

# Meetings

## Calorimetry

The Twenty-second Calorimetry Conference was held at the North American Aviation Science Center, Thousand Oaks, California, 20–22 June 1967. As in the past, the conference was informal in nature, thus allowing work of a preliminary or speculative character to be reported.

Charles W. Beckett (National Bureau of Standards) presented the keynote address, the Huffman Memorial Lecture, entitled "Progress in Thermodynamic and Related Research and Technology." He discussed the position of calorimetry as part of a broad national measurement and data correlation system, and related the work to areas of application in technology and commerce. Beckett cited the need for pushing our capability for accurate measurements into the region of higher temperatures and higher pressures, and also touched on the problems of obtaining adequate funding for continuing research of this type.

A group of invited and contributed papers were devoted to considerations of bond energy and related thermodynamic properties. H. A. Skinner (University of Manchester, England) described a very satisfactory correlation of the heats of formation of a number of fluorocarbons and fluorohalogenated hydrocarbons in terms of the Allen scheme of bond additivity and bond interaction. However, he indicated that with the higher halogen-substituted hydrocarbons, steric repulsion effects may limit the usefulness of the correlation. In a paper on the thermodynamic properties of some alcohols, ketones, and aldehydes, J. D. Cox (National Physical Laboratory, England) described both thermal and equilibrium measurements on these substances. He also discussed the interpretation of the heats of formation of the gaseous compounds according to certain bond-energy schemes. Cox stressed the importance of considering equilibrium and thermal measurements on an equal footing in order to obtain the most reliable data, an ap-

proach which is rather alien to most calorimetrists. A. S. Carson (University of Leeds, England) discussed the application of bond-energy treatments to the alkyl halides; he pointed out many of the experimental difficulties in obtaining accurate thermochemical data for these compounds. In each instance it was concluded that interactions between neighboring bonds must be considered in any workable bond-energy scheme. Other participants dealt with the determination of thermochemical data for inorganic molecules by high-temperature equilibrium measurements.

A comprehensive survey of factors affecting the accuracy of heat of vaporization measurements in the pressure range 200 to  $10^{-4}$  mm Hg was given by S. Sunner (University of Lund, Sweden). In particular, the conditions governing flow of vapor from the calorimeter must be known before accurate corrections can be applied, especially at the lowest pressures. This session included a number of other discussions about the experimental and interpretive aspects of both low- and high-temperature thermal measurements.

About 12 papers were devoted to low-temperature thermal, electrical, and magnetic phenomena, primarily in the liquid helium region. Included was a paper by J. Muller (University of Geneva, Switzerland) on the physical significance of low temperature specific heats, especially with regard to the electronic properties of metals. G. W. Lehman (NAA Science Center) described a theoretical treatment of the effects on lattice heat capacity caused by heavy mass impurities. Such impurities have a very profound effect on the specific heat at low temperatures. An analysis in terms of the continuum phonon vibrational states associated with the heavy mass impurities gives results in good agreement with experiments for magnesium samples containing lead as impurity.

The conference was pleased to welcome two Russian colleagues, L. V.

Gurvich and V. A. Medvedev (Institute of High Temperature, Moscow), who gave a two-part presentation on "Calorimetric and Some Other Investigations in the U.S.S.R. Connected with the Preparation of Reference Books on Thermodynamic Properties." The report surveyed the activities of various laboratories in the U.S.S.R. and gave a summary of many of the recent results obtained in the areas of calorimetry, molecular structure work, electronic spectroscopy, and high-temperature equilibrium measurements. This is a very extensive effort; the compilation of thermodynamic data, in particular, certainly merits the attention of all interested scientists.

A number of contributed papers in the areas of bomb, solution, and reaction calorimetry were presented: These reflected the ever-present need for identifying and eliminating systematic errors in the measurements, as well as the need for developing new techniques for handling relatively unstable or highly reactive materials in calorimetric investigations. A promising new development here appears to be the use of a digital quartz thermometer and associated print-out equipment for recording calorimetric temperature rise. This combination gives increased sensitivity in the  $\Delta T$  measurement, and presents the data in convenient form for analysis. An interesting technique developed at Argonne National Laboratory involved the use of a double-chamber combustion bomb for measurements on substances that react spontaneously. The technique was illustrated with measurements of the heat of fluorination of  $\text{PF}_3$  by elemental fluorine. Calorimetric studies of biochemical systems are of increasing interest in providing information about mechanisms of biochemical processes and several papers in this category were presented at the conference.

At the business meeting of the conference, C. E. Vanderzee (University of Nebraska) was elected to the position of chairman-elect and program chairman for next year's meeting. Also elected were S. R. Gunn (Lawrence Radiation Laboratory, Livermore), W. V. Johnston (North American Aviation Science Center), and E. J. Prosen (National Bureau of Standards) as new members of the Board of Directors of the conference. After some discussion, members of the conference passed a resolution in support of the establishment of an international journal of thermodynamics. The primary concern is

## PRIMITIVE PEOPLE COMPLEX SOCIETIES



### THE CURSE OF SOUW

Principles of Dariibi Clan Definition and Alliance in New Guinea by *Roy Wagner*. The social structure of a little-known mountain tribe which sees the shaming of its hero Souw as the original cause of evil. The myth resembles, in some aspects, the Genesis story of the Fall of Man. Photographs and drawings. \$11.50

### MORALS AND MERIT

A Study of Values and Social Controls in South Asian Societies by *Christoph von Fürer-Haimendorf*. Do various tribes, and indeed all of humanity share a common moral language? "... A pioneer study of a neglected aspect of South Asian social anthropology by one eminently suited to undertake it."—*The Times Literary Supplement* \$6.00

### KWAKIUTL ETHNOGRAPHY

by *Franz Boas*, edited, abridged and with an introduction by *Helen Codere*. His unpublished last work, with supplementary material, the whole of which sums up Boas's lifetime of affectionate study of the Kwakiutl Indian tribe—a study that made him one of the founders of modern anthropology. \$12.50

### THE EVOLUTION OF SOCIETY

Selections from Herbert Spencer's *Principles of Sociology*. Edited and with an introduction by *Robert L. Carneiro*. Basic writings of the great thinker on cultural evolution. Spencer was the first to organize evolutionary concepts as they applied to — and made intelligible — the broad sweep of human history. *Classics in Anthropology Series*. \$10.95

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that a new journal in this field (and such an appearance seems imminent) should be one of the highest scientific standard.

O. J. Kleppa served as general chairman of the meeting; local arrangements were handled by W. V. Johnston (NAA Science Center). There are no published proceedings of the conference, but much of the reported material will appear later in scientific journals.

The Twenty-third Calorimetry Conference will be held in August 1968 in Midland, Michigan, with the Dow Chemical Company serving as host. Inquiries about program and attendance should be directed to the program chairman: C. E. Vanderzee, Department of Chemistry, University of Nebraska, Lincoln, Nebraska 68506.

D. L. HILDENBRAND

*Douglas Advanced Research  
Laboratories, Huntington Beach,  
California 92646*

### Calendar of Events

#### National Meetings

##### January

20-25. American Academy of **Orthopaedic Surgeons**, annual mtg., Chicago, Ill. (J. K. Hart, AAOS, 29 E. Madison, Chicago 60602)

22-23. **Industrial Research**, 3rd annual, Chicago, Ill. (V. H. Disney, IIT Research Inst., 10 W. 35 St., Chicago 60616)

22-24. **Aerospace Sciences** mtg., New York, N.Y. (Meetings Manager, American Inst. of Aeronautics and Astronautics, 1290 Ave. of the Americas, New York 10019)

22-24. **Coal and Coke**, Philadelphia, Pa. (American Soc. for Testing and Materials, 1916 Race St., Philadelphia 19103)

22-24. **Radioisotopes and Radiation Effects**, New Orleans, La. (American Soc. for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103)

22-26. **Basic Electronics**, Hopatcong, N.J. (Saul Gordon Associates, Center for Professional Advancement, P.O. Box 66, Hopatcong 07843)

22-26. **Marine Sciences Instrumentation**, 4th natl. symp., Cocoa Beach, Fla. (M. Reed, Instrument Soc. of America, 530 William Penn Pl., Pittsburgh, Pa. 15219)

22-26. **Powder X-Ray Diffractometry**, Austin, Tex. (D. E. Griffith, Program Director, Taylor Hall 153, College of Engineering, University of Texas, Austin 78712)

22-27. **Air Conditioning** Principles and Practices, Austin, Tex. (D. E. Griffith, Program Director, Taylor Hall 153, College of Engineering, University of Texas, Austin 78712)

23. **Industrial Associates Research Re-**

view, Houston, Tex. (D. E. Griffith, Program Director, Taylor Hall 153, College of Engineering, University of Texas, Austin 78712)

23. **Preventive and Therapeutic Aspects of Coronary Heart Disease**, conf., New York, N.Y. (Conference Planning Committee, New York Heart Association, 10 Columbus Circle, New York 10019)

23-26. **Council on Social Work Education**, Minneapolis, Minn. (P. Stickney, Council on Social Work Education, 345 E. 46 St., New York 10017)

23-26. **Water**, Technical Committee mtg., West Palm Beach, Fla. (American Soc. for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103)

23-27. **American Mathematical Soc.**, 74th annual, San Francisco, Calif. (G. L. Walker, American Mathematical Soc., Box 6248, Providence, R.I. 02904)

24-25. **Health Physics**, 2nd midyear symp., Augusta, Ga. (C. M. Patterson, E. I. duPont, Savannah River Lab., Aiken, S.C. 29801)

25-27. **Mathematical Assoc. of America**, 51st annual, San Francisco, Calif. (H. M. Gehman, MAA, Executive Director, c/o SUNY at Buffalo, N.Y. 14214)

25-27. **Symmetry Principles** at High Energy, 4th conf., Coral Gables, Fla. (Conference on Symmetry Principles at High Energy, Center for Theoretical Studies, University of Miami, Coral Gables)

27-1. **American Group Psychotherapy Assoc.**, conf., Chicago, Ill. (M. Schiff, AGPA, Room 702, 1790 Broadway, New York 10019)

28. **Fourth Mössbauer Symp.**, Chicago, Ill. (P. A. McNulty, New England Nuclear Corp., 575 Albany St., Boston, Mass. 02118)

28-2. **Institute of Electrical and Electronics Engineers**, winter power mtg., New York, N.Y. (J. W. Bean, American Electric Power, 2 Broadway, New York 10008)

28-2. **Testing and Materials**, winter mtg., Atlantic City, N.J. (T. A. Marshall, Jr., American Soc. for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103)

29-31. **National Assoc. of Private Psychiatric Hospitals**, 35th annual mtg., Miami Beach, Fla. (The Association, 353 Broad Ave., Leonia, N.J.)

29-31. **Society of Thoracic Surgeons**, annual mtg., New Orleans, La. (F. X. Byron, Executive Secretary, Society for Thoracic Surgeons, City of Hope Medical Center, 1500 E. Duarte Rd., Duarte, Calif. 91010)

29-1. **American Assoc. of Physics Teachers**, annual mtg., Chicago, Ill. (S. S. Ballard, Univ. of Florida, Gainesville 32603)

29-1. **American Meteorological Soc.**, 48th annual, San Francisco, Calif. (K. C. Spengler, AMS, 45 Beacon St., Boston, Mass. 02108)

29-1. **American Physical Soc.**, annual mtg., Chicago, Ill. (R. G. Sachs, Box 344, Argonne, Ill. 60440)

29-3. **Bio-Physical Techniques**, Hopatcong, N.J. (Center for Professional Advancement, P.O. Box 66, Hopatcong 07843)