for Caribbean libraries provided for most of the books to be cataloged by Caribbean libraries, in machin e-readable form.
-- An increased amount of data on new Caribbean publications to be located in the OCLC and University of Florida data bases, thereby increasing availability of information on the Caribbean for U.S. users.
-- A Caribbean Data Base which could be merged with a Latin American Data Base or maintained separately, available on-line, or through magnetic tapes or microfiche to other

libraries.

-- A union catalog of holdings of Caribbean libraries for inter-library loan purposes.

-- Card sets for libraries desiring them.

-- A retrospective cataloging project can be added for data on works previously cataloged and in the OCLC data base.

-- To the Caribbean Data Base can be added the Caribbean holdings of the University of Florida included in the G. K. Hall catalog.

-- A vast setp forward toward Universal Bibliographic Control on a regional basis.

e. Planning of the Project.

Perhaps the first step in planning the Pilot Project would be a feasibility study to gather information required to launch such a project, including visits to the locations of the libraries interested in participating to bbtain information, assess the present computer faciliti es and other necessary equipment such as for microfiche production and print-outs, and attempt to determine the possible commitment of the institution to the project.

f. Funding for the Project.

Possible sources for funding the feasibility portion of the project include the Tinker Foundation, the Council on Library Resources, the OAS, UNESCO and IDRC. For carrying out the project, in addition to the funding of some aspects by both the University

of Florida and the collaborating institutions of the Caribbean, funding for a 5-year period might come from the National Endowment for the Humanities of the Unkted States, from AID, through the Caribbean Basin Initiative, or through the OAS, UNESCO or the Inter-American Development Bank.

April, 1984.

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