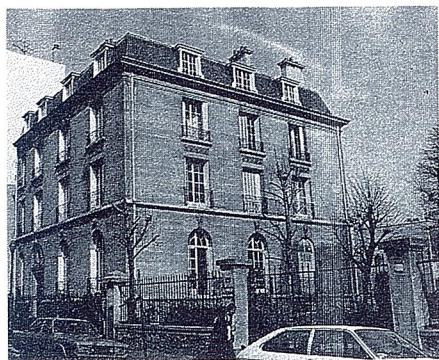


33 CODATA / NEWSLETTER

JULY 1985



CODATA's SECRETARIAT

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Auteuil - Home of CODATA's Secretariat

The Duc d'Ayen, son of the Duc de Noailles, supervised construction of the present Secretariat building in 1932 on a quiet Parisian Boulevard, in the part of Paris known as Auteuil (pronounced "fauteuil"). It is replicated after another residence built by the architect, P. Dolley in 1906, at 26 rue Emile-Ménier about a kilometer away. The original is now the Parisian Embassy of Djibouti. The new building at 51 Boulevard de Montmorency has belonged to the Ministry of Education since 1954. It became the new international headquarters of CODATA after the "Central Office" era at Frankfurt, F.R.G. in 1974 and continues to serve.

This charming structure has been a focal point for scientific encounter since 1973. The visitor to No. 51 is impressed with the diversity of administrative international scientific endeavors located there. Today, the 814 square meters of this 18th Century style building, in addition to housing the Secretariat of CODATA, serves as the headquarters for the parent organization ICSU (International Council of Scientific Unions), for SCOPE (Scientific Committee on Problems of the Environment), for COSPAR (Committee on Space Research), for ICSTI (International Council of Scientific and Technical Information), for IUBS (International Union of Biological Sciences), and for IBRO (International Brain Research Organization).

Two centuries ago, Auteuil, with a population of 1700, was one of many small villages surrounding Paris which gradually were absorbed into the expanding metropolis. The locale still maintains a village-like atmosphere, despite its present population of over 100 000. The Secretariat borders the Villa Montmorency, an exclusive, private conglomerate of homes in Paris. Their history alone would fill several pages.

Auteuil, a renowned literary, artistic, and scientific center, claims among its celebrities Molière, who lived there from 1665 to 1672; Sarah Bernhardt, a young school girl in Auteuil, described in her memoirs how she "learned to read, write, play a thousand games, sing nursery rhymes, and embroider handkerchiefs there." In the XVIIth Century, Puccini came to spend the end of his life in Auteuil and is buried there. Charles Gounod was married at the Church of Auteuil in 1852, and died there in 1893.

Auteuil is also the cradle of aviation. In 1784, the Montgolfier brothers flew the first aerostat; in 1883, the Tissandier brothers sent up the first dirigible and Clément Ader, the true father of aviation, created the first

(continued on page 8)

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.

IAU/IUGG Joint Working Group on the Rotation of the Earth

The Joint Working Group, under the Chairmanship of Dr. G.A. Wilkins of the Royal Greenwich Observatory, has been active in Project MERIT, a program of international collaboration to monitor Earth-rotation and intercompare the techniques of observation and analysis.

The third MERIT Workshop will be held in Columbus, Ohio, in late July 1985 to consider the reports on the operational aspects of the MERIT-COTES programs and to prepare recommendations for consideration at the IAU General Assembly in November. The Workshop will be followed on July 30-August 1 by an open scientific conference on "Earth Rotation and the Terrestrial Reference Frame" at which the preliminary scientific results obtained from these programs will be presented. In the meantime, the stations and the operational centers have been asked to continue to obtain and distribute observational data. It is hoped that all the data obtained during the MERIT Main Campaign generally will be available for analysis by the designated and associated analysis centers. Dr. R.W. King has agreed to coordinate work on the important task of inter-comparing the results, and he too has joined the MERIT Steering Committee.

In 1984 the emphasis was on demonstrating that operational techniques are now available for monitoring earth-rotation to much higher precision than was possible in 1978 when the Working Group was formed. This has been done successfully, and those concerned in developing the equipment and software and in making and analyzing the observations, have provided a sound basis for both further scientific research and practical applications in many fields.

Directory of Online Databases

Cuadra Associates and Elsevier Science Publishing Co., have announced the formation of a co-managed venture to publish and market Cuadra's Directory of Online Databases and to develop new products emanating from the Directory's database.

First published in 1979, the Directory of Online Databases currently lists and describes about 2650 online databases. The joint venture format will enable Cuadra Associates to develop and quality-control the editorial product while Elsevier will provide marketing, fulfillment and distribution. In addition Elsevier will develop new products including an online version of the Directory and subsets of the database on diskettes for vertical markets.

CODATA Personalities in the News.....

Professor C.N.R. Rao has been appointed President of the Indian National Science Academy. A long time CODATA stalwart, Dr. Rao has been CODATA Delegate from India and a member of the Executive Committee of CODATA.

Professor E.S. Rajagopal has been named Chairman of the Indian National Committee for CODATA and National Delegate to CODATA to fill the offices formerly held by Dr. Rao. Dr. Rajagopal is a Professor of Physics at Indian Institute of Science, Bangalore.

Professor A. Bylicki has been appointed Director of the Academy of Sciences, Department of Petro and Coal Chemistry, Gliwice, Poland

We note with regret the passing, after an extended illness, of **Galina Gavrilona Neverova** of Moscow. She was 48 and Secretary to the U.S.S.R. National Committee for CODATA for the past nine years.

Council for Scientific and Technical Information

ICSTI's Council, Executive Committee, and Technical Activities Coordinating Committee met in Baden-Baden, F.R.G. in May/June 1985. The Council accepted CODATA's application for Class A full membership. Five ICSU Unions, and national scientific bodies comprise this class. Information and abstracting services, and publishers comprise Class B membership. Associate (non-voting) members also participate. ICSTI is a Scientific Associate of ICSU; its President is Jacques Michel, and its Secretary General is Dale Baker. This was the Council's first meeting since ICSTI's name was changed, and its new statutes were approved.

Working groups in chemistry, physics, document delivery, and legal aspects of information transfer were established and study groups were appointed to consider the needs for other working groups, including numerical data and user needs.

Dr. David R. Lide, Jr., represented CODATA at the Council meeting to ascertain how CODATA's base of scientific and technical expertise might interact productively with ICSTI's resources among information producers and distributors. ICSTI contacts for three ongoing CODATA projects were identified, and CODATA individuals whose contributions might benefit ICSTI projects were chosen. In addition, initiatory discussion on possible joint CODATA/ICSTI projects--such as data flagging and tagging, legal and economic issues--was begun.

The possible technical activities which ICSTI might undertake--apart
(continued in next column)

from narrow publishing concerns--include a number which impinge on data base production, electronic forms of output, and video disk technology.

International Symposium on Geochemistry and Health

Approximately 100 persons attended the first International Symposium on Geochemistry and Health held at the Royal Society in London in April 1985. Attendees represented approximately 16 countries, as well as departments of the government of the United Kingdom. Invited papers comprised the five sessions which covered geochemical mapping, soil chemistry and the mapping of disease, including cancer mortality and selenium toxicity, and studies of cardiovascular disease and water quality.

The sessions on geochemical mapping were extremely interesting, as were the sessions on mapping of disease. Discussions of geochemistry and health were illuminating, in that it now appears that the data gathered on the distribution of minerals in various countries, coupled with information on incidence of various chronic diseases, can now be correlated to provide time sequence, computer-developed maps, as well as distribution and correlations of geological and mineralogical data with incidence of disease.

It would appear that efforts in this area of research should be encouraged and that a role for CODATA should be circumscribed and developed, as databanks are now being developed in a number of countries, and networking can be pursued. Furthermore, the program developed for epidemiological studies appears to be highly suitable for correlations of mineral distributions and disease incidence.

The symposium was well-organized; the speakers were, in general, very good. The discussions were active and useful. In summary, the meeting was productive. CODATA was officially represented by Dr. Rita R. Colwell, who provided the report from which these comments have been excerpted.

ACTA Pharmacologia Sinica

Acta claims to be the first Chinese journal to use keywords for original research papers and to provide keyword indexes in each journal. Edited by Ding Guang-sheng, and published in Shanghai, it is presently quarterly, but will go to bimonthly publication in 1986. Submission of short manuscripts in English is encouraged; articles in both English and Chinese appear (each with keywords in the language of the article, but these words do appear in both language indexes of keywords).

Multisatellite Thematic Mapping on Tanzania

The CODATA Working Group on Multisatellite Thematic Mapping initiated in 1982 has virtually completed its first application on Tanzania (East Africa), using LANDSAT, METEOSAT, NOAA, and TIROS N.

This endeavor is considered as a tool for regional integration of geologic, geographic, and climatic data for multidisciplinary application, especially land-use planning and mineral exploration.

The project focuses on geomorphological mapping of test areas in Tanzania, ground-truth work, development of multisatellite data evaluation techniques, and training of African counterparts in the field and in the laboratories.

The first phase of the project (1983-84) included the combined use of METEOSAT and LANDSAT data on the area of Iringa (35° - 36° East and 7° 30' - 9° 30' South) and the combined use of visible (AVHRR1) and thermal (AVHRR 4) channels of NOAA 2 and TIROS N on the west part of Tanzania (30° - 37° East and 1° - 10° South). Two classifications have been mapped at two different scales: 1/500 000 (METEOSAT/LANDSAT on the Iringa area) and 1/2 500 000 (NOAA 7/TIROS N) on West Tanzania.

The map shown here is a classification of the combined channels of NOAA 7. In this first phase of the classification of NOAA 7/TIROS N data, we propose a discrimination of the principal geographical units which characterized this area and an interactive discrimination of the main lineaments and geological features.

The fully detailed classification has been supervised by the interactive use of different data, particularly for the identification of lineaments, faults, and geological boundaries. During this phase, the main data have been:

- 1) Multisatellite images (NOAA 7 and TIROS N channels and neochannels, NOAA 7 classification)
- 2) Geological map series 1/125 000 of Tanzania (German Geological Mission 1963-66)
- 3) International Tectonic Map of Africa 1/5 000 000 (UNESCO, 1968)
- 4) Geophysical and Mineral Potential Atlas of the United Republic of Tanzania, (Geosurvey International, 1982-83)

The first phase of this project has been conducted by the CODATA Working Group in cooperation with

- The Eastern and Southern African Mineral Resources Development Center (ESAMDR, Dodoma)
- The Earth Sciences Division (UNESCO, Paris)
- ESA-ESOC (Meteosat Database, Darmstadt)
- Rosenfield School of Marine Sciences, Miami University (NOAA 7 and TIROS N Database)

Data processing has been performed at CTAMN (Centre de Télédétection et d'Analyse des Milieux Naturels, Ecole des Mines de Paris, Sophia-Antipolis, France) in cooperation with the B.G.R. (Hannover, F.R.G.)

In conclusion, they have developed a methodology to combine thermal and reflective data from different satellite sensors for the discrimination of soils, rock lithologies, and geobotanical indicators. In conjunction with ground-truth observations and the evaluation of structural features, the method is applicable to regional studies for land-use planning and mineral exploration. It will be used in the Unesco-IUGS-GARS Program in the Kibaran Belt, forming the basis for more detailed remote-sensing studies on larger scale. The results will contribute to an improved interpretation of the geology of the Kibaran Belt, its structure and mineralization.

This report has been prepared by C. Bardinet (CTAMN), G. Gabert (BGR), and J.M. Monget (CTAMN).



NOAA 7 (19/7/79) thematic classification map on West Tanzania. The legend of the NOAA classification on the figure printed here is tersely compressed. The map will be printed in four-color offset processing in the final CODATA report at a scale of 1/2 500 000 (world map). Classes—23 in total—cover taxonomy of the landscape of West Tanzania. These have been combined for this article as follows: Class 1, margin of the map; Class 2 through 5, lakes; Class 7, neogene; Classes 8 through 18, various types of sandy loam; Class 19-22, higher altitude sands, clays, and loam systems.

Chinese CODATA Delegation Visits U.S.A.

Professors Tan Daping (Deputy Secretary to the Chinese National Committee for CODATA) and Xu Zhihong (also a recent addition to the National Committee) visited a number of data activities in the Washington, D.C. area. They had discussions with all major data centers and conferred with staff at National Reference Data Service regarding cooperation on physics and chemistry databases. They also met with scientists and information specialists at the Food and Drug Administration, at the National Cancer Institute, and at the National Library to ascertain the current status of online bases for chemical and taxonomical data. On a visit to the American Type Culture Collection, they discussed progress on the hybridoma data bank. They also met with the Chemical Abstracts Service staff to discuss issues relating to scientific information storage, retrieval, and dissemination.

They spent 16 days in all visiting high-tech information centers. The visit of Professors Xu and Tan to the U.S. was hosted by the National Bureau of Standards. The People's Republic of China was accepted as a National Member of CODATA at the June 1984 General Assembly Meeting.



Chinese scientists meet with Chemical Abstracts Service staff: (left to right), Professors Tan Daping and Xu Zhihong, Dr. Ed King, Pat Wilson, Tony McNamara, Joe Mockus, Gerry Vander Stouw, Lou O'Korn.

National (US) Space Science Data Center

Although CODATA has not produced a directory of space science data sources, NSSDC certainly qualifies as an interesting entry.

NSSDC is one of the principal Centers within the Space Data and Computing Division of the Space and Earth Sciences Directorate at Goddard. (The other Centers are the NASA Space and Earth Science Computing Center and the Goddard Image and Information Analysis Center.) The Division and Directorate are headed by Drs. Milton Halem and Frank Martin, respectively. Dr. James L. Green has been selected Associate Division Chief and NSSDC Director. It exists primarily to assure continuing accessibility and utility of data produced by NASA spaceflight missions.

For most of its nearly 20-year history, data were primarily held offline in the form of magnetic tapes, microforms, photographic film, and hardcopy. In this offline environment, NSSDC typically acquired reduced and analyzed data from individual scientists, archived these data, retrieved data in response to requests with the aid of an automated information system, duplicated tapes or film, and mailed data along with a documentation package to requesters.

They have entered an era when data will be held and transmitted in both offline and online forms. For offline data, NSSDC is beginning to move to higher density storage media, optical disks for digital data, and videodisks for analog images. NSSDC also is bringing some of its archives online to allow access from remote terminals. Moreover, as a node on the DECnet-based Space Plasma Analysis Network (SPAN), some users will have computer-to-computer access to online data. NSSDC has recently assumed the role of providing a central Directory/Catalog service, whereby users can determine characteristics of data possibly relevant to their current needs, including data location and access procedures. Data described may be held online or off, at NSSDC or elsewhere.

In addition to these activities oriented toward data accessibility, NSSDC pursues other activities. For instance, NSSDC personnel have developed systems to facilitate the use of data, including the coordinated Data Analysis Workshop (CDAW) and Pilot Climate Data System (PCDS) software packages. Value-added data sets have been created by appropriately synthesizing various data sets. Solar-wind magnetic field and plasma compilations and models of geomagnetically-trapped energetic particles are notable examples.

It is likely that NSSDC will be the principal archive in some disciplines;

may do long-term archiving in most disciplines; will provide the central Directory for the whole system; and will provide overall leadership in the development and implementation of the hardware, software, and communications approaches needed for effective data management in this distributed environment.

—by J. King in NSSDC Newsletter, No. 1, April 1985.

National Materials Property Data Network Appoints President

The National Materials Property Data Network, Inc. appointed Mr. J.G. (Gil) Kaufman as President and Chief Executive Officer effective June 1, 1985. Mr. Kaufman, previously Vice President, Research and Development for ARCO Metals, a Division of Atlantic Richfield, is a veteran of more than 30 years in materials research, and a leader in materials property database development and computerization. While with Alcoa, he established the first computerized fracture toughness database in which the quality, character and validity of raw test data were included in the basic program software.

The National Materials Property Data Network is a not-for-profit organization with the mission of providing ready online access to research and engineering data on the mechanical and related physical, electrical and chemical properties of a wide variety of structural materials. This will be accomplished by computer networking existing databases, working cooperatively with their industrial, association and government agency sponsors, and—where appropriate—building new databases to meet engineering needs.

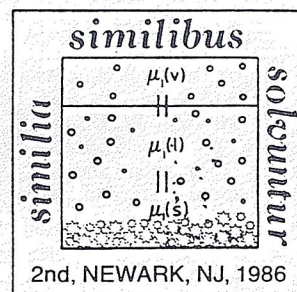
The present business focus has three elements. Firstly, activity is under way to identify existing online databases which should be included in the Network, and to develop the arrangement under which they would be linked. Secondly, a search has begun for existing volunteer databases which are not online, but with a minimum of effort might be brought online and added to the Network. Finally, a study has begun of needs for entirely new databases and of means for developing the needed data for the Network. In some cases, such needs will be through programs carried out by The Metal Properties Council.

The scope of properties envisioned for the NMPDN is dominated by design mechanical properties, including subcritical fatigue, stress corrosion

and creep crack growth and fracture toughness. In addition, extensive background or meta-data are planned, including chemical composition, metallurgical properties, fabrication practices, and physical properties. Further, the electrical, electrochemical, and tribological properties of appropriate materials will be added to the Network as they become available. While the principle focus will be on individual "raw" test data, handbook data will be included where demand exists.

Private industry has provided all of the funds for startup of the operation. Additional support is anticipated from government agencies, DOE, DOT, and DOD. Once under way, the Network will be supported by a combination of sustaining membership, subscription and user fees.

Second International Symposium on Solubility Phenomena



A broad and balanced perspective of all aspects of solubility phenomenon replete with plenary lectures by experts, submitted papers, and a poster session is being organized at the New Jersey Institute of Technology, Newark, New Jersey, U.S.A., August 12-15, 1986. It is sponsored by IUPAC's Division of Analytical Chemistry Commission on Solubility, Data chaired by Professor A.S. Kertes.

The scope of interest will include solubilities of drugs and related compounds, of polymer systems, of non electrolytes, of gases, in hydrocarbon/petrochemical systems, in natural waters, in molten salts, in metals, in slags, and in glasses; as well as theory and practice of phase diagrams, correlations and predictions of solubility data, high pressure solubilities, methods of critical evaluation of data, solubility phenomena in rock formations, theories of solubility, vapor-liquid equilibria, links between thermochemistry and solubility of solids, enthalpies of solution, and applications of solubility data.

Those desiring further information, circulars or provisional application forms should contact:

Dr. Mark Salomon, Co-Chairman
Second International Symposium on Solubility Phenomena
P.O. Box 254,
Fair Haven, New Jersey 07701,
U.S.A.

CODATA Workshop on Materials Data Systems

A CODATA Workshop on Materials Data Systems for Engineering will be held at the Schluchsee conference site in the Black Forest (F.R.G.) on 22-27 September 1985. The 80 selected participants, broadly international in character, are representative of three important fields: a) materials, b) information systems and services, c) and engineering design. The objectives of the workshop are to:

- define the particular subsidiary tasks (other than data evaluation and database building per se) which need to be accomplished to permit achievement of an effective networked system,
- identify and assess conditions for international cooperation in building computerized data systems for engineering materials,
- assess the conditions for each major task and the risks and chances of success,
- identify international organizations outside CODATA, as well as new CODATA Task Groups, which might be invited to undertake certain tasks,
- establish liaison with other organized groups active toward the same end (e.g., MPC, EEC, etc.)

The workshop on "Computerized Materials Data Systems," sponsored by CODATA exploring the problems confronting their development, concluded that few, if any, technical barriers exist but that extensive cooperation and standardization on an international scale must be instituted before any broad, successful engineering materials data system can be realized. The recommended concept was one of a coordinated system of independent databases, each of limited scope.

In the 2.5 years since the Fairfield Glade, Tennessee workshop, substantial progress has been made. The Metal Properties Council (U.S.A.) has established a separate corporation to seek funding and has begun to build a system of this kind; the National Bureau of Standards and Department of Energy (U.S.A.) are embarking on the construction of a demonstration system; and the European Economic Community, other European countries, and Japan are contemplating building similar systems. The present workshop will assist in coordination of these several efforts and will maximize cooperation and standardization on an international scale.

CODATA's sponsorship of another workshop anticipates that a formal report comprising published recommendations of what should be done and who should do it, would be the principal product.

The Organizing Committee, composed of the following, met in Paris in April to formulate plans.

- 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), Betriebsforschungsinstitut, FEDERAL REPUBLIC OF GERMANY;
- S. Iwata, University of Tokyo, JAPAN;
- H. Kröckel, Commission of the European Communities, JRC-Petten, THE NETHERLANDS;
- G. Ostberg, University of Lund, SWEDEN;
- J. Westbrook, Knowledge Systems, U.S.A.

Further information is available from:

Dr. H. Behrens, Fachinformationszentrum Energie, Physik, Mathematik, D-7514 Eggenstein-Leopoldshafen 2, FEDERAL REPUBLIC OF GERMANY, Telephone: 49 07247, 824554; Telex: 7826487 fize d.

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CODATA CALENDAR

1985

August

- 9-11 Microbial Strain Data Network Working Group Meeting. Helsinki, Finland.

September

"Thermodynamics Festival"

- 5-7 Vapor-Liquid Equilibria in 1-Alkanol and n-Alkane Mixtures. Paris, France.
- 9-10 Chemical Thermodynamic and Thermophysical Properties Databases. Paris, France.
- 11-13 Critical Evaluation and Prediction of Phase Equilibria in Multicomponent Systems. Paris, France.
- 5-7 Task Group on Critically Evaluated Phase Equilibrium Data. Paris, France.
- 5-8 Task Group on Data for the Chemical Industry. Paris, France.
- 13-14 CODATA Officer's Meeting, Paris, France.
- 16-19 Task Group on Geothermodynamics. Reston, VA, U.S.A. (tentative)
- 22-27 Workshop on Materials Data Systems for Engineering. Schluchsee, F.G.R.
- Working Group on Data for Surveillance of Active Volcanoes. Catania, Italy.

October/November

- Task Group on Referral Database (tentative). Paris, France.

December

- 9-11 Task Group on Hybridoma Data Bank. Nice, France.

1986

May

- 18-23 CODATA Workshop on Internationally Compatible Environmental Data. McGill University, Montreal, Canada.

July

- 14-18 10th International CODATA Conference. Ottawa, Canada.
- 18-19 15th General Assembly. Ottawa, Canada.

1988

- (---) 11th International CODATA conference and 16th General Assembly (tentative). F.R.G.

Symposium on Spatial Data Handling

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

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The International Union of Microbiological Societies (IUMS)

If microbiological scientists can be said to have only a vague notion about the nature of IUMS, what about the rest of us scientists? IUMS is one of CODATA's latest Union "acquisitions" and we need to know more about them.

What is IUMS?

IUMS, the International Union of Microbiological Societies, is a worldwide federation of 80 national microbiology societies (or similar types of organizations) in 57 countries, together with a number of international societies, all having a common interest in microbiological sciences and together representing about 75 000 individual scientists. IUMS is non-governmental, non-political, non-discriminatory, and not-for-profit

Within IUMS there are three Divisions that deal with the disciplines of bacteriology, mycology, and virology. Seven Committees, eight Commissions, and two Federations (collectively known by the acronym COMCOFs) are a number of international societies, such as the World Federation of Culture Collections and the International Society for Human and Animal Mycology.

IUMS in 1982 became one of 20 basic science Unions affiliated with the International Council of Scientific Unions (ICSU). ICSU membership is vitally important to microbiological sciences internationally because it recognizes the status of microbiology equally with other major disciplines, brings microbiology into the primary scientific council of the world, enables microbiology to play a more active role in the national academies which make up the national membership of ICSU, and provides a substantial financial resource.

IUMS also cooperates with the United National Educational, Scientific and Cultural Organization (Unesco) and its Microbiological Resource Centers for the assistance of teaching, research and application of microbiology in developing nations.

IUMS programs that involve medical microbiology are operated jointly with the World Health organizations for Medical Sciences (CIOMS).

IUMS in 1980 modified its name from the International Association of Microbiological Societies (IAMS) and withdrew as a Division within the International Union of Biological Sciences, with which it had been affiliated since 1967. The origins of IAMS and IUMS trace back to the International Society of Microbiology which was founded in 1927.

IUMS now has become a large, widely affiliated and actively functioning international scientific organization. Its goal is to represent microbiological sciences internationally with the broadest possible membership and to advance microbiological sciences globally with the best possible services for the benefit of humankind.

What Does IUMS Do?

International Congresses of Microbiology have been organized regularly by IUMS since the first one in Paris, France, in 1930. The fourteenth will be held in Manchester, U.K., in September 1986. Each Division also regularly organizes congresses and several other IUMS groups also regularly convene major meetings.

IUMS collaborates with other ICSU Unions, Unesco, WHO, and CIOMS in global programs such as oceanic and space research, science and technology in developing countries, genetic experimentation, and the application of science to agriculture and human health.

IUMS is engaged in presenting microbiology training courses. The Mycology Division has recently organized a new medical Mycology Training Program for which a host country need provide only local costs for the visiting faculty.

The classification and nomenclature of bacteria, fungi, and viruses is a major activity conducted by IUMS

committees. A main undertaking of the International Committee for Systematic Bacteriology is the International Code of Bacterial Nomenclature and the Approved Lists of Bacterial Names. A parallel task is undertaken by the International Committee on the Taxonomy of viruses in the preparation of regular Reports on the Classification and Nomenclature of Viruses. Similar efforts in systematics have been undertaken within the Mycology Division.

The sponsoring of scientific journals is a major and growing activity of IUMS and its constituents. For example, Microbiological Sciences is a new and important IUMS journal that deserves special consideration by individuals and libraries around the world. This monthly journal contains concise reviews and news articles on forefront topics in all of the microbiological sciences.

What is IUMS Doing in CODATA?

The benefits arising from linkage of CODATA with IUMS is that the opportunity for chemists, physicists, geologist, computer scientists and information scientists, as well as biochemists and microbiologists, to interact in areas of mutual interest concerning scientific data and data handling is made possible at the international level.

A Nucleic Acid Sequencing Task Group is being considered by CODATA and possible co-sponsorship with IUMS would be a most appropriate activity for the two organizations to undertake. This is but one of many possible close alliances which can be formed. At its last General Assembly, CODATA established a working group on Microbial Strain Data Networks, under the Chairmanship of Dr. M.I. Krichevsky.

Abstracted from a presentation by Philipp Gerhard (IUMS President) and Rita R. Colwell (IUMS Delegate to CODATA)

MATERIALS DATA SYSTEMS

(continued from page 5)



Workshop Organizing Committee meets at Paris Secretariat. Standing, from left to right: S. Iwata, Japan; Z. Bojarski, Poland; H. Kröckel, The Netherlands; H. Behrens, F.R.G. Seated, from left to right: I. Ansara, France; D. Abir, Israel; J. Westbrook, U.S.A.; G. Dathe, F.R.G.; G. Ostberg, Sweden.

New CODATA Publications . . . *

CODATA Directory of Data Sources for Science and Technology, Chapter 12: Nutrition. H. Haendler, Chapter Editor, Bulletin 57 (July 1985).^a

Books for the Bookshelf . . .

Aldrich Library of FT-IR Spectra. Edition I. Edited by Charles J. Pouchert.^b

CRC Handbook of Identified Carcinogens and Noncarcinogens: Carcinogenicity-mutagenicity Database. Edited by Jean V. Soderman.^c

• Vol. I, Chemical Class File.

• Vol. II, Target Organ File.

Databases for Microcomputers . . .

Aldrich-Nicolet^f Digital FT-IR Database for Personal Computers

CRC Handbook of Materials Science. Edited by Charles T. Lynch.^d

• Vol. I, General Properties.

• Vol. II, Metals, Composites, and Refractory Materials.

• Vol. III, Nonmetallic Materials and Applications.

• Vol. IV, Wood. Edited by Robert Summitt and Alan Sliker.

CRC Handbook of Physical Properties of Rocks. Edited by Robert S. Carmichael.^e

Sadtler Software for IBM PC access to four Sadtler databases and/or Search Libraries.^g

New Online Databases . . .

Biotechnology. Online database of biotechnological business and research news on Data-Star, the European Computer Bureau.^h

Chemical Structures. To be online from Télésystèmes computer in Valbonne, France in early 1986.ⁱ

GENETOX, Chemical Information System (CIS), US.^j

ISHOW (Information System for Hazardous Organics in Water), Chemical Information System (CIS), U.S.^k

Plastiserv. An online description of products information service for book orders from Wiley.^l

Toxic Effects. Collection from U.S.A.'s NTIS Files on disks for IBM PCs and compatibles.^m

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

a. CODATA Bulletin. Subscriptions: Pergamon Press, Ltd., Headington Hill Hall, Oxford, U.K., OX3 0BW.

b. High quality FT-IR spectra produced from the Aldrich-Nicolet high-resolution digital database—a collaboration between the world leaders in laboratory chemicals and FT-IR spectroscopy. All spectra laser-referenced for wave number accuracy. Two cm resolution, linear in wave number with three scale regions to highlight functional group fingerprint frequencies. 2,900 pages in two hard-bound volumes with tear-proof jacket. Page size: 12 x 9-1/2 in. Catalog Number Z12,700-0, \$375.00. Aldrich Chemical Company, Inc., PO Box 355, Milwaukee, Wisconsin 53201, U.S.A.

c. These desk-top references catalog substances known to be carcinogenic and noncarcinogenic, and further indicate which are genotoxic based on the critical evaluations of human epidemiological and animal studies performed by the International Agency for Research on Cancer (IARC) or by the National Cancer Institute (NCI). The Chemical Class File and Target Organ File, compiled with the aid of a computer, categorize chemicals, give test results, and describe the organs, the effects, and the routes by which the chemical travels. Also listed are the chemical structure, and substructure classification. Indexes list all 890 compounds and target organs making the information easily accessible.

The Chemical Class File separates the chemicals into as many of the 54 distinct groups of different ring and non-ring systems, functional groups, and substituents as necessary to represent all components of their structures. Instructions, bibliography, and index included. 696 pp., 1982.

The Target Organ File lists the 349 confirmed carcinogens, grouped by 79 different tumor sites by species; the 129 human carcinogens, 150 inconclusive compounds, and 26 human carcinogens are grouped separately. Instructions, bibliography, and index included. 640 pp., 9 x 12, 1982, ISBN-0-8493-3200-1, 2-volume set. Catalog no. 3200YH, 2-volume set, \$295. U.S.A./outside U.S.A., \$340.00.

d. Guide to the physical properties of solid state and structural materials. Interdisciplinary in approach and content, it covers a broad variety of types of materials, including materials of present commercial importance plus new biomedical, composite, and laser materials.

Vol. I. The Elements, elemental properties, miscellaneous tables of physical properties, and conversion tables. Miscellaneous materials properties and binary phase information. Materials standards. 760 pp., 7 x 10, 1974, ISBN-0-87819-231-X. Catalog Number 231YHG, U.S.A., \$79.00/outside U.S.A., \$90.00.

Vol. II. Metals, glasses, glass ceramics, alumina, other refractory materials, and composites. 448 pp., 7 x 10, 1975, ISBN-0-87819-232-8. Catalog Number 232YH, U.S.A., \$60.00/outside U.S.A., \$69.00.

Vol. III. Polymers, electronic materials, nuclear materials, biomedical materials, and graphic materials. Materials information. 642 pp., 7 x 10, 1975, ISBN-0-87819-233-6. Catalog Number 233YH, U.S.A., \$74.50/outside U.S.A., \$86.00.

Vol. IV. Wood and its properties. Species tables. 472 pp., 7 x 10, 1980, ISBN-0-8493-234-X. Catalog Number 234YH, U.S.A., \$70.50/outside U.S.A., \$90.00.

e. Reliable, comprehensive data on various properties of rocks, minerals and other related materials. Format is largely tabular. The information is of particular value to

those in geology, geophysics, geochemistry, petrophysics, materials science, and geotechnical engineering.

Vol. I. Chemical composition and properties of rocks, minerals and crystals, pore fluids, ores, coal, petroleum, Earth's crust, meteorites. Electrical Properties: Resistivity and dielectric constants of minerals, dry and wet rocks, sedimentary rock sequences. Earth's interior. Spectroscopic Properties: Absorption/transmission, reflectance and emission, and spectral characteristics of minerals and rocks in the visible and infrared range. 416 pp., 7 x 10, 1982, ISBN-0-8493-0226-9. Catalog Number 226YH, U.S.A., \$71.50/outside U.S.A., \$82.00.

Vol. II. Compressive and shear wave velocities for rocks, minerals, marine sediments. Earth's crust, ice; variation with fluid saturation, pressure and temperature. Properties of magnetic minerals and rocks, and their variation with different parameters. Factors, tests, and properties relating to rock appraisal, characterization, and assessment of hardness, strength, and deformation. 360 pp., 7 x 10, 1982, ISBN-0-8493-0227-7. Catalog Number 227YH, U.S.A., \$66.00/outside U.S.A., \$76.00.

Vol. III. Histograms of density ranges. Elastic moduli, thermal properties, strength and rheology for rocks and minerals, rock mechanics and friction, and stress-strain relations. Decay constants and heat production of isotope systems in geology. Seismic attenuation in rocks, minerals, and the Earth, with application to oil exploration and terrestrial studies. Index. 360 pp., 7 x 10, 1984, ISBN-0-8493-0228-5. Catalog Number 228YH, U.S.A., \$60.00/outside U.S.A., \$69.00.

f. Compact and comprehensive FT-IR peak table data base for personal computers, for use with the Aldrich Library of FT-IR Spectra. By using elegant data compression techniques, Nicolet has encoded the entire Aldrich-Nicolet FT-IR digital peak table data base onto a single diskette. The user enters peak locations and intensities for an unknown. The software searches the peak tables derived from the digital FT-IR database, and reports the Aldrich FT-IR Library page numbers for spectra that match the unknown's spectral features. Direct visual comparison with the Aldrich Library (above) confirms the identity of the unknown. For Apple II, Catalog Number Z12,774-4, \$575.00; For IBM PC, Catalog Number Z12,776-0, \$575.00. Aldrich Chemical Company, Inc., P.O. Box 355, Milwaukee, Wisconsin 53201, U.S.A.

g. Sadtler Research Laboratories announces the development of new software which enables IBM PC users to access Sadtler's IR and carbon-13 NMR Search Libraries, its Molecular Structure Data Base and its Capillary GC Retention Index Data Base.

With this software, the analytical chemists can now use an IBM PC as a stand alone work station for library searching and data analysis. The unknown experimental data is simply entered through the keyboard of the PC, a search is performed, and a report of the best matches from the library is obtained. Special function keys can then be used for viewing the reference spectrum, molecular formula and molecular structure of any compound in the library. Using this system, library searching and viewing is thus performed offline, leaving the analytical instrument free for other measurements.

The fully digital infrared reference libraries are on both floppy and hard disk for the IBM PC, and spectral search packages can be configured for specific needs and application areas. Sadtler's infrared search libraries, which currently are being expanded at an accelerated rate. These

fully digital libraries now contain approximately 90 000 spectra and will shortly be expanded to over 100 000 spectra. Included will be 9 000 Vapor Phase spectra, 65 000 standard condensed phase IR spectra.

Sadtler's Capillary Gas Chromatography Retention Index Data Base has also been formatted for use on the IBM PC. The retention index software allows searching of either isothermal (Kovats) or linear retention indices for unknown compounds against a reference data base of indices for known chemical compounds measured on fused silica capillary columns.

Pricing of these digital reference libraries are comparable to Sadtler's hard copy spectra libraries. Contact: Allan Bloom, Sadtler Research Laboratories, 3316 Spring Garden Street, Philadelphia, Pennsylvania 1904. Telephone: 215 3827800.

h. The database contains abstracts of more than 25 000 articles published since 1981. With an emphasis on advanced modern biotechnology, all aspects of business news are covered, e.g., new companies, joint ventures, mergers, new products, R & D achievements, etc. Produced by Celltech and is now available from Data-Star. The new file is expected to grow by over 10 000 references a year and it will be updated every two weeks. Usage is charged at an hourly rate and there is no subscription fee. Details are available from Data-Star, Plaza Suite, 114 Jermyn Street, London, U.K. SW1Y 6HS.

i. Chemical Structures. Derwent Publications and INPI, the French Patent Office, have signed an agreement with Télésystèmes, Paris. They are jointly financing the development of graphic-based input and retrieval software that will be able to handle the generic chemical structures (Markush formulae) disclosed in the patent literature. Details from H. Hyams, Derwent Publications, Rochdale House, 128 Theobalds Road, London, U.K. WC1X8RP.

j. GENETOX. Chemicals. Produced by the Environmental Protection Agency's Office of Toxic Substances. Comprises information on the mutagenicity of more than 3000 chemicals, tested against 389 biological systems. Details are available from CIS Incorporated, 7215 York Road, Baltimore, MD 21212, U.S.A.

k. ISHOW. Chemicals. Produced by the Environmental Protection Agency's Office of Toxic Substances. Contains melting point, boiling point, partition coefficient, acid dissociation constant, water solubility and vapor pressure data for more than 5000 chemicals. Details are available from CIS Incorporated, 7215 York Road, Baltimore, MD 21212, U.S.A.

l. Plastiserv. Subscribers to Plastiserv, an online information service for the plastic industry. Describes Wiley's publications about plastics and polymers, with citations. Details from Plastiserv Information Systems, PO Box 20933, Columbus, OH 43220, U.S.A.

m. Toxic Effects. The National Technical Information Service of the US Department of Commerce is making available a collection of data including the Registry of toxic effects of chemical substances, a Department of the Interior file on the analyses of natural gases, and others relating to medicine, science and technology. Further details are available from Microinfo, PO Box 3, Newman Lane, Alton, Hampshire, U.K. GU34 2PG.

CODATA's SECRETARIAT

(Continued from page 1)

airplane, "L'Eole", there in 1890. The laboratory of Gustave Eiffel, father of the famous tower, was in Auteuil and still exists there today.

A large fresco of Auteuil unfortunately is impossible in a CODATA Newsletter. But no article would be complete without mentioning Auteuil as the sports center of Paris, where the Roland Garros Tennis Tournament is held; where the Hippodrome of Auteuil and Parc des Princes host the horse races and the soccer matches. And finally, with a sigh of regret, a mention of Auteuil wines, which in the XIIth and XIIIth Centuries were of as high repute as are today's sauternes or Côtes-du-Rhône. The vineyards still could be found until 70 or 80 years ago. But today, alas, there is only the reputation!

Amid the elegance of marble staircases, the decorative iron work, balconies, the garden, library, and conference



Mme. Phyllis Glaeser, Executive Secretary

room, the CODATA Secretariat provides the hub of a communication network which enables the volunteers of the Scientific Committee to fulfill their endeavors on behalf of "data for science and technology." Phyllis Glaeser, as Executive Secretary, assisted by Sarah Leval-evasseur as bilingual keyboarder, have recently moved into a newly refurbished, efficient suite of offices on the third floor. The Secretariat also provides a site for many of CODATA's scientific and administrative meetings. (At all too appropriate times of the day, the heavenly aroma of the concierge's bonne cuisine--that would deter a saint at the portals of Paradise--permeates the conference level. And--when an electrically refrigerated drinking fountain is added to the word processors, telex machines, etc., in discreet cabinets, we will know that the Secretariat has arrived! "Je vie en espoir!"--Editor)

—Mme. Phyllis Glaeser

SPATIAL DATA HANDLING

(continued from page 5)

meetings will be held on the campus of the University of Washington.

Prospective authors and attendees are urged to examine the Proceedings of the First Symposium (Zurich August 1984) as a guide to the type of materials to be included in the Second Symposium.

For planning purposes, it may be noted that the Third International Symposium on Spatial Data Handling will be held in Sydney, AUSTRALIA, in August of 1988.

All communications regarding the Symposium should be directed to:

Dr. Duane F. Marble, Seattle Symposium, Department of Geography, SUNY at Buffalo, Amherst, New York, 14260 U.S.A.

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