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COMMITTEE ON DATA FOR SCIENCE AND TECHNOLOGY

35 CODATA NEWSLETTER

JANUARY 1986

CODATA--Now 20 Years Old!

Young-at-heart CODATA is now 20! Far from static, with its blood-lines being continually renewed and reinforced, CODATA is rapidly approaching its "age-of-majority" and it behooves us to consider its origins and its early history.

Working Group on Critical Tables

At its meeting in London during June 1964, the Executive Committee of ICSU considered the proposal that ICSU offer its facilities for a voluntary coordination of compilations of critically evaluated numerical and other quantitative data being compiled in all appropriate disciplines in various countries to assure that the data are available as a meaningful whole to all who desire it. The Working Group, under the chairmanship of Dr. Harrison Brown (U.S.A.), examined the proposal in depth and recommended ways to create effective communication and coordination among interested union and national programs. The other members of the Working Group included: Academician V.A. Kirillin (U.S.S.R.), Prof. Dr. W. Klemm (Germany), Prof. F.D. Rossini (U.S.A.), Sir Gordon Sutherland (U.K.), and Prof. Boris Vodar (France).

The ICSU Working Group on Critical Tables convened in December 1964, at the National Academy of Sciences in Washington, D.C. and prepared the following resolution for presentation to the Executive Committee of ICSU:

"As part of the larger problem of the evaluation, storage and retrieval of scientific information, the compilation of critically evaluated numerical data emerges as a definable and important aspect. It was agreed that ICSU, as a leading international scientific organization, should take steps:

- *to increase awareness among all scientists of the importance of the problem, and in particular, to encourage your scientists to appreciate and participate in compilation work;*
- *to call attention to the need for improved status, salaries, working conditions, and facilities for compilers;*
- *to point out that evaluation and publication of numerical data is inherently expensive and that subsidies should be provided to compilers to keep book prices low, to libraries to make possible regular purchase of major collections of data;*

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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.

Materials Data Systems for Engineering

CODATA, the interdisciplinary data group of the International Council of Scientific Unions, held a workshop at Schluchsee in the Black Forest, Federal Republic of Germany, September 22-27, 1985, on computerized materials data systems for engineering. Further sponsorship was afforded by the Deutsche Forschungsgemeinschaft (DFG), Bonn; the Gesellschaft fur Information und Dokumentation (GID), Frankfurt; and the Fachinformationszentrum - Energie, Physik, Mathematik (FIZ), Karlsruhe.

The Schluchsee meeting followed up earlier international workshops on the same topic held at Fairfield Glade, Tennessee (1982) and Petten, The Netherlands (1984). The organizing committee consisted of:

- D. Abir, Tel Aviv University, Israel;
- I. Ansara, Polytechnic Institute, Grenoble, France;
- H. Behrens, Fachinformationszentrum Karlsruhe, Federal Republic of Germany
- Z. Bojarski, University of Silesia, Poland;
- G. Dathe (Chairman), Betriebsforchungsinstitut, Federal Republic of Germany;
- S. Iwata, University of Tokyo, Japan;
- H. Kröckel, Commission of the European Communities, JRC-Petten, The Netherlands;
- G. Östberg, University of Lund, Sweden; and
- J.H. Westbrook, Sci-Tech Knowledge Systems, Scotia, N.Y., U.S.A.

A total of 55 scientists, engineers and information managers from 13 different countries (Canada, People's Republic of China, Federal Republic of Germany, France, Great Britain, Israel, Japan, Poland, Sweden, South Africa, Switzerland, U.S.A. and the CEC) participated. Affiliation categories represented included industry, universities, government, research institutes, information centers, and standards organizations.

Specific objectives of this workshop were to:

- define complementary tasks (particularly standardization of terminology, materials data structures, etc.) which need to be accomplished to permit achievement of any effective inter-connected system,
- identify and assess conditions for international cooperation in building computerized data systems for engineering materials,
- identify the components of each major task and the associated

risks and chances of success,

- identify international organizations outside CODATA, as well as new CODATA Task Groups, which might be invited to undertake specific tasks, and
- establish liaison with other organized groups active toward the same goals (e.g., MPC, EEC, etc.).

To this end, the 55 participants were divided into several task groups, two different groups being assigned for discussion and analysis of each of the topical themes within the workshop scope. Findings were reported at plenary sessions which broadened the discussion and led to a general consensus.

As a result of the Workshop, more than a dozen specific projects were defined for implementation to assist in the interconnectability of independent materials data files. These projects ranged from compilation and harmonization of glossaries, to standardization of materials data structures, to development of techniques for incorporation of searchable graphics information. Action plans were laid out defining schedules for achievement of sub-goals, appropriate organizations were identified under whose aegis the work might go forward, and names listed of individual experts who volunteered to lead or contribute to the project. Other recommendations, not requiring further task group work, were formulated for transmission by the Workshop chairman, G. Dathe, to responsible authorities in CODATA or other organizations.

A full report of the proceedings of the workshop will be published by FIZ, Karlsruhe, in the Spring of 1986. This report will contain: the four introductory lectures given by Dr. B. Tell, U. of Lund, Sweden; by Prof. M. Van de Voorde of JRC-Petten, The Netherlands; by Dr. John Rumble, NBS, Washington D.C., U.S.A.; and by Dr. N. Waterman of Quo-Tec Ltd., U.K.; the rationale for the proposed projects and recommendations; a specialized glossary of terms and acronyms; a bibliography; and a selected file of names and addresses. Requests for copies of this publications may be addressed to FIZ-Karlsruhe, to CODATA at 51 Boulevard de Montmorency, 75016 Paris or to any member of the organizing committee cited above.

Although the goal posed by the Workshop is large, complex and costly, it appears timely to attack it seriously. The consensus reached at the Workshop, and particularly the very evident enthusiasm and spirit of international cooperation, bode well for the successful achievement of the plans laid. Among the practical consequences that can be anticipated from the realization of effective computer access to engineering information on materials are:

- improved performance and reliability of products and structures from improved materials selection,
- increased efficiency in the use of materials,
- contribution to automated design and manufacture,
- facilitation of technology transfer, and
- acceleration of the application of research.

Additionally, materials information specialists will benefit from:

- more complete, up-to-date, and consistent data files,
- exposure of data gaps and discrepancies,
- easier analysis and evaluation of data, and
- improved access and portability of data files.

ICSU Schloss Ringbert Conference

A special conference convened by ICSU at the Max Planck Society's Schloss Ringbert, just outside Munich, to examine ICSU's present and prospective role in international scientific cooperation hosted 45 participants from 25 nations including individuals familiar with ICSU as well as others active in international science, but without direct ICSU experience. The conference concluded that ICSU, as the principal non-governmental mechanism for global science cooperation, must become an even more active participant in international scientific affairs. While ICSU's basic objectives were considered most appropriate, the conference suggested increased effort in four areas:

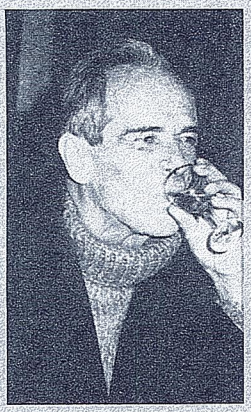
- Global Programs, focusing on high quality basic science and advance stragetic planning for interdisciplinary global and regional projects;
- External Partners, specifically increased collaboration with the engineering, social science, and medical research communities, and a more active advisory role to the full spectrum of intergovernmental agencies;
- Communications, including a whole range of activities to permit ICSU to be a more effective spokesman for international science cooperation; and
- Finances, particularly the development of more diversified support and expanded contacts with regional organizations, foundations and industry.

A Ringberg Conference Follow-up Group will recommend both immediate and long-term items for implementation.

CODATA PROFILE

Academician Styrikovich—CODATA's (first) Vice President from 1974 through 1982—is a world renowned scientific and technological leader. From 1960 until 1968 he was also Vice President of the World Energy Conference Executive Council, and since 1982 President of the International Center for Heat and Mass Transfer.

Born on November 16, 1902, in St. Petersburg (now Leningrad), he graduated in 1927 from Leningrad Technological Institute majoring in Thermal Engineering.



From 1928 until 1941, he worked in the Central Boiler-Turbine Institute; his last appointment was as Head of the Boiler Department. During 1934-1941 he simultaneously held a chair at the Leningrad Polytechnical Institute. From the War's end until 1960 he headed the High Pressure Steam Laboratory of the Energy Institute, and from 1960 to the present time, he has been in charge of the Mass-Exchange Department of the High Temperature Institute, USSR Academy of Science.

From 1945 till 1972, he simultaneously held a Steam Generator's Chair at the Moscow Power Institute (MEI). Since 1976 he has been in charge of a Consulting Working group for Scientific Long-Term Energy Prognoses of the Academy of Science. In 1964 he was elected to the USSR Academy of Science as a Full Member and as a Member of its Presidium. From 1964 until 1980 he served as Head of the Physico-Technical Energy Problems Department, USSR Academy of Science.

The main directions of his scientific activities include:

- Hydrodynamic and heat-mass exchange, especially in two phase flows and steam generating processes in power plants.
- General technical-economical problems of energy development in the world and its separate regions, energy resources use perspectives and longterm prognoses of energy development in the world.

Yet he has found time to author more than 45 scientific/technical publications, including 25 books, and he is a lively source of information on many diverse topics, for example, he delights in explaining why a partially filled glass of bubbling champagne will not ring like a glass of water because of the alteration of the speed of sound in a two fluid system.

3rd World Academy of Sciences

The Third World Academy of Sciences has announced two new programs: the TWAS Fellowship Scheme for developing country scientists, to enable them to pursue research and/or undertake lectureships, by working with colleagues in other developing countries and TWAS Research Grants. These latter provide Third World Scientists funds for research projects. For 1986 the program is restricted to mathematics and physics, but other fields of natural science will gradually be incorporated. Further information can be obtained from: The Third World Academy of Sciences, International Centre for Theoretical Physics, P. O. Box 5186, 34100 Trieste, Italy

Thermodynamics of Natural Processes

IAGC * IGCP * 7-1988
IMA * CODATA
TNP1
· STRASBOURG ·

The first International Symposium on Thermodynamics of Natural Processes will be held in Strasbourg, FRANCE, in July 1988. This Symposium--sponsored under the four flags of I.A.G.C., I.G.C.P., I.M.A., and CODATA--will be open to all fields of application of thermodynamics to the study of natural processes with particular interest in all modeling and computing methods. The first circular will be distributed in 1986.

I.A.G.C. is the International Association of Geochemistry and Cosmochemistry, I.G.C.P. is the International Geological Correlation Program, and I.M.A is the International Mineralogical Association.

Dr. Bertrand Fritz, Secretary General of the Symposium, is also Chairman of the subgroup, "Correlation Techniques and Computer simulation of Natural processes" within the I.A.G.C. working group, "Thermodynamics of natural Processes."

For more information, address him at: Centre de Sédimentologie et de Géochimie de la Surface, 1, rue Blessig, F-67084 Strasbourg Cedex, FRANCE. TEL.: 88.35.66.03. TELEX: CNRSCRO 890032 F.

Second International Symposium On Spatial Data Handling

Call for Papers

The First International Symposium on Spatial Data Handling was held in Zurich, Switzerland in August of 1984. The Second Symposium, organized under the sponsorship of the Commission on Geographical Data Sensing and Processing of the International Geographical Union, the International Cartographic Association and several other professional organizations, will be held in Seattle, Washington, U.S.A., on July 6-10, 1986. These meetings will be devoted to the in-depth exploration of scientific topics associated with the computer processing of map-type or spatial data. While the main thrust of the meetings is within the scientific and technical areas of the field, short papers on unusual or complex applications are also welcome.

Organization of the Symposium

Two classes of papers are solicited: short papers which will be allowed about twenty to twenty-five minutes for presentation, and long papers which will be allowed forty to forty-five minutes for presentation and will be assigned one or more formal discussants. All papers will be published prior to the start of the Symposium and it is anticipated that the presentation time will be utilized to expand upon the published paper and to introduce the latest results of the author's research. Papers will be presented on two parallel tracks during the period of the meetings. Ample time will be allowed for discussion from the floor and one afternoon will be set aside for informal discussions among scientists with common, specialized interests. One day will be devoted to a series of half- and full-day short courses on advanced topics.

Abstracts and Inquiries

All communications regarding the Symposium should be directed to: Dr. Duane F. Marble, Seattle Symposium, Post Office Box 571, Williamsville, N.Y., 14221, U.S.A., Telephone: 716/688-4281; Telex: 650-218-4975 MCI.

Comprehensive Thermodynamic Tables

The work of the CODATA Task Group on Chemical Thermodynamic Tables is described here with a view to making it more widely known in the scientific data community and with the hope of obtaining suggestions on how to improve its plans for the future.

These plans for the future are to engage the interest of the thermodynamics community in a cooperative effort to prepare databases and tables of evaluated data and substances. They are to be internally consistent so that all data items can be used with confidence in all applications. They are to be authoritative, being prepared by many experts. They are to be kept up-to-date with the intensive use of automated aids.

Why should the thermodynamics community undertake a program to prepare comprehensive, consistent tables? One reason is to simplify and standardize the quantitative interpretation of experimental results. A second reason is to simplify the retrieval of data needed in technical applications, and remove from the user the burden of selecting among disparate values. A third reason is to maximize the usability of thermodynamic data by making all recommended values consistent with each other. A fourth reason is that by spreading the work among many persons it will become possible to speed the task of producing the needed tables. Success in this cooperative data venture will do much to increase the impact of thermodynamics on the technical world.

The Task Group is planning for and putting into operation a system that will produce an on-going series of tables of chemical thermodynamic data (in both printed and machine-readable forms). So far they have accomplished three things:

(1) An analysis has been made of the process of evaluating thermodynamic data. This has been published as "A Systematic Approach to the Preparation of Thermodynamic Tables", CODATA Bulletin No. 47 (1982). This analysis describes each step in the process from the collection of published studies through the extraction of data, intercomparison of several studies, and selection of final values to the publication of the results. Although based on chemical thermodynamics, where the evaluation tradition is strong, the analysis is equally applicable to other disciplines faced with major compilation tasks.

A feature of the analysis is the planning for a very highly automated system to both store the extensive data and to retrieve it for use by both evaluators and users of the evaluation. A set of files has been defined that will form the basis for a schema for a database management system.

(2) A technical plan has been made for producing the databases and tables of evaluated data. This plan calls for:

- Comprehensive tables covering the properties of pure substances and mixtures as a function of temperature, pressure and composition. Inorganic and organic substances, alloys, fused salts, aqueous and non-aqueous solutions are all to be included.
- Internally consistent values of the chemical thermodynamic properties.
- Tables based on the CODATA Key Values.
- Many forms of outputs: printed tables, databases for internal use and electronic data distribution, algorithms for computing properties, correlations, phase diagrams, etc.
- A decentralized mode of operation. Experts in a particular subject will contribute evaluations of the data they understand best.
- A high level of automation to support the collection of information, distribution of data to the experts, reducing and analyzing data, making results from all evaluators mutually consistent and publishing the results.
- Readily available, centralized archives of data, both raw and evaluated. These are to be maintained on a continuing basis to simplify the updating of evaluated data.

(3) The Task Group has undertaken the obligation to maintain and update the CODATA Key Values.

(4) The first set of comprehensive, consistent tables has been prepared for the CODATA Thermodynamic Tables System and will be disseminated soon. This has been done by members of the Task Group as an experiment to test their plan.

Excerpted from a paper presented at the 1st CODATA Symposium on Chemical Thermodynamic and Thermophysical Properties Data Bases at Paris, Sept. 1985, by David Garvin and Howard J. White, Jr., National Bureau of Standards Washington D.C.

New Australian Delegate

Professor J.D. Morrison has been replaced as Australia's National Delegate to CODATA by Mr. C. Garrow. His address is: Mr. C. Garrow, Manager, Information Services, Library and Editorial Section, OSIRO, P.O. Box 89, East Melbourne, VIC, 3002, AUSTRALIA. His chairmanship began in 1985 and terminates in May 1988.

Thermodynamic Tables for Geoscientific Research

A computerized resource of chemical thermodynamic data for geologic materials will provide critically-evaluated, internally-consistent property values needed for a basic understanding of geologic processes. This project by Dr. Sidney L. Phillips is at Lawrence Berkeley Laboratory (Berkeley, California) under auspices of the Department of Energy.

Nuclear power progress hinges on disposal of radioactive (waste) products--preferably underground--to prevent planetary pollution. The data may be used in codes to predict whether the promulgated stringent rules and regulations are really adequate to insure security of the storage for a hundred centuries.

The tabulation is based on tables and reviews by CODATA Key Values Task Group, by U.S. National Bureau of Standards, by U.S. Geological Survey, by Naumov et al., by Rard (Eu,Ru,Tc), by Lemire (Np), by Lowson (Ra), and by others. The content of the database is currently limited mainly to inorganic minerals and ionic species, but generic organic substances will also be covered. Critical evaluation of data for iodine and selenium is underway. Regardless of the sources of the various values, great effort is expended to ensure the internal consistency of all intrinsic data, at 25 ^{o}C and zero ionic strength.

Values of Gibbs energy of formation, enthalpy of formation, entropy, and heat capacity are tabulated together with uncertainties. From these intrinsic data, values of equilibrium constants for geochemical processes may be calculated up to 300 ^{o}C, and generally to an ionic strength of three. These tables are available in report form, and by access to the LBL DATATRIEVE database management system. For information contact: Dr. Sidney L. Phillips, Lawrence Berkeley Laboratory, M.S. 5OB-3238, Berkeley, CA, 94720, U.S.A. (Tel. 415-846-6865).

Progress and discussions on saline brines, assignment of uncertainties, their propagation in geothermodynamic data, and the relationship to CODATA, IAEA, and OECD projects were reviewed by the 25 members of the U.S. Nuclear Regulatory Commission Advisory Committee on Dec. 17 at Silver Springs, MD.

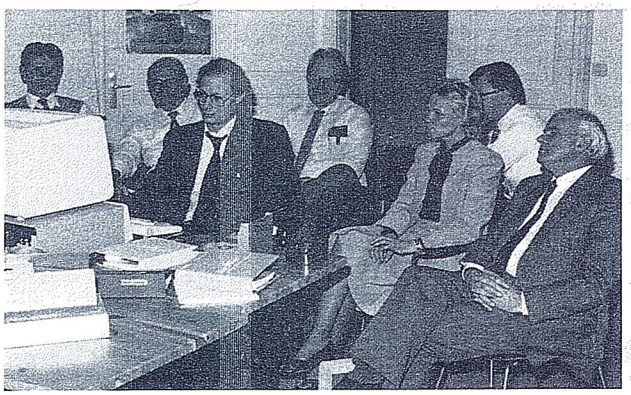
S & T Data Banks

A new book entitled, "Nonbibliographic Data Banks in Science and Technology", has been published in 1985 by UNIPUB for the ICSU Press. Additional information includes price (U.S. $39.50) and ISBN 0-93057-06X.

CODATA Referral Database

The Task Group on the CODATA Referral Database (TGRDB) met at the CODATA Secretariat, Paris, November 7-9, 1985. The following individuals were present: P. Billard, J. Dubois, D. Laurent, D. Lide, Jr., B.B. Molino. J.A. Rose, F.J. Smith, D.R. Watson, E.F. Westrum, Jr. The agenda for the meeting was reviewed, and the following administrative details were decided: B.B. Molino will serve as secretary to the Task Group. The Task Group will meet again at the Ottawa Conference.

Each of the two prototype systems was discussed and demonstrated. The recently developed mini-micro version of the Unesco ISIS software was demonstrated on an IBM XT using a test file of approximately 900 records consisting of all of the Inventory records and about 25 sample Directory records. The software is written in PASCAL and requires 512 K of memory. It will run on the 8086 family of computers, including the XT, AT, Wang, PDP, and microvax. The output format conforms to the ISO 2709 standard interchange for bibliographic information. It is a thoroughly integrated DBMS, which will ultimately have all the features of the mainframe version and will be supported by Unesco.



TGRDB considers microcomputer retrieval of Directory items on ISIS software. (l to r): J.E. DeBois, D.R. Lide, Jr., J. Rose, E.F. Westrum, Jr., B.B. Molino, F.J. Smith, D.R. Watson.

The second prototype used the BIRD software which is a smaller, simpler system requiring only 64 K memory. Input can be produced on any word processing system. Since the database is considered as text and is totally inverted, this system is especially useful when it is hard to invoke discipline at the input stage. For retrieval, there is a relatively small number of commands, which can be mastered in an hour. The system is working on 12 machines in 3 versions of PASCAL, and is being commercially marketed.

After extensive discussion, the Task Group concluded that it is advantageous to pursue both approaches, applying the strong points of each to the various aspects of creating, maintaining and distributing the Referral Database. Specifically, the Unesco ISIS software, with its high degree of structure, would be used for input, and updating; it is also more suited for interfacing with typesetting programs. The BIRD software, with its relative ease and user-friendliness, would be the primary program distributed with the Referral Database for ordinary search and retrieval. Plans for further endeavors and a demonstration during the CODATA Ottawa Conference were formulated.

ICSU - Developing Countries

The Study Group on ICSU Activities Related to Developing Countries (Paris, Sept.1985) agreed that to meet needs of developing country scientists and of various countries, ICSU should help to increase LDC capacities in science; to overcome the isolation of their scientists ; and identify problems of LDCs requiring science and technology.

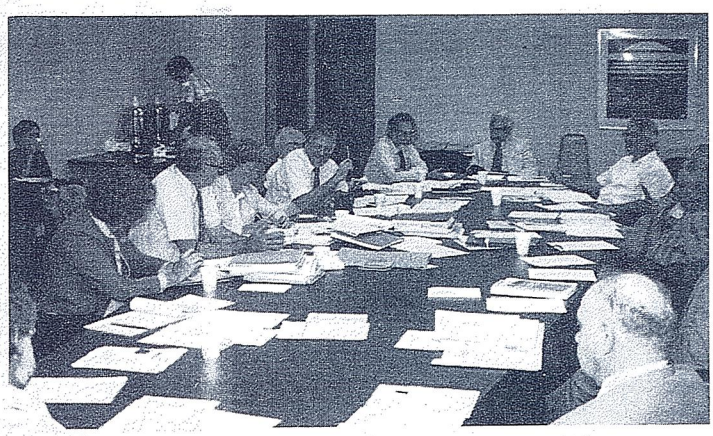
CODATA Calendar . . .

1986

February	
6-8	CODATA Executive Committee, Paris, France.
11-15	Training Course on Data Handling and Dissemination, Lyon, France.
March	
3-5	Hybridoma Data Bank Task Group, Nice, France.
21-25	Task Group on Geothermodynamic Data (partial) meeting, Ann Arbor, MI.
April	
6-8	Task Group on Coordination of Protein Sequence Data Banks, Munich, F.R.G.
28-29	Task Group on Phase Equilibrium (partial) meeting, Warsaw, Poland.
May	
18-23	Workshop on Directions for Internationally Compatible Environmental Data, Montreal, Canada.
22-23	Task Group on Phase Equilibrium Data, Warsaw, Poland.
June	
17-20	Task Group on Geothermodynamic Data meeting at Novosibirsk, U.S.S.R. (tentative).
(---)	Task Group on Fundamental Constants, Gaithersburg, U.S.A.
July	
14-17	10th International CODATA Conference, Ottawa, Canada.
18-19	15th General Assembly, Ottawa, Canada.
September	
13-14	T.G. Microbiological Strain Data Network, Manchester, England.

National CODATA Committees

The national committees for CODATA provide essential interaction with the administrative and scientific activities on the international level. In the United States, for example, the U. S. National Committee for CODATA (USNC-CODATA) meets twice each year for a two-day session in conjunction with the Numerical Data Advisory Board (NDAB).



USNC-CODATA phase of the NDAB/USNC-CODATA meeting (July 1985, Washington, D. C.)

Data Glossary

CODATA is compiling a general glossary of terms and acronyms relating to data and data manipulation. The availability of such a glossary would help clarify thinking, writing and speaking on all data topics and would be a valuable addition to our reference publication list.

The project will be under the general direction of Dr. J.H. Westbrook, Chairman of the Commission on Industrial Data, as editor-in-chief. To ensure broad coverage and representation of all CODATA interests in selecting terms for inclusion and drafting definitions where needed, it is proposed to solicit input from all entities in the CODATA organization: the 15 Unions, 2 coopted bodies, 3 Committees and 15 Task Groups and Working Groups. It is suggested that each of these 35 suggest 20 terms for inclusion in a glossary. This would yield on the order of 700 terms, quite enough for a modest size book. This list could then be extended in subsequent editions as a result of reader interest or the introduction of new terminology. The initial version of the glossary will be prepared in English. If acceptance of the concept and the English definitions is achieved, consideration could be given later to translation into other languages and the inclusion of acronyms derived from other languages.

The glossary will be restricted to terms and acronyms pertinent to data and data manipulation in general. Terms related to the content of any individual disciplinary field would be excluded as would most terms of strictly computer or statistical relevance. Examples of appropriate terms are as follows:

data	CODAN
metadata	NDAB
reference data	WIPO
descriptor	VAN
pointer	OMN
protocol	SI
packet	VNTITs
database	ASIDIC
network	BIPM
transparent	OCR
compatibility	PC
auto-correlation	TSO
link	OSI
variance	GKS
raw data	ASCII
flagging	APL
tagging	A/D
fundamental constant	IAC
smoothing	DLC
homogenization	EBCDIC
machine-readable	VDU
cluster analysis	EUSIDIC
encryption	PDM
replication	DBMS
reanalysis	SDI
verification	IGES
secondary analysis	SRM

For further information contact: Dr. J.H. Westbrook, Sci-Tech Knowledge Systems, 133 Saratoga Road, Scotia, NY, 12202, U.S.A. Tel.: (518) 399-2827.

ICSU Planning Group on Global Change

The second meeting of the ICSU ad hoc planning group on global change met in Frankfurt in October. It was chaired by Sir John Kendrew, President of ICSU. Considerable progress was made in refining the focus of the proposed International Geosphere-Biosphere Program (title is still tentative). Four working groups were establilshed and a small secretariat for planning effort will be established at the International Meteorological Institute in Stockholm where the third meeting of the planning group will take place in mid-June 1986.

Subsequently, the Executive Board accepted the resignation of Sir John Kendrew as Chairman of the Ad hoc Planning Group on Global Change and appointed Professor B. Bolin as the new Chairman until the end of the 21st General Assembly.

In order to advance progress in outling an International Geosphere-Biosphere Programme, the Planning Group agreed to establish Working Groups in four of the key areas that require further improved, more precise definition prior to the 1986 General Assembly. These are:

- Terrestrial Ecosystems and Atmosphereic Interactions (Chairman: Dr. F. di Castri)
- Marine Ecosystems and Atmospheric Interactions (Chairman: Professor J. J. McCarthy)
- Geological Processes: Past and Present (Chairman: Professor R. Price)
- Role of Solar Emissions and Upper Atmosphere in the Earth System (Chairman: Dr. J. G. Roederer)

These four areas would form the core group of IGBP studies and would be linked to a wide range of ongoing and planned activities, such as the WCRP, the CCCO programs, the solar-terrestrial physics programs, the studies within the framework of INQUA, etc.

(continued from page 1)

- *to increase personal contacts among workers in this area by periodic meetings of specialists in the various fields and exchange visits between related compilation centers;*
- *and to encourage programs of precise experimental determinations to fill in gaps in knowledge and to extend and complete compilations in important areas."*

The Resolution was discussed by the Executive Committee of ICSU at its April 1965 meeting and was adopted unanimously. The Working Group then made a preliminary determination of the interests of Unions and countries, explored possible membership, recommended working mechanisms for The Committee, and investigated sources of funds for travel expenses and the staff office.

The Working Group met at Frankfurt in September 1965 to act on the foregoing tasks and accepted with thanks the offer of the U.S. National Academy of Sciences to provide, for the first two years, office space for the Central Office of the ICSU Committee and the services of an Executive Director half-time and a secretary full-time. They also drafted an initiatory Constitution for the ICSU International committee on Data for Science and Technology (CODATA) and proposed membership and $10,000 in funds to partially support the activity for the initial two-year period.

At the 11th ICSU General Assembly at Rome in February 1966, the Working Group's report was approved with minor amendments and CODATA was launched.

It's first President, Prof. F.D. Rossini, 1966-1970 (profiled in a recent CODATA Newsletter) was assisted by Dr. Guy Waddington, the first Executive Secretary acting at Washington, D.C. During its first decade it was served by

Prof. F.D. Rossini ('66-'70)
Prof. B. Vodar ('70-'74)
Prof. P. Melchior ('74-'78)

as President, by

Prof. W. Klemm ('66-'68)
Prof. B. Vodar ('66-'70)
Sir Gordon Sutherland ('68-'72)
Acad. M.A. Styrikovich ('70-'72)
Dr. R.N. Jones ('72-'73)
Prof. T. Plebanski ('74-'78)

as Vice President, by

Sir Gordon Sutherland ('66-'68)
Prof. W. Klemm ('68-'72)
Prof. K. Egle ('72-'73)

as Secretary-Treasurers, by

Prof. N. Kurti ('73-'80)

as Treasurer and by

Prof. Edgar F. Westrum, Jr

as Secretary General ('73-'82).

Books for the Bookshelf . . . *

DECHEMA Chemistry Data Series, Vol. III: Heats of Mixing Data Collection, Part 1: Binary Systems, Part 2: Binary and Multicomponent Systems.[a]

Methodological approach for identifying the information needs of the engineer (Provisional text). Mme David.[b]

"La gestion de l'information dans l'entreprise". David, A. and Sutter, E.[c]

Solubility Data Series, Vol. 19 Cumulative Index Volumes 1-18. C.L. Young (editor).[d]

Solubility Data Series, Vol. 20, Halogenated Benzenes, Toluenes and Phenols with Water.[e]

Ammonia, Amines, Phosphine, Arsine, Stibine, Silane, Germane & Stannane in Organic Solvents. Solubility Data Series, Vol. 21. Edited by C.L. Young and P.G.T. Fogg.[f]

Scandium, Yttrium, Lanthanum & Lanthanide Halides in Nonaqueous Solvents. Solubility Data Series, Vol. 22. Edited by T. Mioduski and M. Salomon.[g]

Densities of Aqueous Solutions of Inorganic Substances. Otakar Sohnel, Petr Novotny.[h]

International Directory of Astronomical Associations and Societies 1986. A. Heck and J. Manfroid.[i]

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Directory of Scientific Directories, 4th edition. Consultant editor: Anthony P. Harvey.[k]

World Energy Directors, 2nd edition. Consultant editor: Wendy M. Smith.[l]

World Nuclear Directory, 7th edition. Consultant editor: C.W.J. Wilson.[m]

European Sources of Scientific and Technical Information, 6th edition. Edited by Anthony P. Harvey.[n]

Earth and Astronomical Sciences Research Centres. Consultant editor, Jennifer M. Fitch.[o]

Encyclopedia of Information Systems and Services, 6th edition, United States Volume. Edited by John Schmittroth, Jr.[p]

Thermochemical Data of Organic Compounds. S.P. Kirby, R.D. Naylor and J.B. Pedley.[q]

Online Databases . . .

Directory of Online Databases, Summer 1985 update issue.[r]

Chemest TM Online.[s]

The TRC Thermophysical Property Datafile I: Vapor Pressure.[t]

The Log P and Related Parameters Database.[u]

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

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a. DECHEMA. 20 + 798 pp., DM-Price: 490.00 + forwarding expense. ISBN-3-921-567-49-1.

b. Text prepared by General Information Programme and UNISIST, United Nations Educational Scientific and Cultural Organization. 1984. 66 pp. Paris: Unesco. PGI-84/WS/24.

c. AFNOR has published a book of 190 pages on the management of information in enterprises. The joint authors are Mrs. Antoinette David--well known internationally for her work in connection with the World Federation of Engineering Organizations CODATA, and Unesco--and Mr. Eric Sutter, Head, Research and Advisory Section on Standards Information Systems of AFNOR and formerly Chairman of INFCO/WG 1: Indexing, formats and codes. The book explains the function of information in the enterprise, what sort of information is required and how to identify it, what sources of information are available, how information should be diffused, the choice of equipment, methods and information personnel and the organization of the information function. Published by AFNOR. Distributed by Eyrolles, Paris, (in french). ISBN 2-12-475711-3.

d. Pergamon Press. $100.00 U.S.

e. Pergamon Press. $100.00 U.S.

f. This volume presents a comprehensive collection and critical evaluation of solubility data published prior to June 1983 for the compounds of the title. Emerging patterns of solubility behaviour for comparable systems are indicated. 1985. 360pp, 20 illus. approx., 200 lit refs approx. (R) $100.00. ISBN-0-08-0261779(H).

g. Includes solubilities of the title compounds in both organic and inorganic solvents, and in mixed solvents containing water as the major constituent, with complete literature coverage through 1984. the book serves as a useful guide to the disagreement in the published literature. 1985. 418 pp., 250 lit. refs., approx.(R) $100.00. ISBN-0-08-030709-4 (H).

h. The authors have compiled existing data on densities of inorganic substances, analysed them critically and uniformly processed them by computer. The result is an equation expressing the concentration and temperature dependence of densities of aqueous solutions up to their saturation in the temperature range of 0-100° C. Apart from the constants of the correlation equation, valid in the range of temperatures and concentrations given, the book also contains tables of densities for 10 values of concentration and 10 values of temperature. Elsevier Science Publishers B.V., Molenwerf 1, P.O. Box 211, 1000 AE Amsterdam, Holland. 272 pp., 311 tabs, (English) hard cover).

i. Sixth edition of well known compilation cover ca.1100 societies in 60 countries. Centre de Donnees de Strasbourg, Observatoire Astronomique, 11 rue de l'Universite, F-67000 Strasbourg, France. FF 100 or U.S. $12.00.

j. This annual series continues the cooperative effort to abstract and publish in formula order all the ultraviolet-visible spectra of organic compounds presented in the journal literature. Over 50 chemists have searched over 100 titles during the course of this project to assemble over 350 000 spectra through these twenty volumes. Dec. 1985. 1 088pp., $159.60 approx. (U.S.), 0471-83047-X.

k. An international guide providing full bibliographic details on approximately 1800 published and forthcoming directories, of organizations and individuals concerned which conduct, or promote, research and development work in non-nuclear energy. The subjects covered include studies of new energy sources, fossil fuels, energy conservation, energy storage and strategic studies. Improvements in format have been made for this second edition and it is fully indexed by title of establishment and by subject. 1985, 246 x 189 mm., cased., 582 pp., 120.00 lb. Alison Cowley, Longman Group Ltd, Westgate House, The High, Harlow, Essex, United Kingdom, CM20 1NE. ISBN-0-582-90026-3.

l. An international guide to 3000 industrial, official, academic, and independent organizations and laboratories

m. An international guide to over 2000 organizations and laboratories which conduct or promote research, development or substantial manufacturing work in the atomic energy field. subjects covered range from high energy nuclear physics, plasma physics and fusion technology, to radioactive waste management, economics and regulatory developments. A new feature for this edition is the inclusion of profiles of around 30 countries. 1985, 246 x 189 mm., cased., 387 pp., 95.00 lb. Alison Cowley, Longman Group Ltd, Westgate House, The High, Harlow, Essex, United Kingdom, CM20 1NE. ISBN-0-582-90025-5.

n. The sixth edition of this standard reference directory provides a detailed guide to 1500 key information sources on science and technology in Europe. The guide is arranged under 25 subject headings and information centres are listed by country under each subject area. It includes details of national offices of information, patents and standards offices, and organizations active in identified scientific fields with library facilities available to the public. The book has been completely revised for this new edition. January 1985, 246 x 189 mm., cased., 368 pp., 105.00 lb. Alison Cowley, Longman Group Ltd, Westgate House, the High, Harlow, Essex, United Kingdom, CM20 1NE. ISBN-0-582-90152-9.

o. Earth and Astronomical Sciences Research Centres gives details of organizations, laboratories and observatories throughout the world which conduct or finance research into any aspect of geology, cartography, surveying, ocean studies, meteorology and climatology, planetary and galactic observations, geochemistry, mineralogy and petrology, mining studies and earthquake control. the directory offers easy access to the names of senior geologists and astronomers, and the addresses and research and survey activities of approximately 4800 centres. 1984, 246 x 189 mm., cased., 742 pp., 120.00 lb. Alison Cowley, Longman Group Ltd, Westgate House, The High, Harlow, Essex, United Kingdom, CM20 1NE. ISBN-0582-90020-4.

p. The United States volume of the 1985-86 edition of Gale's Encyclopedia of Information Systems and Services Directory provides detailed descriptions of about 2,200 information organizations, systems, and services of international, national, or regional scope that are located in the United States and its territories and possessions. It is a companion to the International Volume (published 1984) that covers information organizations in 65 other countries with any aspect of research and education in the fields of science and technology. The directory is divided geographically into seven chapters with details listed within each section, under ten subject headings. The directory is indexed for the first time by publisher. January 1986, 246 x 189 mm., Cased., approx. 350 pp., 80.00 lb. Alison Cowley, Longman Group Ltd, Westgate House, The High, Harlow, Essex, United Kingdom, CM20 1NE. ISBN-0-582-90151-0.

tries. 1985, 1 230 pp, $200.00. Edited by John Schmittroth, Jr. In Two Volumes: United States Volume. Published by Gale Research Co., Detroit, MI, U.S.A. ISBN-0-8103-1541-6.

q. Chapman & Hall, London. ISBN-

r. The Directory is published quarterly and provides accurate and comprehensive coverage of all types of databases that are available to users through online, interactive systems. A one-year subscription includes two complete editions and two update supplements. Cuadra Associates, publisher, in partnership with Elsevier Science Publishing, Inc., 2001 Wilshire Boulevard, Suite 305, Santa Monica, CA, U.S.A., 90403. (213)829-9972. Telex-755814 Cuadra SNM.

s. Chemest is a sophisticated system based on the Handbook of Chemical Property Estimation Methods by Lyman, Reehl and Rosenblatt (editors). Methods have been reviewed and tested by scientists at Arthur D. Little, Inc. for accuracy and applicability to a broad variety of chemical classes. A confidence interval is reported for each property estimation. Enhancements are planned including the addition of the octanol water partition coefficient, the LC_{50} for fish and other property estimation capabilities. (A structural representation parameter called the molecular connectivity is also planned for future inclusion). Technical Database Services, Inc. (TDS), 10 Columbus Circle, New York, NY, U.S.A., 10019, (212)245-0044, Telex: 238790(NYK).

t. The TRC Vapor Pressure Datafile is the culmination of forty years of data compilation and evaluation that is exemplified by the American Petroleum Institute, Research Project No. 44 and the TRC Thermodynamic Tables, Hydrocarbons and Non-Hydrocarbons. Now available through the TDS online service, the TRC Vapor Pressure Datafile provides more complete and comprehensive coverage than ever before: over 25,000 records of experimental data and the interactive capability to generate calculated pressure and temperature tables within user-designated ranges. In the near future, the experimental data will approach 20,000 organic compounds, and accurate calculations of vapor pressure and normal boiling points for over 2,000 chemicals will be available. New values which appear in the literature will be added in semi-annual updates. Technical Database Services, Inc. (TDS), 10 Columbus Circle, New York, NY, U.S.A., 10019, (212)245-0044, Telex: 238790(NYK).

u. The Database includes over 30,000 records containing measured partition coefficients (P) for approximately 14,000 organic compounds expressed in logarithmic form. Additionally, a small file of calculated log P values is maintained for some compounds whose log P values have not been reliably measured. The database also includes a large compilation of measured values for steric, electrical effect, molar refractivity and other parameters for over 3,000 molecular fragments which can be used to predict log P values. Literature references are given for each measurement and many author comments and evaluations are included.

For over fifteen years, the Database has been updated and evaluated regularly by the Medicinal Chemistry Project at Pomona College under the direction of Corwin Hansch and Albert Leo. Technical Database Services, Inc. (TDS), 10 Columbus Circle, New York, NY, U.S.A., 10019, (212)245-0044, Telex: 238790(NYK).

Lipid Phase Diagram Compilation

A compilation of lipid phase diagrams to facilitate review of what has thus far been accomplished and highlight what remains to be done in this active research area is being assembled by Martin Caffrey. To date approximately 400 diagrams are in hand.

He intends to report all lipid phase diagrams that are available in the literature, present phase diagrams in a standard format, evaluate these simply at the level of examining for obvious errors and inconsistencies, regularly update the compilation, yearly or more frequently if the need arises, and publish the compilation in an appropriate journal such as Biochimica Biophysica Acta (lipids) or Chemistry and Physics of Lipids so that they will be generally accessible and available at the lowest possible cost. It is not intended that the compilation be a source of critically evaluated information. Consultation of the original reference(s) is recommended.

To facilitate compilation, he requests reprints, or photocopies--at the very least--references to work (whether published or not) relating to lipid phase behavior. This includes the binary, ternary, quaternary, etc. phase diagrams. Information on non-aqueous systems is also welcome.

He anticipates inclusion of a table of thermotropic transition temperatures of pure lipids (dry and fully hydrated) as well as data on lipid phase sensitivity to pH, salt, metal ions, proteins, etc. Hence, information of this sort would be very welcome. Acknowledgements and source information will be cited as appropriate.

Assembling this information will involve a considerable effort but one that will be appreciated by the entire lipid community. Please pass this request along to your colleagues who may wish to contribute to this compilation. A speedy reply would be greatly appreciated as the first draft of the compilation is to be prepared by March 1, 1986.

Please address: Dr. Martin Caffrey, Research Associate in Biochemistry, Molecular and Cell Biology, Cornell University, Division of Biological Sciences, Clark Hall, Ithaca, New York, 14853. Tel: (607)256-4156.

Nutrition: Directory of Data Sources

The twelfth chapter in the CODATA Directory of Data Sources for Science and Technology appeared as Bulletin No. 57, in October, 1985. Dr. Harold Haendler, Stuttgart, F.R.G., has provided a compilation of more than 100 data centers in 34 countries as well as national and international programs in both human foodstuffs and animal feedstocks together with 128 compilations on foods and 42 on feeds. Careful indexing by name, country, and subject categories make this very extensive list of special interest. Rapid publication despite incomplete information on online data centers, for example, was chosen with the provision that a subsequent edition may soon be needed. Information on two especially large networks: The International Network of Feed Information Centers (INFIC) and the International Network of Food Data Systems (INFOODS) together with a list of International Union of Nutritional Sciences affiliated and adhering bodies is also provided together with an index and glossary of acronyms.

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