

37 CODATA / NEWSLETTER

JULY 1986

CODATA WORKSHOP ON ENVIRONMENTAL DATA QUALITY

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The CODATA workshop, Directions for Internationally Compatible Environmental Data, held at McGill University, Montreal, Canada, 19 - 23 May, 1986, discussed environmental data measurement methods and standards for the media for air, water, soils and biota, and data management issues such as data compatibility, measurement equivalencies, data quality (relevant to intended use), data quality documentation, and accessibility.

The workshop convened representatives dealing with measurement methods, protocols, standards development, data management, and data use from 20 countries, including representatives from developed nations that deal with industrial pressures on the environment, as well as developing nations that deal with environmental problems of tropical regions, arid regions, changing climates, and changing soil conditions.

The participants represented some 50 environmental programs carried out within nations and more than 20 international programs. These included ICSU bodies (including SCOPE, IUGS, COSPAR and IGU), UN programs such as the World Meteorological Organization (WMO) and the UN Environmental Program (UNEP), and international regional programs such as the Arab Center for Studies of Arid Zones and Dry Lands.

Many environmental organizations, both national and international, are collecting environmental data for purposes ranging from global modeling and trend analysis to regional disputes or regulation and legislation. While in certain cases users' needs, budgetary restrictions, or confidentiality may limit the broader utility and exchange of these data, the larger majority of databases are not restricted and could be made more compatible for wider use if the data were gathered in a more uniform manner with better documentation of data quality.

The workshop convened for the first time representatives from a broad spectrum of environmental programs in the context of measurement and data. Most participants had not met each other before.

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The **Committee on Data for Science and Technology (CODATA)** was established in 1966 by the International Council of Scientific Unions.

Working on an interdisciplinary basis, **CODATA** seeks to improve the quality, reliability, processing, management, and accessibility of data of importance to science and technology.

Activities of the Chinese National Committee for CODATA

Scientific research in China has a long history. Particularly in recent years—with increasingly urgent demands for advancing the science and technology to modernize China—research has been greatly emphasized and strengthened in the country. A rapid pace in manpower development has been quite apparent with several millions of dedicated specialists being trained and organized and now actively working at different academic and research institutions under the jurisdiction of the State Commission for Higher Education at the Ministry of National Defence, at different industrial departments, at other Government agencies, in local governments, and at the Chinese Academy of Sciences. A fairly large number of the research results has already been applied to the actual industrial and agricultural production. As it is effectively promoting the national economy, the advancement of science and technology is assuming top priority for support in the country's modernization movement.

Nevertheless, the efforts made so far still cannot properly meet the practical demands for modern science and technology from the production sectors. The weak foundation is apparently the primary reason. We'll certainly have to strengthen the exchanges with other advanced countries by absorbing their good experience and introducing the useful technologies into the country. However, the current work in data handling and dissemination could hardly fail to transfer useful information to the production activities. Recognizing the seriousness of this problem, the country now pays close attention to data work, by funding to establish computerized information systems of different types—such as the Scientific Databases of the Chinese Academy of Sciences, specialized information systems for different industrial departments and government agencies, the national economic information network, the national technological information system, and the national geographical and natural environment information services, which are jointly supported by the State Commission for Economic Development, the State Planning Commission, and the Commission for Science and Technology, etc. To accomplish these arduous tasks, especially to reach the integrity, totality and effectiveness of these systems, the country needs to organize a great number of scientists and engineers, particularly those experts of information technology, to collect, evaluate and process useful data of various kinds. During these hard endeavors, frequent exchanges and close collaboration with colleagues abroad are certainly quite invaluable, while good coordination among these related systems for generalizing policy, standards and methodologies, and exchanging the data and sharing other resources is also definitely needed. CODATA is providing such an opportunity to our colleagues both within and outside China. Since its tasks and working procedures have been well defined, CODATA can play a positive role in promoting data handling and dissemination, especially in setting up computerized scientific information systems.

THE CHINESE NATIONAL COMMITTEE FOR CODATA

China joined CODATA in the summer of 1984; the Chinese National Committee for CODATA was formed in October of the same year. It was an important event in promoting China's data work in science and technology. The current National Committee which will sit until 1988 is composed of 20 members, respectively representing the Chinese scientific societies, institutions of higher education, the industrial and agricultural sectors, the Defence Department, government agencies for standardization, measurements, and general survey, and the Chinese Academy of Sciences. Dr. Zhou Guangzhao, Professor of Physics and Vice President of the Chinese Academy of Sciences, now chairs the Committee.

In late December 1984 the National Committee held its first plenary meeting in Beijing and drafted and passed its Constitution, which defines the Committee's goals and its organizational policies. The meeting also discussed and

made plans for activities during the period from 1984 to 1986. At this meeting, the Committee established its Secretariat which is currently located at the headquarters of the Chinese Academy of Sciences. The Second Plenary Meeting of the National Committee was again held in Beijing, in December 1985. It reviewed the work and modified the plans for 1986.

The Committee has organized and supported some practical activities since it was launched. These include:

(1) Setting up four Working Groups, i.e. Chemistry and Chemical Engineering Data, High-Pressure Data, Fundamental Constants and Environmental Data. Members of these Groups represent the major related research institutions in the country.

● The Chemistry and Chemical Engineering Data Group, taking the research and development of the "Engineering Chemistry Databases" as its primary task, introduced some data sources from abroad, organized the data entry work, developed needed software and now is successfully producing tapes and data files which could be exchanged with the outside. The Group has also been participating in the preparatory work of the 8th ICCRE Conference which will be held in 1987 in Beijing and co-sponsored by the Chinese National Committee for CODATA;

● The High-Pressure Data Group compiled two "High-Pressure Research Abstracts from Abroad" and distributed them to each of the related institutions in the country. The Group is now preparing to accumulate, process, compile and disseminate the high pressure data published within China with the data formation set by CODATA's High-Pressure Data Task Group.

● The Fundamental Constants Group, referencing China's recent development in the measurement of fundamental constants, has defined its research priorities and set the goals it hopes to reach by the year of 1993, and has been actively working toward them. The Group will also publish and produce in China the fundamental constants most recently recommended by CODATA.

● The Environmental Data Group is actively taking part in key research projects on the country's environmental protection, including the project on setting up the "National Environmental Protection Database System". The Group Members are now leading the work of collecting, evaluating, processing, and compiling the monitoring data from water, air, and soils in the country's environmental protection work.

(2) The National Committee has identified one observer for each of the international CODATA Task Groups and Working Groups. They have been communicating with related CODATA Task Group Members, participating in the investigating and consulting activities organized by CODATA, collecting the classified catalogs and formulations published or recommended by CODATA for data of different disciplines, and studying the database development activities in other countries through CODATA publications. Some of these Chinese observers have also been invited to attend the seminars and workshops held by the CODATA Task Groups or Working Groups. They explain the current status and future plans for data work in China to the Groups and at the same time introduce the work of the CODATA Groups including the ideas, types, results and other related information to the Chinese scientific community out of those meetings and correspondence.

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CODATA Supporting Organizations

Although the core membership of CODATA consists of the international scientific unions and the national academies or other adhering organizations of the member nations, there is also a category of Supporting Organizations. In return for modest dues, these Supporting Organizations receive special access to CODATA outputs, have a window on CODATA activities (including complimentary copies of various CODATA publications and reports), and in addition have an opportunity to make suggestions for new CODATA projects.

Any organization concerned with the compilation, evaluation, management, dissemination, or use of numerical scientific and technical data is eligible to become a Supporting Organization of CODATA. This includes profit-making, not-for-profit, governmental, and educational organizations. There are three categories of Supporting Organizations, with dues ranging from \$100 to \$500 and proportionate benefits.

An application form and further details on the benefits offered to Supporting Organizations may be obtained from: CODATA Secretariat, 51 Blvd. de Montmorency, 75016 Paris, France, Telephone: (1) 4525-0496.

Chemical Engineering Data Sources

An interesting compilation of data sources for chemical engineering is contained in a volume summarizing papers selected from the two sessions of the August 1985 AIChE (American Institute of Chemical Engineers) meeting "State-of-the-Art Information Resources for Chemical Engineers" in Seattle, Washington. It has been edited by Dorothy A. Jankowski and Theodore B. Selover, Jr.

The discussion—by experts from diverse industrial and academic centers—surveys national online databases in thermodynamics, materials properties, energy, cryogenics, coal liquefaction, techno-economics, and transdisciplinary sources.

This is a follow up of *AIChE Symposium Series No. 237* entitled "Awareness of Information Sources" which contained 16 papers and the transcription of a panel discussion on the effectiveness of information transfer. The papers in S237 are separated into three parts. Part One covers standards organizations and the Engineering Societies Library. In Part Two there are papers on data centers for material properties. Data centers for thermophysical properties are described in Part Three. Abstracts from that publication appear on pages 63 through 70 of this volume.

As John Naisbitt so aptly stated in his book, *Megatrends*, "We are drowning in information, but starved for knowledge." These symposia proceedings are intended to introduce engineers to resources that will enable them to isolate needed information from this flood in timely fashion.

This older (1984) volume does summarize a great deal of similar information involving thermodynamical, thermophysical, and thermochemical properties and measurements. The pair taken together represent a substantial resource. Further details on both volumes are contained on page 7.

Internal Geophysics of Earth

Professor Paul Melchior is Director of the Royal Observatory of Belgium in Brussels, a Professor at the Catholic University of Louvain-la-Neuve, Secretary General of the International Union of Geodesy and Geophysics, Director of the International Centre on Earth Tides, Honorary Professor at the Institute of Geodesy and Geophysics of Academia Sinica at Wuhan, China, and also a Past President of CODATA, of the Commission of the Rotation of

CODATA ON Dialcom

A "CODATA Network" providing electronic mail and other functions has been achieved in April 1986 which is expected to serve three important functions:

Help communication among the CODATA family through the electronic mail capability. This should be useful to the Secretariat, Officers, Executive Committee, and Task Groups. It provides a fast, inexpensive means of sending messages. For example, Task Groups can circulate documents (and even data) among their members for comments.

CODATA can offer the same communication capability to our member Unions and other ICSU bodies which wish to participate.

CODATA can give the scientific public a way to access databases produced by CODATA. The Hybridoma Data Bank (HDB) Task Group is considering a proposal to put an abbreviated version of the HDB on the CODATA Network. The CODATA Referral Database (the computerized version of the Directory) is another candidate for such access.

Through the CODATA network participants can:

- communicate instantly with scientific colleagues around the world through ITT Dialcom Electronic Mail,
- participate in electronic conferences of interest,
- request electronic conferences and select participants,
- access an online directory of all CODATA Network users, and
- transmit documents rapidly.

And in the very near future, the network is expected to provide access to:

- online directory to CODATA/IUIS Hybridoma Data Bank
- online directory to microbial information resources provided by The International Microbial Strain Data Network
- online catalogs of major service culture collections
- the CODATA Referral Database, an online directory of worldwide data centers, and other sources of data in all fields of science.

The system is easily accessed internationally through Tymnet, Telenet, and Uninet and local communications networks connecting to these three.

It requires only a terminal or personal computer with modem, telephone line, and communications software, and a one-time registration fee of \$25.00 (including documentation) and low connect-time rates.

The CODATA Network is being made available to scientists and engineers. For those desiring further information, contact either: CODATA Secretariat, 51 Blvd. de Montmorency, 75016 Paris, France, Telephone: (1) 4525-0496 or CODATA NETWORK Administrator, 12301 Parklawn Drive, Rockville, MD 20852 U.S.A., Telephone: (301) 231-5585.

the Earth (of the International Astronomical Union), and of the Royal Belgian Society of Astronomy, Meteorology and Physics of the Earth.

His forthcoming book "The Physics of the Earth's Core - An Introduction" treats thermodynamics, electromagnetics, hydrodynamics, geomagnetism, geophysical implications and modeling of the Earth's core. It is to be published by Pergamon Press and is expected this autumn. It follows Melchior's "The Tides of Planet Earth" in 1983 which is now in its second edition.

Precision Measurements

Fundamental Constants

When a CODATA family member writes a book it is usually worth looking twice - and when this book is reviewed by another CODATA devotee it's of triple interest.

High-precision, "gold plated" measurements where accuracies approach or exceed a part per million are the subject of Brian Petley's 1985 monograph "The Fundamental Physical Constants and the Frontier of Measurement" (see NL page 7 for details). It has been reviewed by E. Richard Cohen (*Physics Today*, March 1986, pp 109-10).

Both are experts who have shepherded the selections of fundamental constants for CODATA's internationally recognized evaluation of basic physical constants. Petley's thesis in this volume is that precision measurement is a unifying aspect of physics in that measurements in one field can have surprising significance in other--initially unexpected--fields. The challenge of modern metrology and the unity of physics are convincingly and appreciatively presented.

(Those--few?--CODATA readers who can cope with the Czechoslovakian language may also enjoy the Newsletter's Editor's lecture dealing with the role of high precision thermodynamic measurements in modern industry in *Chem. Listy*, 78, 75-87 (1984).)

Directory of Special

Data Bases in Israel

Thirty-four Israeli data bases in the natural and exact sciences are listed in the volume edited by Dr. Eliahu Hoffman (Department of Israeli Data Base Development). The initiative for the collection originated in the Israeli National CODATA Committee and contains information in a format paralleling that in the CODATA Directory Chapters. There is, however, a special listing in Hebrew.

Further details on this volume are to be found on page 7.

Excellent Reading

Lewis Branscomb's excellent article "Integrity in Science" (*American Scientist*, 73, 421-23, 1984) shows how numerical results tend to converge on "accepted" values. It is highly recommended data reading.

IUPAC Committee on Chemical Databases

This IUPAC Committee met early in 1986 under the Chairmanship of Dr. David R. Lide, Jr. and Dr. S. Heller as Coordinator and Secretary. The terms of reference of the Committee are:

- To advise the President and Executive Committee on all aspects of computerized databases of chemical properties, including division programs which produce databases, needs, standardization of databases and chemical structure records, and policy on database dissemination.

- To work with Commissions on the design and implementation of databases and appropriate software and to encourage maximum compatibility of databases from different groups within IUPAC.

- To promote, in collaboration with other ICSU bodies, a higher level of awareness of the application of computers in the management, dissemination, and use of chemical data.

Among the conclusions from the first meeting of the committee:

- **Data distribution.** A one-time license (sale) of the databases on magnetic tapes and floppy disks would be the best method of data distribution. CD ROM's will be investigated. Additions to the databases licensed would involve an update fee.

- **Standards and Formats.** There are two situations to consider: existing and new databases. The data format of existing databases which have been prepared by IUPAC Commissions will probably be left unchanged. In the case of new databases, the Committee will give advice on data format and structure.

- **Scientific review.** Since it is important to assure high quality in IUPAC databases, a procedure for scientific review should be set up.

- **Financial aspects.** Special funding from IUPAC will be needed initially, but future revenue should recover some of these costs.

The Committee agreed that software development and the preparation of a data dictionary were within their scope, but that the scientific effort in compiling and evaluating the data would continue to come from the Commissions. Machine representation of chemical structures will also be considered by the Database Committee.

Candidate databases for initial endeavors were considered. In addition a number of educational activities on structural representation, proposed IUPAC chemical codes, computer term glossary for chemists, etc. were discussed.

---David R. Lide, Jr.

China

Computer

Conference



The Eighth International Conference on Computers in Chemical Research and Education is scheduled in Beijing, China, August 25-30, 1987. It is organized by the Chinese Academy of Sciences (CAS) and the Chinese Chemical Society (CCS). It will involve plenary lectures, posters, and focused discussions on fast-growing sub-fields on advances in chemometrics, computer-aided synthesis, and process design; representation and retrieval of chemical structures; generic chemicals and common data; molecular design of drugs and materials; expert systems; numerical data acquisition, evaluation, and retrieval systems; computer-aided or -enhanced spectroscopy; as well as application of microcomputers and work stations in laboratories.

For further information, particularly receipt of a second circular, the organizing committee will help:

8th ICCCRE Organizing Committee
Attention: Prof. Cheng Qian
C/O Shanghai Institute of Organic Chemistry
345 Lingling Road
Shanghai
People's Republic of China

Key Values Book

The Task Group on Key Values for Thermodynamics has prepared and will soon publish tables of thermodynamic data on some 150 substances that are ubiquitous in thermochemical measurements. The tabulated properties are the standard enthalpy of formation and standard entropy at 298.15 K and the enthalpy difference between 298.15 K and 0 K. These selected values are based on measurements in over 2000 references. The selections are documented by explanations of which measurements were accepted and why. The tables are supplemented by tables of thermal functions for a hundred substances and by an extensive listing showing the values for each of the measurements upon which the values for the common aqueous ions of each element depend. The bibliography alone is a major guide to basic measurements in thermochemistry.

The purpose of this evaluation is to provide base points upon which other tables of data can be built. If the values of the properties of such key compounds are held constant during the evaluation of data, the very large interlocking network of ther-

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Workshop on Nucleic Acid and Protein Sequencing

The first CODATA Workshop on Nucleic Acid and Protein Sequence Data will be held May 3 - 6, 1987 at the National Bureau of Standards at Gaithersburg, MD.

The workshop will be divided into three broad sessions covering:

- Data sequence collection to ensure a high-quality database

- Standardization and compatibility of databases

- Analytical software/Education

The format of the workshop will involve a combination of invited papers, poster sessions, and vendor demonstrations of software and databases. On Sunday night, there will be a keynote address, and Wednesday morning will be devoted to working sessions preparing reports. These reports will be finalized for presentation as a recommendation to the CODATA Officers during summer 1987.

Interested individuals may obtain further information from:

Dr. M.T. MacDonell
Center for Marine Biotechnology
University of Maryland
Adelphi, MD 20783 U.S.A.
Telephone: (301)-454-5285

Working Party on Biophysical Chemistry

The extraordinary developments in molecular biology, including its applied areas, have led to a state where it is often not meaningful to distinguish between the disciplines of chemistry and biology. Has IUPAC given enough attention to these developments? Among them are problems of applications of physico-chemical concepts and experimental techniques to living systems, of extant IUPAC recommendations for chemical nomenclature and terminology use in these areas, adequacy of compilations of relevant physico-chemical data for the "new biology", for guidelines concerning standard or reference materials, and special educational endeavors in biophysical chemistry and molecular biology, all of which were discussed at meetings of the Physical Chemistry Division Committee during the General Assembly in Lyon (September 1985).

A Working Party was formed in order to identify areas within biophysical chemistry where IUPAC actions seem needed. The Working Party will also consider the crucial question of whether there is at present enough interest and competence within the existing Commissions of the Division to handle bio-oriented problems. Is there a need for creation of a special Biophysical Commission or other type of working body? Which liaison arrangements with other groups inside and outside IUPAC would then be desirable?

The Working Party is made up of representatives of the Commissions of the Divisions: R.A. Alberty (Physico-chemical Symbols, Terminology and Units), T.H. Lilley (Thermodynamics), K. Niki (Electrochemistry), K.J. Laidler (Chemical Kinetics), and L. Ter-Minassian-Sarraga (Colloid and Surface Chemistry, including Catalysis). Molecular Structure and Spectroscopy will also appoint a representative. Biotechnology (from Applied Chemistry Division) has expressed a special interest in the work and has appointed B. Heinritz as a member of the group. The Analytical Chemistry Division may also be represented. IUB, IUPAB and CODATA—which will be kept informed about the progress of the work—have been invited to communicate their views.

The Working Party will circulate a report before IUPAC's General Assembly (Boston, 1987) for discussion there. Comments and suggestions relating to the work from interested individuals can be sent to the Chairman of the Working Party, I. Wadsö, Thermochemistry, Chemical Cen-

ter, University of Lund, P.O. Box 124, S-221 00 Lund, Sweden.

CODATA Calendar . . .

1986

June

22 Task Group on Fundamental Constants, National Bureau of Standards, Washington, D.C.

July

14-17 10th International CODATA Conference, Ottawa, Canada.

18-19 15th General Assembly, Ottawa, Canada.

17-20 Task Group on Chemical Thermodynamic Tables, Ottawa, Canada.

20-23 Task Group on Geothermodynamic Tables, Ottawa, Canada.

September

13-14 Task Group on Microbiological Strain Data Network, Manchester, England.

November

Referral Task Group Meeting, Paris, France. (Tentative)

1987

Jan-Feb

15-17 CODATA Executive Committee, Paris, France. (Tentative)

May

3-6 Workshop on Nucleic Acid and Protein Sequencing, Gaithersburg, Md.

1988

September

26-29 International CODATA Conference, Karlsruhe, Germany.

30-1 Oct CODATA General Assembly, Karlsruhe, Germany

Key Values....

(continued from page 4)

mochemical measurements is broken into small, manageable parts.

In the Key Values Tables, the typical substances for an element that is solid at 298.15 K are the crystalline element, the gaseous element, the principal oxides, the aqueous ion of the element and a salt (halide or sulfate). In some cases, not all of these are given. These are the substances on which those of many others depend.

Watch subsequent CODATA Newsletters for the appearance of the book, possibly later in 1986.

Environmental Data Compatibility

(continued from page 1)

In order to provide the conferees with a common basis for discussion, four authors were selected to prepare position papers for distribution prior to the workshop. The four papers introduced the theme of the workshop: measurement methods and standards for (1) air, (2) water, (3) soils/biota, and (4) data management.

The keynote address by I. Rasool representing COSPAR's involvement with the ICSU's program on Global Change gave a space-age view of the globe and data resulting from remote sensing. Mme. N. West, of the French Association for Standardization, reviewed the program of the International Standards Organization as it relates to standards development for air and water (a soil program must still be established).

The workshop made considerable progress towards its agreed goals -- the assessment of the current status and projected needs:

- of measurement standards and methods for air, water, and soil environments,
- on data banks and for efficient dissemination of environmental data,
- for background measurements and global monitoring.

It was the consensus intent to progress toward these overall goals rather than to generate complete answers. Even a second meeting of this group toward these same goals may not be an optimal way of achieving the ultimate objective of the CODATA Working Group: enhanced data compatibility and exchange. Instead, the workshop recommended a number of more specific topics for the next steps. These conclusions are especially relevant to CODATA's future role in environmental data.

The prime conclusion of the workshop was that whether environmental programs are of political or scientific origin, scientific assistance in data aspects should reside in a non-political, non-governmental scientific organization, embedded in a program that is expert in scientific data management and especially also data quality. ICSU, with its new thrust in Global Change, provides such an umbrella organization, with CODATA providing the data expertise. While it was recognized that SCOPE is the primary ICSU body that deals with problems of the environment, it was felt that CODATA would be better-suited to deal with the data issues that accompany environmental programs. If CODATA were to adopt the recommendations of the workshop to establish an on-going environmental data program, then such a program in the spirit of the workshop must continue to have strong links with the environmental programs it intends to assist.

A common theme that emerged from the discussion was that data programs need to define clearly (1) their objectives, (2) required data quality to serve those objectives, and (3) an effective quality control/quality assurance program to ensure that the desired data quality is indeed achieved, while keeping in mind the resources available for the task. The proposed CODATA environmental data program should, likewise, work on most-needed and most-relevant, yet practically workable tasks.

Among the many recommendations for short-term tasks for an on-going CODATA program on environmental data are:

- more directories of environmental data resources,
- a multilingual dictionary of definitions (scope as yet undefined),

- a workshop on means of achievement of international communication for environmental data news items--e.g. on the establishment of a regular newsletter or journal,
- a discussion on secrecy versus exchange of data in industrial or ministerial data banks used for regulation,
- development of data documentation quality criteria or indicators to "label" the quality of existing databases,
- a task directed at estimation of total exposures.

A report of the workshop will be prepared by the organizing committee in collaboration with workshop chairmen and rapporteurs responsible for the four main topics:

Air: J. Hahn, R. Jaenicke (position paper prepared by both)

Water: R. Packham, D. Hunt (position paper prepared by C.E. Hamilton)

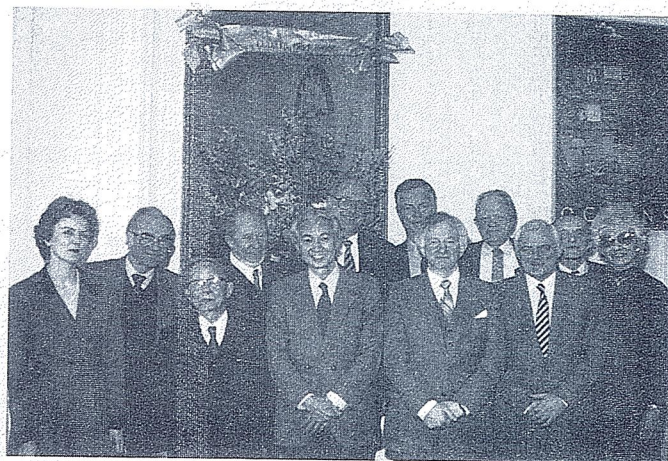
Soils/biota: H. Gyllenberg, B.O. Fabricius (position paper prepared by D.S. Barth)

Data Management: T.R.E. Munn, G.B. Wiersma (position paper prepared by P.K. Hopke and D.L. Massart)

Organizing Committee: Chairman: M. Martin-Bouyer; Members: G.C. Carter, J.L. Clark, A. Marson, B. Diamondstone, J. Forslund, J. Hahn, E.C. Halliday, and N. West; Corresponding Members: T. Plebanski and N.G. Rambidi.

CODATA's Executive Committee

Charged by the General Assembly with decisions and operation in the interim periods between General Assemblies, the Executive Committee tends to meet early in the calendar year at the Secretariat. They concern themselves increasingly with scientific as well as administrative questions and represent a relatively broad spectrum of geographical (national) and scientific (professional) competence and union representation. They posed for a collective photograph after completion of the decision process at their last meeting. (Some new members will appear after the General Assembly Election in Ottawa.)



Rear Row (L to R): H. Haendler, A. Bussard, D.R. Lide, Jr. (Secretary General), H. Behrens, E.F. Westrum, Jr. (formerly Secretary General), A. Bylicki (Vice-President).

Front Row: Sarah Levavasseur (ex officio), M. Kotani (formerly President), Y. Mashiko, W.W. Hutchinson (President), D.G. Watson (Treasurer), P. Glaeser (Executive Secretary).

Not Shown: J.E. Dubois (Vice-President).

New CODATA PUBLICATIONS.....

Evaluation of Thermophysical Property Measurement Methods and Standard Reference Materials. (A Report of the CODATA Task Group on Thermophysical Properties of Solids).^a By Merrill L. Mingos. Bulletin 60 (February 1986).

Scientific Program and Abstracts, Tenth International CODATA Conference. 14 - 17 July 1986, Ottawa, Canada. Bulletin 61 (May 1986).^f

Books for the Bookshelf.....

U.S. Earthquake Intensity Data.^b

Chemical Engineering Data Sources.^c Edited by Dorothy A. Janowski and Theodore B. Selover.

Directory of Special Data Bases in Israel. Edited by Eli-ahu Hoffman.^d

New Digital Data Available From New Zealand Strong-Motion Accelerograph Network.^e

Computer Physics Communications, Vol. 33, no. 1/3, Data Bases and Data Structures in Physics. Editor, J. Nadrchal.^f

Sources of Thermodynamic Data on Mesogens. By A. Beguin, J. Billard, F. Bonamy, J.M. Buisine, P. Cuvelier and P. LeBarny.^g

Database Machines and Database Management. By Esen Ozarahan.^h

The Fundamental Physical Constants and the Frontier of Measurement. By Brian W. Petley.ⁱ

**Further details on content, identification, price, source, etc. for above items (if available) are referenced below.*

^aIndividual copies available for US \$15 from Pergamon Press, Ltd., Headington Hill Hall, Oxford, United Kingdom, OX3 0BW.

^bThe Earthquake Intensity Data File is a computerized collection of more than 140,000 published damage and felt reports assembled by the National Geophysical Data Center (NGDC). It provides epicentral information for 21,000 U.S. earthquakes.

Depending on the needs of the user, the computer will search the file and list records specified by any combination of the following:

- Time interval (e.g., 1970-1980)
- Date and time of occurrence (e.g., April 18, 1906, 13:12 UTC).
- Geographic coordinates (e.g., 35.5N., 75.5W.; or 100-km radius of any point)
- City or State (e.g., intensity VII-XII in West Virginia)
- Intensity or range of intensity (e.g., intensity VXII).

A computer printout of a search of the Intensity File can be provided for \$125, or the complete file on magnetic tape can be purchased for \$350.

For a complete description of the file, please request the publication, *Summary of Earthquake Intensity File, KGRD No. 19* from: National Geophysical Data Center, NOAA, Code E/GC4, 325 Broadway, Boulder, CO 80303.

^c1986. American Institute of Chemical Engineers Symposium Series #247. Available from Publications Sales Department S, American Institute of Chemical Engineers, 345 East 47 Street, New York, NY 10017. ISBN-0-8169-0358-1. \$15 to AIChE members. \$30 to others.

^d1986. National Center of Scientific and Technological Information, 84 Hachashmonaim Street, P.O. Box 20125, 61201 Tel-Aviv, Israel. ISBN 965-228-003-8.

^eDigital data from the New Zealand earthquakes are available on an unlabeled magnetic tape. The tape contains 35 files, and can be produced in either ASCII or EBCDIC code in a 9-track, 1600-BPI format. Request Item No. EHS-0351-FO4.

The New Zealand Strong-Motion Accelerograph Network consists of 22 sites, which are located both in structures and in free-field locations. Strong-motion digital seismograms recently made available from the network contain 15 records from New Zealand earthquakes that occurred from 1968 through 1984; they ranged in size from magnitude 5.1 to 7.0.

The price per tape is \$200: National Geophysical Data Center, NOAA, Code E/GC4, Dept. FO4, 325 Broadway, Boulder, CO 80303.

^f1984. Proc. of the 5th Summer School on Computational Physics, Bechyne Castle, Czechoslovakia, 21-30 June 1983. xiv + 298 pp. U.S. \$95.50. Dfl 258.00

^gA special issue of the journal *Molecular Crystals and Liquid Crystals*. 1985. Gordon and Breach Science Publishers, P.O. Box 786 Cooper Station, New York, New York 10276. Telephone: (212)206-8900. Telex: 236735 GOPUB UR. Contents: Temperatures and Molar Enthalpy Changes at Phase Transition, Calamitic Mesogen, Discotic Mesogens, Globular Mesogens, Other Thermodynamic Data, Ayclic Molecules, Benzene, Biphenyl, and Quinquephenyl Derivatives; Heterocycles, Steroids, Discogens, and Plasto-gens. 311 pp. softcover ISBN 0-677-16575-7. \$94.00.

^h1986. Prentice-Hall, Englewood Cliffs, NJ. xx + 636 pp., illus. \$42.95.

ⁱ1985. Hilger, Boston, MA. 346 pp. \$49.00

CODATA China

(continued from page 2)

(3) The Committee, moreover, dispatched its staff to some CODATA meetings or on the tours abroad to study data work, while inviting the CODATA experts to China for lecture tours. Besides CODATA delegations which have already visited China, five more CODATA experts, including those who will come to be the lecturers at the "Training Workshops for Scientific Data Handling" in China, or come to have discussions with related Chinese working groups, have also been invited by the Committee and will come later this year.

Some National Committee plans for immediate future work:

- Organize the Working Groups in the areas of Earth and Biological Sciences, help evaluate, process and compile key value data for China's special characteristics or the data produced mainly in China,

and encourage exchanges and cooperative projects with other countries.

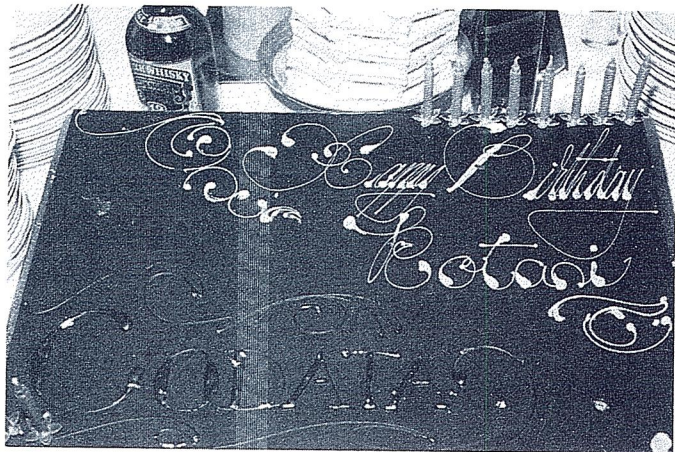
- Continue to support the existing four Working Groups for the work of data collection, evaluation, processing, and dissemination toward formation of the data handling systems in the areas;

- Continue to support Chinese scientists' and engineers' participation in the different programs organized by CODATA, thereby providing China's research and development institutions another channel to share international data resources and actively introduce CODATA's work to the country. This would again include sending people abroad for meetings, study tours, or a longer period of further training; and inviting our foreign colleagues to China for lecture tours or co-operative research work.

- To promote the effective application of data sources both from home and abroad in actual practice, we are now distributing the "CODATA Directories of Data Sources" to all related research institutions of the country. At the same time, we are preparing a compilation of the Directory of Data Sources which are mostly from China or with China's specialties, particularly in earth- and bio-sciences.

CODATA/Kotani Birthday Celebration

An immaculate chocolate-covered slab of pastry decorated with eight decade-sized candles in blue and two in pink bearing the short—but sweet—legend "Happy Birthday Kotani CODATA" was presented for CODATA's Twentieth Anniversary (and CODATA's former President's eightieth!) during the recent celebration shared with the ICSU family and many distinguished guests at the Secretariat.



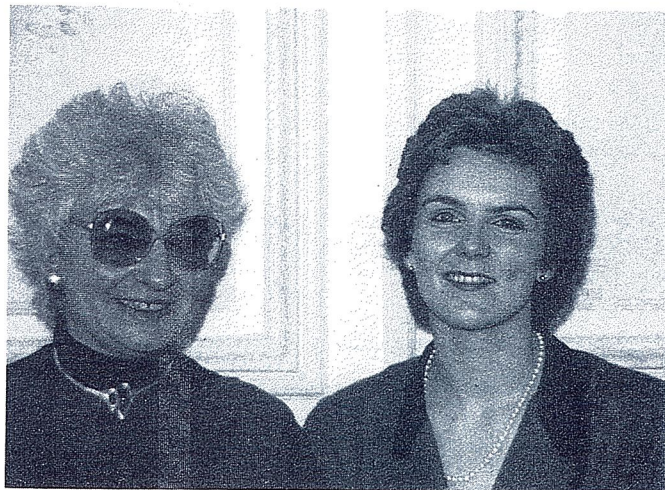
New Hungarian Delegate to CODATA

The Hungarian Academy of Sciences has announced that Professor Gyula Hardy will be the new Chairman of the Hungarian CODATA Section from January 1986. Professor Hardy is also Chairman of the Chemistry Section of the Academy and has succeeded Professor Imre Tarjan as the Hungarian Delegate to CODATA.

CODATA Secretariat

For the benefit of readers who will miss the opportunity to meet CODATA's Secretariat staff at the Ottawa General Assembly we feature an informal exposure of our highly competent personnel.

Mme. Phyllis Glaeser continues to serve as the Executive Secretary of CODATA, as Editor of the CODATA Bulletin and often as Editor of Proceedings of the CODATA International Conference Proceedings, and in innumerable ways facilitates the scientific productivity of CODATA. Mme. Sarah Levavasseur is much more than her title as bilingual typist would suggest. Expert also in text-processing work and related editorial pursuits, she helps to make the Secretariat productive scientifically.



Mmes. Phyllis Glaeser (l) and Sarah Levavasseur.

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