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INDUSTRIAL INFORMATION SERVICES
IN ASIA AND THE FAR EAST 1/

by

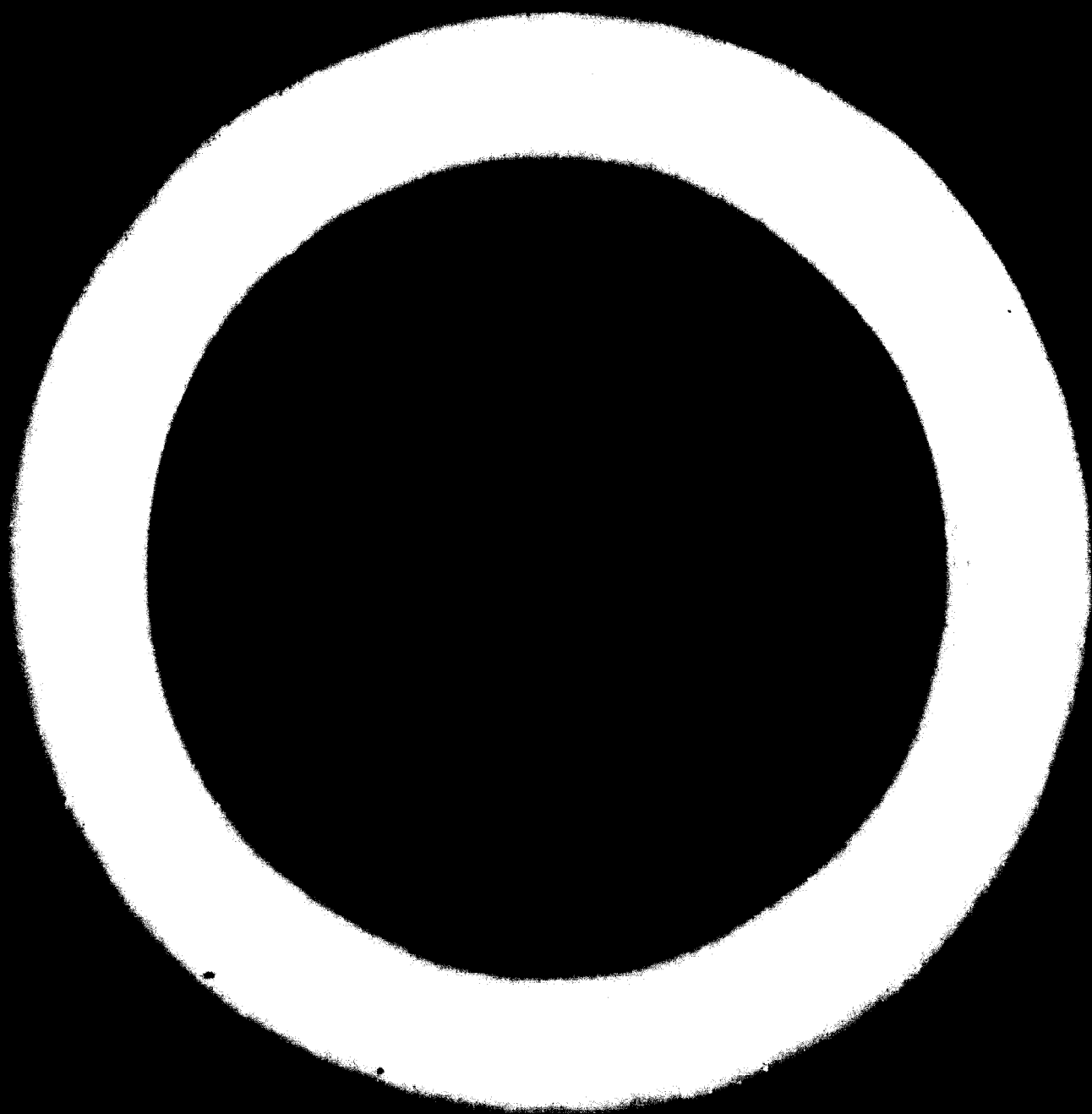
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1. The present state of industrial information services;

Every background study of the present state of industrial information and documentation services in the countries of Asia and the Far East is bound to start with a number of banalities, such as a statement about the different levels of socio-economic developments of the countries of this region, as well as some remarks on the too well known disparity in the field of industrialization between these countries. It is obvious that the intensity of demand for industrial information in different countries has to be different in quantity as well as in quality.

A country like Japan with all its industrial achievements and its long industrial traditions has, of course, an entirely different demand for industrial information than Afghanistan or Nepal, where industrial age has hardly begun yet. Likewise, it cannot be expected from a developing country to establish overnight well-equipped and smoothly functioning information centres for industry. And if it does, one cannot expect that the industry, which in many cases neither recognizes its needs for information nor realizes its problems, would take full advantage of the facilities.

The situation in Asia and the Far East regarding industrial information services is as follows:

- a) There are countries in this region, which have a highly developed and sophisticated industrial information services, such as Japan and Australia;
- b) A second group of countries has technical and scientific documentation and information services, which were established with the technical assistance of UNESCO and which are working more or less successfully. Following countries belong to this group: India, Indonesia, Republic of Korea, Pakistan, Philippines and Thailand.

- c) The third group of countries has some kind of industrial information services, which are nevertheless functioning mostly on a very limited scale. Burma, Ceylon, Republic of China, Malaysia, and Singapore belong to this group. A Technical Information Centre was started some years ago in Burma with the assistance from UNESCO. Ceylon and Singapore have already taken steps towards establishing National scientific and technical documentation and information services with the technical assistance of UNESCO. The establishment of such a centre in the Republic of China is also in planning phase.
- d) The fourth group consists of countries, where presently hardly any activity is to be seen in this direction. Following countries belong to this group: Afghanistan, Cambodia, Mongolia, Nepal, Laos and South Vietnam.

2. The influence of industrial information services on economic and industrial development:

State planners everywhere in the world are realizing that information services on science, technology and economy can play a vital rôle in the all-round development of developed as well as developing countries. Most accurate information is required not only at the planning phase, but at all stages of development. This is particularly the case with industrial planning in a developing country, where in most cases neither experience and know-how for industrial enterprise is readily available nor the other required conditions for its successful functioning can be found. One of the biggest handicaps for industrial establishments in developing countries is in many cases the non-availability of information on questions of vital importance to the companies concerned. Generally speaking, there is a gross lack of scientific and technical information in the developing countries. In fact this information is available in the developed countries and can be acquired easily through national information services, which as we shall see later on, are render-

ing good services to their respective countries. Most of these centres are very young and it is very difficult, if not impossible, at this stage to assess their share in economic and industrial development. However, experiments in Eastern European countries, as well as in other developed countries have shown, that through proper handling of scientific and technical information by the help of information and documentation centres, process of development can be accelerated to a great extent. This is why information centres are getting more and more prominence in developed countries.

3. The role of public and private sectors and their relationship in the provision of industrial information services:

As a matter of fact, nearly in all countries of the ECAFE region, respective governments are practically the sole supporters of industrial services. In cases there are private foundations and non-profit bodies as well as Chambers of Commerce and Industry and development banks, which run some kind of information services or support research instituts, but mainly the governments are obliged to shoulder the main burden. Excepting Japan, where the private sector is presently bearing over 60 per cent of the expenses of scientific and technological research and information, and Australia, where private industry is actively supporting information and research, in no other country of this region the private sector has any substantial share in this important activity.

In the case of the large majority of the countries of this region, it is, indeed, too early a stage to expect from the private sector to take over responsibility for the sector of information. Of course, at a certain stage of industrialisation every expanding industrial enterprise realizes the necessity of an information service for its particular needs, but experience has shown that even after reaching this stage much time is wasted, before any positive action is taken by way of establishing documentation and information services. Furthermore, it is an established fact that services of this kind

have only then a chance of success, if they work in co-operation with other similar services. A stage which takes even longer to arrive at.

For the time being the initiative, direction and financing of this development would naturally be the responsibility of the governments of the developing countries. Only after the industrial community has become information minded, it shall be possible that industry organizes its own centres for its own benefit and the benefit of the country at large.

4. Description of the main industrial information services of the selected countries of the ECAFE region

4.1. AUSTRALIA

A well developed chain of special libraries in this country generally provide some kind of technical information service in their specialized field of collection. However the most important library and information systems are those provided by the National Library of Australia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

The National Library, which specializes in the provision of services in the social sciences and humanities, has a special responsibility in the provision of national information services and in the co-ordination of bibliographic and information activities of libraries throughout the commonwealth.

Specialist services in the fields of science and technology are provided by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), which is structured on the principle of co-ordinated decentralisation and as a Government Statutory Authority. Among other duties laid down in the act under which CSIRO is administered states that one of its functions shall be "the collection and dissemination of information relating to scientific and technical matters".

CSIRO, which was originally a central library, now co-ordinates some 50 libraries of CSIRO located at each of

the divisions of the organization geographically widely separated across the continent. In each of these divisions the library is a central unit providing 'on site' services. (Holdings: 70,000 books, 22,000 periodicals titles, 200,000 bound volumes of periodicals).

The fields of the Documentation Centre, which has a staff of 43 persons, includes science and technology (excluding human medicine) administration and documentation.

Abstracts are published in English in 'CSIRO Abstracts' (monthly) covering all the scientific papers published in Australia or abroad by CSIRO scientists and including a list of the translations of scientific articles made in the Translation Section of CSIRO. (1,300 abstracts were published in 1966 and 1,310 in 1967).

References are compiled and literature searches carried out on the centre's own initiative and on request by CSIRO officers, in the form most suitable for duplicated use. Currently almost one thousand technical enquiries per week, almost half of which are from industrial firms, the agricultural community and the universities. Wherever possible, enquiries are directed to the appropriate expert in CSIRO or elsewhere. Literature is usually searched in English; annotations are in English.

Translations are prepared for CSIRO research staff only from German, Danish, Norwegian, Swedish, Dutch, French, Spanish, Portuguese, Italian, Russian, Ukrainian - and, using outside translators, other languages - into English. As stated above, a list of translations is published in 'CSIRO Abstracts', and also issued in 'Commonwealth Index of Scientific Translations' and 'US Office of Technical Services'.

Publications: 'Scientific contents of Australian Libraries' is prepared by CSIRO in constantly up-dated form - from 170 libraries contribute to this publication. 'Australian Science Index' (monthly) serves as a reference to all scientific papers published within Australia. 'Directory

of scientific and technical research centres in Australia (biennial) provides useful basis data about the research centres in the governmental, university and private sectors. In addition to the central Library's publishing programme CSIRO publishes a wide range of scientific and technical journals and other publications.

Reproductions are provided on request, from the holdings of the centre only, in the form of paper copy.

4.2. BURMA

Technical Information Centre.

Union of Burma Applied Research Institut (UBARI), Rangoon

This rather large institute for technical research and development work has a fairly good technical library to which is connected a Technical Information Centre started some years ago with assistance from UNESCO. The T.I.C. does not have capacity to provide a modern documentation service in technology and science, but it has extraordinarily good photographic equipment. This centre neither co-operates with the other technological institutes, such as Rangoon Institute of Technology, nor normally serves clients outside of the institute.

4.3. CEYLON

At present there is no national documentation centre in Ceylon, however consideration is presently being given to setting up of such a centre. At the request of the Government of Ceylon, a UNESCO-expert was sent to that country in December 1968 to conduct a survey for establishing a documentation centre. In his final report, the expert recommended the establishment of a 'National Scientific and Technical Documentation Centre' in Ceylon.

In the absence of this centre the documentation and information work is being carried out on a limited scale by 'Ceylon Institute of Scientific and Industrial Research' (CISIR), Colombo. The fields of research of CISIR include: science and technology with special emphasis on: applied physics, physical chemistry, chemical technology, chemistry of natural products, process engineering, microbiology and rubber technology.

The services of CISIR include the following:

- a) The undertaking of specific research projects such as development of a new process or product, quality improvement, reduction of manufacturing costs, profitable use of non-raw materials or waste products or the solution of production problems.
- b) Industrial production counselling, including factory layout, retention of machinery, production costing, efficiency, technical management methods, standards and quality control.

The library of the CISIR, which is open to those engaged in active research, had, as of December 1969, a total book stock of about 15,000 volumes and received some 500 periodical titles. Since 1966 Abstracts are published quarterly in English in the 'Technical Library Bulletin of the CISIR'.

Bibliographies are compiled and literature searches carried out mostly in English, on the Institute's own initiative and on request, in the form of lists of titles and typed cards.

Translations are prepared for members of the Institute only, from French, German and from Sinhala and Tamil into English.

Reproductions are provided only for the staff of the Institute, from its holdings and the collections of the University libraries and libraries of other research institutes.

4.4. REPUBLIC OF CHINA

There is no specialised Information and Documentation Centre for Science and Technology in the country, however 'Union Industrial Research Institute' and 'The National Central Library' offer some documentation services as shall be elaborated in the following.

Union Industrial Research Institute was established in November 1954 and is supervised by the Ministry of Economic Affairs. The Institute, which has a staff of 187 persons, was devised for industrial research in the fields of chemical processes development, ceramics, metallurgy, and equipment. The library is open to the Institute's own staff and to research workers

of universities and institutes. (Holdings: 13,400 books, 200 current and 930 old periodical titles.)

Bibliographies are compiled and literature searches carried out on the Institute's own initiative and on request, in the form of lists of titles, annotated lists, typed cards and reviews. Literature in English, Japanese and Chinese is usually searched. Annotations are in English and Chinese. Translations are prepared on request from Chinese into English and from English into Chinese.

Reproductions are provided on request from the Institute's holdings only, in the form of photostats.

The National Central Library: This library has been playing the part of a documentation centre in the past to a considerable extent. It is responsible for the publication of 'Handbook of Current Research Projects of the Republic of China' as well as 'The Directory of cultural Organizations of the Republic of China'. Inquiries from institutions and individuals, domestic and foreign are answered and bibliographies, also annotated are prepared. Preparations for the establishment of an 'Information Centre for Science and Technology' have been going on for some time. The planned centre will consist on the following two sections: 1. Information section; 2. Service section.

The Research Institute of Nuclear Science of the National Tsinghua University, which is dedicated to the cause of promoting the peaceful use of nuclear energy, serves as an active information center of nuclear science in the Republic of China.

U.S. INCA

Indian National Scientific Documentation Centre (Indos) was established in 1952 with the technical assistance of INCA by the Council of Scientific and Industrial Research (CSIR), and was assigned the following objectives:

1. To receive and retain all scientific periodicals which may be of use to the country;
2. To inform scientists and engineers of articles which may be of value to them by issuing a monthly bulletin

- of abstracts;
3. To answer specific inquiries from the information available in the centre;
 4. To supply photocopies or translations of articles required by individual workers;
 5. To be a national depository for reports of scientific work of the nation, both published and unpublished; and
 6. To be a channel through which the scientific work of the nation is made known and available to the rest of the world.

INSDOC, which has six branches in the country, is supposed to cover all fields of natural science and technology.

It was suggested already at an early stage of its inception that a National Science Library was to be built up at INSDOC. But the realization of this scheme has been very slow and it is only now that some concrete plans of its realization are in sight.

The library of INSDOC comprises 27,000 books and bound volumes of periodicals, 1,000 microcopies and 3,800 periodical titles. The library is not open to the general public.

Bibliographies are compiled and literature searches (usually only in English) carried out on the Centre's own initiative and on request, in the form of lists of titles. 139 bibliographies were prepared in 1966 and 107 in 1967.

Abstracts in English are published since 1963 in 'Indian Abstracts', monthly (12,000 yearly) which is a national abstracting service for the bibliographical control of Indian scientific and technical literature. 'Indian Educational Material', which is published quarterly since 1967 includes 1,800 abstracts in a year.

Translations are prepared on request for individual scientists and institutions from French, German, Russian, Japanese, Spanish, Italian and Dutch. Translations issued by the Centre are notified to the British Commonwealth Scientific Organisation, London, which circulates the information on cards to its members. 207 translations were made in 1966 and 209 in 1967.

Reproductions are provided on request for scientists and scientific and technical institutes, from the centre's own collections and from those of the other libraries in India, also procurement from abroad through national documentation centres.

Union Catalogue: INSDOC has been from the very beginning trying to maintain a union catalogue of scientific periodicals held in Indian libraries.

Bibliographical controls: In 1949, UNESCO-SASCO (South Asia Science Co-operation Office) started publishing the 'Bibliography of Scientific Publications of South and Southeast Asia', which was taken over and continued until 1964 by INSDOC. In lieu of this, the more comprehensive monthly abstracting periodical the 'India Science Abstracts' was started by INSDOC in 1963.

Current Awareness Service: The greatest information problem of scientists today is that of keeping up with current developments in their respective fields. To help Indian scientists in this respect INSDOC issued a fortnightly bulletin - 'INSDOC List of current Scientific Literature', from 1964 to 1965. However this service was discontinued due to its inadequate nature of work.

6.6. INDONESIA

First documented library national (PNS) (Indonesian National Scientific Documentation Centre) was developed from the Documentation Section of the Council for Sciences of Indonesia (KIPSI) into an independent institute under the same council in June 1965. KIPSI has obtained UNESCO aid since 1962 in the form of equipment, experts and fellowships to establish a national clearing house for science information. PNS acts as a national clearing centre for scientific information in particular for the Institutes of the Council, but also invites requests from abroad. Individual scientists and institutions may request articles or information on research and development, provided by international agencies (OECD and UNIDO) directly to the Documentation Centre or through interlibrary channels.

FDIN is mainly connected with science and technology and has a staff of 28. The library, which has 13,000 books, 400 periodical titles and 2,000 bound volumes of periodicals, is open to students, scientists and research workers.

The English language quarterly 'Indonesian Abstracts', which provides abstracts of current Indonesian literature in all fields of science, has been published since 1957 in co-operation with the Bureau of Scientific Publications of the Indonesian Institute for Sciences (formerly Council for Sciences of Indonesia). (167 abstracts were published in 1966 and 190 in 1967.)

Bibliographies are compiled and literature searches are carried out in the form of 'Index of Indonesian Learned Periodicals' and 'Informasi Kilat' (quick information). The latter publication contains information about the contents of 1,074 periodicals subscribed by 10 research institutes of the Indonesian Council of Sciences. Scientists may choose from this list titles of interest to them which are provided to them by FDIN in the form of Bureau copies. Literature is searched in English and Indonesian. (Five bibliographies were prepared in 1967.)

There is no translation section at this centre, and the incidental inquiries for translations are answered by the help of outside translators.

The 'Directory of scientific institutes in Indonesia' was published in 1960 and the revised edition of the 'Directory of special libraries in Indonesia', was published in 1967. Further publications of the year 1968 include: 'Daftar majalah yang diterbitkan oleh lembaga-lembaga LIPI' (list of periodicals published by the research institutes under the Indonesian Institute of Sciences), Bibliography on Food and Technical Journals for Industry.

Reproductions are provided on request through an interlibrary loan system, in the form of paper copy, microfiche, microfilm (microfilm) and microfilm.

The Institute of Scientific Information is the main science library of Indonesia, which was prepared in 1965 by the assistance of the United Nations Educational, Scientific and Cultural Organization.

Djakarta, is maintained and up-dated by PDIN.

Checklist of serials in Indonesian libraries (1955 to 1960) was compiled by Kantor Bibliografi Nasional, which also operates an interlibrary locating scheme among 62 libraries in Djakarta and Bogor.

4.7. JAPAN

There are approximately 600 academic societies in the field of science and technology, besides about 7,500 private companies, which are also conducting research in various fields of technology. These are the largest generators of primary scientific information by the way of active research conducted by specialists in their respective fields, and by publishing journals for the dissemination of scientific knowledge.

A number of organizations, private and otherwise are active in the field of scientific and technological information in Japan. But we want to single out JICST, which is the central organization for this purpose and also the most important one. However, the National Diet Library deserves be mentioned here for its large collections of scientific and technical literature. The emphasis is laid on the acquisition of journals and technical reports. Special bibliographies and catalogues are published as well as a monthly index journal 'Naschi Kiji Sakuin' (Japanese periodicals index). The science and technological series of this journals carry approximately 65,000 pages from 1,300 Japanese journals.

Japan Information Center of Science and Technology (JICST) was established in August 1957 as a central organization for information in the field of natural sciences and technology. As we have seen earlier, this is not the only information center of its kind in the country, but it is the largest one as well as the leading center in the field of documentation in Japan. JICST was set up with the purpose of collecting, processing, storing and retrieving scientific information, as well as providing translations and reprographic services.

JICST, which is a non-profit institution, supported by government and industry, is supervised directly by the Prime Minister through the Science and Technology Agency of the Japanese Government.

In June 1968, JICST had a staff of 312 employees, which was assisted by a large panel of abstractors and translators, as well as typists and photolaboratory workers.

JICST covers following subject fields: General and mechanical engineering, electrical and electronic engineering, chemistry and chemical technology, earth sciences, mining and metallurgy, civil engineering and architecture, pure and applied physics, atomic energy (isotopes and radiation chemistry series), management and administration. Lately medical field has also been included.

As of April 1968, JICST was regularly receiving 7,000 periodical titles. As many as 6,000 reading room visitors were counted between April 1967 and March 1968; (the library being open to the general public) as well as 289,000 requests registered for photocopies and 5,400 translations were supplied and 1,900 literature searches made.

Bibliographies are compiled and literature searches carried out on the Centre's own initiative and on request, in the form of lists of titles, annotated lists as well as photocopies of originals are provided on request from the centre's holdings and other collections of the country. Literature is usually searched in Japanese, English, German, French and Russian. Annotations are in English and Japanese.

Abstracts (435,700 in 1967) are published in 'Current Bibliography on Science and Technology /CBST/'; 'Atomic Energy (Isotopes and radiation chemistry series)', monthly; 'Chemistry and Chemical Industry', three times a month; 'Civil Engineering and Architecture', semi-monthly; 'Complete Chemical Abstracts of Japan', monthly; 'Earth Sciences, Mining and Metallurgy', semi-monthly; 'Electrical Engineering', semi-monthly; 'Management and Administration', monthly.

Translations are provided ^{on} request from Russian, German, English, French, Italian, Spanish, Portuguese, Danish, Dutch, Swedish, Norwegian, Polish, Hungarian, Czech, Ukrainian, Chinese and

other languages into Japanese and from Japanese into English, 5,500 translations in 1967.

Its publications also include: 'Gaikoku tokkyo Sokuho (Foreign patent news); 'Zyoho Kanri (Information and documentation), monthly dealing with information processing techniques; 'Nippon Kagakusoran sorakuin (General Index of Japanese chemical abstracts) 1941 to 1955; 'Nippon Tokyo Sakuin (Annual Index to Japanese patents); Technical digest for smaller industries (tentative title). The centre also publishes various research reports.

Journals and other primary publications are delivered to information officers who select articles according to pre-established criteria and mail them to abstractors to have them abstracted in Japanese. Each abstract averages 200-250 letters. The abstracts are then classified and edited; typed on 4" x 6" cards; arranged and numbered; and then sent to commercial offset printers.

From the very beginning it was decided that JICST should adopt mechanized means for processing a large amount of scientific information. As of 1969, JICST was about to organize a fully computerized method of editing its abstracting journals, in Japanese. The future planning of the Japanese Government will build up a national science information centre, with the computerized JICST at its centre, to cope with expected changes of the 1970's.

4.8. REPUBLIC OF KOREA

Korean Scientific and Technological Information Centre (KORSTIC), which was established in 1964, is the national documentation centre for physical, chemical and biological science and technology including industrial engineering, agriculture, medicine and atomic energy. (Number of staff: 5.)

Bibliographies are compiled on the centre's own initiative and literature searches carried out on request, in the form of lists of titles. Literature is usually searched in English, Japanese, French, Chinese, German, Spanish and Russian. Annotations are in Korean.

Abstracts are published in Korean and English, in abstracts sections of other periodicals. 'The Korean Scientific Abstracts' (quarterly) was going to be started in May 1969. Translations are prepared on request from English, Japanese, French, Chinese, German, Spanish and Russian into Korean, and from Korean into English and Japanese.

"Current Bibliography on Science and Technology", series A, B and C, published in Korean, monthly. "Current Bibliography on Foreign Patents", published in Korean, semi-monthly. From January 1969: 'The Highlights of KORSTIC', published in Korean, irregular. List of Foreign Periodicals in KORSTIC. List of Korean Scientists' Achievements, in English. Synthetic List of Foreign Periodicals in Korea.

The Library is not open to the general public. Holdings: 3,000 books, 2,500 periodical titles, 4,000 microcopies (Foreign Patents).

Reproductions are provided on request from the centre's holdings and collections of foreign organizations, in the form of paper copy and microfilms.

"Seminar on the Scientific Information Management", one of the annual events was held for those who are engaged in the activities of scientific information in April, 1969.

A catalogue centre, in which trade catalogues from foreign countries shall be preserved, has been planned. It will supply users with the informations of developing new products and for improving their qualities.

4.0. NEW ZEALAND

Council of Scientific and Industrial Research (CSIR) is the central organisation for the conduct of scientific and technological research in New Zealand. CSIR has twelve divisions, which deal with different fields. The results of research are published by the Information Bureau, which is responsible for the editing and publishing of all the scientific publications of the council and its subsidiaries.

Information Bureau provides also a central library service which includes reference facilities, an index of scientific translations, cataloguing, interlibrary lending, book ordering and assistance to branch libraries.

Information Bureau maintains also a Technical Information Section and a photographic section. A scientific liaison service is maintained under the senior scientific liaison officer, whose duty it is to keep in close contact with national and international research organisations.

6.10. PAKISTAN

The Pakistan National Scientific and Technical Documentation Centre (PANSDOC), which besides its head-office in Karachi has two branches in Lahore and Dacca was established in 1957, (with technical assistance from UNESCO) as a semi-government organisation and as a unit of the Pakistan Council of Scientific and Industrial Research. PANSDOC enjoys the status of a national centre. The aims and objects of this centre are to collect informations about all branches of science and technology, to process and disseminate it to the scientists, technologists and industrialists of the country. The services of PANSDOC include: document procurement, bibliography compilation, technical translation and document reproduction. The library of PANSDOC, which is destined to become the National Science Library, is at present open exclusively for the use of the Centre.

In the first phase of its establishment, PANSDOC acted merely as a National Charing House for all incoming and outgoing arrivals of scientists and technologists. Since 1962 the services of the Centre were enlarged and two regional offices established - one in each wing of the country, which is separated by the territory of India.

Abstracts are published in English in the Centre's quarterly journal 'The Pakistan Science Abstracts', covering all basic literature published in the Pakistani scientific and technological journals.

Bibliographies are compiled and literature searches carried out on the centre's own initiative and on request in the form of lists of titles with full bibliographic data and annotated items. Up to 1968 some 600 specialized subject bibliographies had been compiled, which also include a number of special bibliographies of great importance for the country and the region. Literature is usually searched in English.

Translations are prepared from various languages into English by five full-time and a panel of part-time qualified translators. A list of translations is published in the 'List of PANSDOC Translations', which is distributed free of charge. Translations issued by the Centre are also notified to the British Commonwealth Scientific Organization, London, who circulate the information on its Commonwealth Translation Index cards to its members.

The Document Procurement Unit of the Centre acts as a clearing house for incoming and out-going orders. The documents are procured from the local as well as foreign sources in the form of microfilm or photocopies. A Union Catalogue of the holdings of the local libraries was prepared on the initiative of PANSDOC for this purpose, as was also a Union Catalogue of scientific and technological periodicals available in various libraries of the country was prepared. As of 1969 almost 3,000 microfilms of scientific articles were available with PANSDOC, who plans to publish an author and a subject index of the holdings of its so-called Microfilm-library. The Document Reproduction Unit is very well equipped and is rendering good service. Reproductions are provided on request from the centre's holdings and other collections in the form of photocopies.

PANSDOC has also started a selective dissemination information service (SDSI) to channelize scientific information relevant to the various departments of the Pakistan Council of Scientific and Industrial Research (PCSIR), as well as to the industrialists of the country, who are provided with the relevant technical information relating to manufacture of the products and processes etc.

A 'Directory of Current Scientific Research Projects' of Pakistan for the years 1966-67 was published by PANSDOC at the initiation of the National Science Council.

PANSDOC has been entrusted by the Government of Pakistan the task of collecting statistical information on Science and Technology in the country.

Future programmes of PANSDOC include besides the establishment of a National Science Library the publication of a bibliography on 'Cultivation of Medical Plants' and the reprint scheme for certain rare and old scientific publications relating to Indo-Pakistan sub-continent.

4.11. PHILIPPINES

A national centre for technical information and documentation does not exist as yet. However the information work is carried out by the Division of Documentation of the National Institute of Science and Technology (NIST). Fields of information activities of this Institute include natural sciences and technology, including agriculture, fisheries, food and nutrition, and medicine.

Types of services: reference services, abstracting work, compilation of subject bibliographies, carried out on the centre's own initiative, in the form of national and international exchange of documents, ^{annotated lists,} reprographic services (from the centre's holdings only).

Translations of simple material are made on request from German, French, Spanish, the Philippine National Language and Philippine dialects into English.

The library is open to the general public. (Holdings: 20,000 books, 3,000 periodical titles.)

Abstracts are published in 'Philippine Abstracts', (quarterly), 'Philippine series of Specialised Collections of Abstracts', (3 issues with an average of 250 abstracts each). Abstracts are published in English. 4,593 abstracts were published in 1967.

Publications: Directory of Philippine Libraries, 1961, 67 pp

Philippine Scientific Bibliographies (4 published so far, listing over 6,350 entries);

Union catalog of Philippine Publications on Science and Technology, December 1962, 571 p.;

Philippine Men of Science, vols. 1 and 2.

4.12. SINGAPORE

At present there is no documentation centre of any kind in the country. The establishment of an information centre was recently recommended by an UNESCO expert. Meanwhile the Singapore Polytechnic Library offers some technical reference services to the members of the Singapore Polytechnic, government officials and lecturers of the University of Singapore and Nanyang University. (Holdings: 42,000 books, 800 periodical titles.)

Bibliographies are compiled and literature searches, mainly English, carried out. Selected journals published in Singapore are indexed, with English abstracts.

Reproductions are provided on request from the library's holdings in the form of Xerox-copies.

The University of Singapore Library intends to extend library services in the field of engineering and architecture also.

The National Library is the depository library, which is also responsible for the publication of National Bibliography. Besides the library services some translation services are also provided, whereas no regular geographic services are offered. Collection of patents and standards seem to be neglected altogether.

4.13. THAILAND

Thai National Documentation Centre (TNDC), was established in 1961/62 by the technical assistance of UNFSCO. Documentation services came into operation in 1964 and the responsibility for the Centre was transferred to the Applied Scientific Research Corporation of Thailand.

TNDC is concerned with all fields of natural sciences, applied sciences and technology. TNDC provides documentation procurement, bibliography compilation and translation services.

TNDC has compiled a Union Catalogue of periodical holdings of the libraries of Bangkok. Reproductions are provided on request in the form of microfilm or photocopies from the holdings of the special libraries of Bangkok.

Translations are prepared on modest rates by TNDC on request from all languages into English.

TNDC also compiles bibliographies on its own initiative as well as on request.

5. Training facilities for industrial information officers:

As a matter of fact, training facilities for industrial information officers in the countries of Asia and the Far East are very limited and inadequate. The dearth of trained personnel for information and documentation work is perhaps one of the biggest handicaps for all existing and especially newly established information and documentation services in countries of the ECAFE region. As we shall see later on, the existing centres are generally training personnel through in-service training schemes. In the absence of institutions for information officers' training, the personnel for documentation work has to be recruited from the ranks of subject specialists, who are trained on-job as information officers, or personnel trained in library science.

Institutions of library science are relatively well developed in some of the countries of this region, whereas other countries have either no such institutions or institutions of comparatively low standard.

Australia has nine library schools, which are mostly departments of prominent libraries of the country. CEIRO trains its information officers through in-service schemes and short training courses.

No facilities for training are available in Burma and Cambodia. Two University colleges in Ceylon offer courses in librarianship science. The Library Association of Ceylon also conducts some short courses for would-be librarians. The Universities in the Republic of China provide comprehensive undergraduate programmes in library science. As of 1965 the establishment of a two-year graduate library institute was being planned. Education in library science is relatively well developed in India, where as many as 19 institutions of university level and other also offer courses in library science. However, IISDC is compelled to train its staff on-the-job. There is one

University institution in Indonesia for education in library science. PDIN provides practical training in documentation and library techniques lasting 3 months. The Bibliotheca Bogoriensis also conducts a similar training course for those working in the field of agriculture and biology.

Training facilities for documentalists and information officers are relatively better organized in Japan than anywhere else in Asia or the Far East.

The Japan Documentation Society (NIPDOK) conducts short training courses several times every year. The Japan Information Center of Science and Technology (JICST) sponsors annually a national workshop for the study of information and documentation techniques. Short training courses were conducted up till 1962 for the same purpose. Since 1965 JICST conducts an on-the-job training programme for its new members of the staff. Short courses for documentation are also organized by the Japan Library Association, National Diet Library, and The Science Information and University Libraries Section of the Ministry of Education. As of 1966-67, 22 colleges and Universities were offering courses in library science. Besides this some courses have also been organized for the users of information.

In the Republic of Korea, there are four library science departments (undergraduate), two graduate schools; two one-year courses and several school library administration courses. KORSTIC trains its personnel through on-the-job schemes. A library school attached to the National Library of New Zealand is responsible for the training of librarians. In Pakistan, 4 universities and 3 professional organizations of the librarians offer courses in library science. Karachi University also offers doctoral programmes, whereas the other Universities have post-graduate programmes up to the degree of Master of Arts in library science. Some courses for documentation have been taken up in the programme of the Karachi University, but PANSDOC is left alone to train its staff through in-service

training. In Phillipines 7 academic institutions offer regular study programmes for librarians. NIST trains its STAFF on-the-job. There is no library school in Singapore.

The Nanyang University had plans of starting an undergraduate course in library science in 1970. A course is offered by Chulalongkorn University in Thailand for library science. THDC trains its staff on-the-job in the absence of any training facilities for documentalists in the country.

6. Co-ordination and Co-operation between information services of the ECAFE region and the developed countries and international organizations

Co-operation between established information centres in countries of the ECAFE region and some of the documentation centres in developed countries is very close. Almost every centre has a number of corresponding institutions in foreign countries, which are quite often requested to furnish microfilm or photocopies or translations of the required items. In cases even training facilities for the staff-members of the centres are offered by well-established centres in the developed countries. But as soon as it comes to payment of the bills for services by the centres in developed countries in hard-currency, the centres of the developing countries face difficulties. Their financial resources are in most cases very limited, especially their quota of foreign exchange.

The relationship between these centres in developing countries and international organizations are excellent. The great majority of these centres were established by the technical and in cases also the financial assistance of the international organizations, particularly of UNESCO. Fellowships and training facilities have all along been offered by UNESCO to the staff-members of the centres. Technical assistance and equipment for the centres are supplied by the same agency. The other international

to the centres through invitations for participation in workshops, seminars and other international meetings.

7. Technical assistance for existing and newly established information centres

Technical assistance is needed urgently in nearly all branches of information work of the centres. First of all technical and professional expert help for organizing training courses for the staff must be provided without any further delay. Secondly, spare parts for the mechanical equipment of the centres should be made available. In the same way arrangements for the supply of microfilms, photographic paper and paper plates for the offset machines and other such material should be made. Expert advice on classification and other questions is urgently needed by all these centres. In fact, no international co-operation would be possible in future if we miss the chance now to harmonize the prevailing different systems in Asia and the Far East.

8. Summary and conclusions

As a whole, industrial information services in the countries of Asia and the Far East are not very well developed. Eight countries have national centres for documentation and information, which are in the first instance merely documentation centres and are only partly functioning as industrial information centres. It is high time that industrial information sections are opened and industrial information officers are appointed to approach the industry personally to get to know its needs and requirements. No industrial information centre can work successfully without having intimate relations with the industry. The existing centres in Asia and the Far East have not been very successful in this field.

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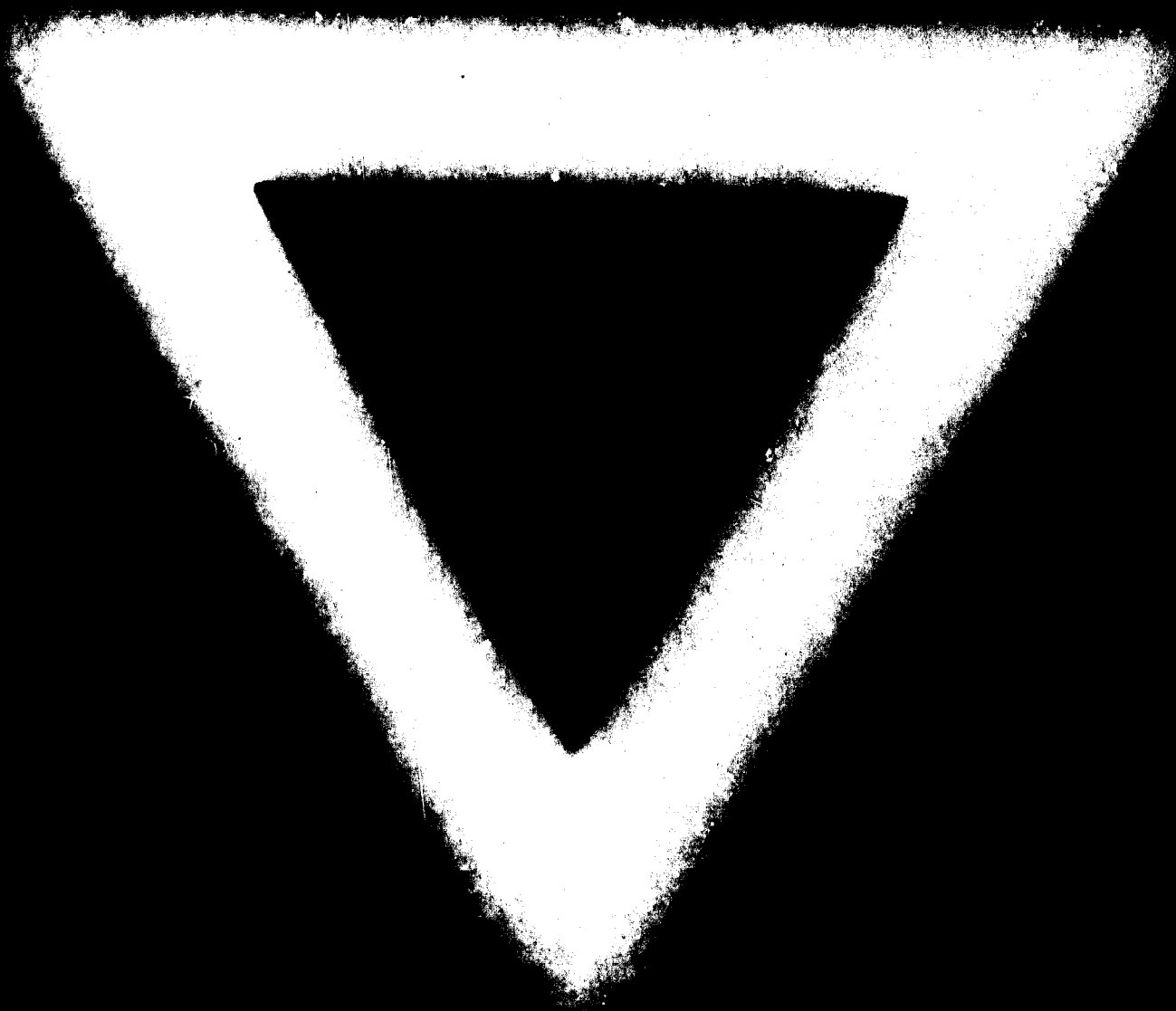
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