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G. Brauer (65 references); “Phase equilibria studies in mixed systems of rare earth and other oxides,” by R. S. Roth (52 references); “Crystal chemistry of rare earth sesquioxides, aluminates, and silicates,” by Israel Warshaw and Rustum Roy (34 references); “Structural and physical properties of alloys and intermetallic compounds,” by Karl A. Gschneider, Jr. (139 references); “Composés Minéraux et Organiques,” by F. Gaume-Mahn (255 references); “Thermodynamic and magnetic properties of the rare earth chalcogenides,” by Edgar F. Westrum, Jr. (264 references); “La Chimie Analytique des Terres Rares,” by Jean Loriers (253 references); “Soviet research on analytical chemistry of the rare earths,” by D. I. Ryabchikov and V. A. Ryabukhin (136 references); and “Uses and applications,” by Richard M. Mandle and H. H. Mandle (864 references).

The reviews give the reader a condensed survey of the literature in the areas mentioned and for the time covered (1955 to 1961). Many of the surveys overlap, and it is interesting to note that, among the contributors who treat the same subject, there is a wide divergence in the literature cited and emphasized. It is unfortunate, however, that publication of the book has been so long delayed; in the last 3 years new work equal to the amount covered in this volume has appeared in the literature.

FRANK H. SPEDDING
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- THE SCIENCE OF IONIZING RADIATION: Modes of Application compiled and edited by Lewis E. Etter, Univ. of Pittsburgh, Pittsburgh, Pa. (With 33 Contributors) Oct. '64, about 1,088 pp., 224 figs., 29 tables, about $26.75

- CANINE BEHAVIOR: A History of Domestication; Behavioral Development and Adult Behavior Patterns; Neurophysiology; Psychobiology; Training, Inheritance, Early Experience and Psycho-Social Relationships; Experimental Neuroses and Spontaneous Behavior Abnormalities; Congenital Anomalies and Differential Diagnosis of Neurologic Disease by M. W. Fox, Galesburg State Research Hosp., Galesburg, Ill. Oct. '64, about 176 pp., about 23 figs., about $6.50

- STATISTICALLY SPEAKING by Warren K. Garlington, Long Beach State Coll., Long Beach, Calif., and Helen E. Shimota, Univ. of Southern Calif., Los Angeles, Calif. July '64, 120 pp., 48 il. $5.50

- THE TRAIL OF THE INVISIBLE LIGHT by E. R. N. Grigg, Cook County Hosp., Chicago, Ill. Oct. '64, about 600 pp., 1,404 figs. (Amer. Lec. Roentgen Diagnosis edited by Lewis E. Etter), about $35.00

- METHODOLOGY OF THE BEHAVIORAL SCIENCES: Problems and Controversies by Rollo Handy, State Univ. of New York at Buffalo, Buffalo, N. Y. Oct. '64, about 212 pp. (Amer. Lec. Philosophy edited by Marvin Farber), about $8.00

- CHEMICAL CARCINOGENESIS AND CANCERS by W. C. Hueper and W. D. Conway, both of National Cancer Institute, Bethesda, Md. Nov. '64, about 592 pp., 34 il. (Amer. Lec. Living Chemistry), about $13.00

- SURGERY OF THE DIGESTIVE SYSTEM IN THE RAT by René Lambert, Hopital Ed. Herriot, Lyons France. Translated by Brian Julien. Nov. '64, about 604 pp., 154 il., about $14.00


- Proceedings of an International Symposium on LIPID TRANSPORT edited by H. C. Meng, John G. Coniglio, V. S. LeQuire, George V. Mann and Joseph M. Merrill, all of Vanderbilt Univ., Nashville, Tenn. (With 16 Contributors) June '64, 280 pp., 55 il., $10.50


- STERoid ANALYSIS BY GAS LIQUID CHROMATOGRAPHY by A. Anne Patti and Arthur A. Stein, both of Albany Medical Coll., Albany, N. Y. Sept. '64, about 124 pp., 17 il. about $6.25

- BROKEN PEACE PIPES: A Four-Hundred-Year History of The American Indian by Irvin M. Peithmann, Southern Illinois Univ., Carbondale, Ill. Sept. '64, about 304 pp., about $6.00

- INDIANS OF SOUTHERN ILLINOIS by Irvin M. Peithmann. Nov. '64, about 325 pp., about 40 il., about $6.00

- RED MEN OF FIRE by Irvin M. Peithmann. Aug. '64, 184 pp., 52 il., $6.50

- THE RABBIT IN EYE RESEARCH compiled and edited by Jack H. Prince, Ohio State Univ., Columbus, Ohio. (With 10 Contributors) Oct. '64, about 680 pp., 186 figs., 50 tables, about $27.00


- SELECTED HISTOCHEMICAL AND HISTOPATHOLOGICAL METHODS by Samuel Wesley Thompson. With Two Chapters by Ronald D. Hunt. Both of Fitzsimons General Hosp., Denver, Colo. Oct. '64, about 1,450 pp. (7 × 10), about 401 il., about $50.00

- BEHAVIOR, AGING, AND THE NERVOUS SYSTEM: Biological Determinants of Speed, of Behavior and Its Changes with Age edited by A. T. Welford, Univ. of Cambridge, Cambridge, England, and James E. Birren, National Institute of Mental Health, Bethesda, Md. (With 42 Contributors), Nov. '64, about 740 pp., 240 il. (Amer. Lec. Geriatrics & Gerontology edited by James E. Birren), about $23.00

- THE REDOX POTENTIAL OF THE BLOOD IN VIVO AND IN VITRO: Its Measurements and Significance by Ernst Ziegler, J. R. Geigy, Ltd., Basel, Switzerland. Nov. '64, about 248 pp., 66 il. (Amer. Lec. Living Chemistry), about $8.50

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NEWS AND COMMENT

(Continued from page 1025)

of the nature and consequences of what is proposed. Assumed consent or consent obtained by undue influence is valueless and, in this latter respect, particular care is necessary when the volunteer stands in special relationship to the investigator as in the case of a patient to his doctor, or a student to his teacher.

The need for obtaining evidence of consent in this type of investigation has been generally recognized, but there are some misunderstandings as to what constitutes such evidence. In general, the investigator should obtain the consent himself in the presence of another person. Written consent unaccompanied by other evidence that an explanation has been given, understood and accepted is of little value.

The situation in respect of minors and mentally subnormal or mentally disordered persons is of particular difficulty. . . .

Investigations that are of no direct benefit to the individual require, therefore, that his true consent to them be explicitly obtained. After adequate explanation, the consent of an adult of sound mind and understanding can be relied upon to be true consent. In the case of children and young persons the question whether purported consent was true consent would in each case depend upon facts such as the age, intelligence, situation and character of the subject and the nature of the investigation. When the subject is below the age of 12 years, information requiring the performance of any procedure involving his body would need to be obtained incidentally to and without altering the nature of a procedure intended for his individual benefit.

Professional discipline. All who have been concerned with medical research are aware of the impossibility of formulating any detailed code of rules which will ensure that irreproachability of practice which alone will suffice where investigations on human beings are concerned. The law lays down a minimum code in matters of professional negligence and the doctrine of assault. But this is not enough. Owing to the special relationship of trust that exists between a patient and his doctor, most patients will consent to any proposal that is made. Further, the considerations involved in a novel procedure are nearly always so technical as to prevent their being adequately understood by one who is not himself an expert. It must, therefore, be frankly recognized that, for practical purposes, an inescapable moral responsibility rests with the doctor concerned for determining what investigations are, or are not, proposed to a particular patient or volunteer. Nevertheless, moral codes are formulated by man and if, in the ever-changing circumstances of medical advance, their relevance is to be maintained, it is to the profession itself that we must look, and in particular to the heads of departments, the specialized Societies and the editors of medical and scientific journals.

In the opinion of the Council, the head of a department where investigations on human subjects take place has an inescapable responsibility for ensuring that practice by those under his direction is irreproachable.

In the same way the Council feel that, as a matter of policy, bodies like themselves that support medical research should do everything in their power to ensure that the practice of all workers whom they support shall be unexceptionable and known to be so.

So specialized has medical knowledge now become that the profession in general can rarely deal adequately with individual problems. In regard to any particular type of investigation, only a small group of experienced men who have specialized in this branch of knowledge are likely to be competent to pass an opinion on the justification for undertaking any particular procedure. But in every branch of medicine specialized scientific societies exist. It is upon these that the profession in general must mainly rely for the creation and maintenance of that body of precedents which shall guide individual investigators in case of doubt, and for the critical discussion of the communications presented to them on which the formation of the necessary climate of opinion depends.

Finally, it is the Council’s opinion that any account of investigations on human subjects should make clear that the appropriate requirements have been fulfilled and, further, that no paper should be accepted for publication if there are any doubts that such is the case.

The progress of medical knowledge has depended, and will continue to depend, in no small measure upon the confidence which the public has in those who carry out investigations on human subjects, be these healthy or sick. Only in so far as it is known that
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such investigations are submitted to the highest ethical scrutiny and self-discipline will this confidence be maintained. Mistaken, or misunderstood, investigations could do incalculable harm to medical progress. It is our collective duty as a profession to see that this does not happen and so to continue to deserve the confidence that we now enjoy.

Announcements

A graduate program leading to the master’s and doctor’s degrees in materials science has been established at the University of Virginia. The curriculum, open to persons holding a bachelor’s degree in engineering or science, will center on the quantum mechanics of solids, crystal structure of materials, and the theory of lattice defects. Experimental research will concentrate on work with electron microscopes, x-ray diffractometers, and high and low energy electron diffraction apparatus. A training and research program in medical and dental materials is also being established, supported by an NIH grant. Information on the new programs is available from H. G. F. Wilsdorf, Department of Materials Science, University of Virginia, Charlottesville.

The National Bureau of Standards' Institute for Basic Standards is starting a four-phase program to establish standards for radar equipment. The work is being done at the Boulder, Colorado, laboratories, for the Defense Department’s Advanced Research Projects Agency. The program will concentrate on exploratory research and on technical requirements in measurements of radar power, noise, and antenna patterns. Additional information is available from J. M. Richardson, chief of the Radio Standards Laboratory, NBS, Boulder.

Meeting Notes

Papers on theoretical and experimental physics are invited for presentation at the American Physical Society meeting 21–23 December in Berkeley, California. Persons giving papers may be members of the society or non-members whose papers are sponsored by members. Deadline for receipt of abstracts: 16 October. (W. Whaling, California Institute of Technology, 1201 E. California St., Pasadena)

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SCIENCE, VOL. 143
The following meetings are scheduled during November as part of the U.S.-Japan cooperative science program, sponsored by the National Science Foundation and the Japan Society for the Promotion of Science. Attendance is by invitation only; additional information on the program is available from N. P. Neureiter, Office of International Science Activities, NSF, Washington 25.

4-7. Seminar on bioclimatology; Sapporo, Japan.

4-7. Seminar on mechanisms of the dose rate effect at the genetic and cellular level; Oiso, Japan.

6-7. Conference on group structure and social interactions of primates; Covington, Louisiana.


16-27. Conference on narcotics and drug abuse; Tokyo and other cities.

The call for papers has been issued for the 1965 international convention of the Institute of Electrical and Electronics Engineers. The meeting will take place in New York 22-26 March. The divisions of science and electronics, and of industry and applications are planning sessions, along with the various technical groups. Abstracts should be 50 to 100 words. Deadline: 16 October. (E. L. Harder, IEEE, Box A, Lenox Hill Station, New York 10021)

The Human Factors Society will hold its annual meeting 19-21 October in Washington. The meeting will stress the applications of human factors technology in such areas as architectural design, industrial application, personnel subsystems, and the space program. (R. B. Sleight, Applied Psychology Corporation, 4113 Lee Highway, Arlington 7, Va.)

The Institute of Electrical and Electronics Engineers and the University of Pennsylvania will sponsor the 1965 international solid-state circuits conference, 17-19 February in Philadelphia. Papers are invited for the meeting. A 35-word abstract and a 300- to 500-word summary are required; major illustrations may be included. Deadline: 26 October. (B. J. Lechner, RCA Laboratories, Princeton, N.J. 08540)

A symposium on "personnel dosimetry for accidental high-level exposure to external and internal radiation" is scheduled 8-12 March in Vienna. The sponsors are the World Health Organization and the International Atomic Energy Agency. Papers are invited for presentation regarding measurement techniques, assessment of dose from the results of measurements, current practices and experience gained from previous accidents. Abstracts of 250 to 350 words are required. Deadline: 15 October. (J. H. Kane, International Conferences Branch, Division of Special Projects, U.S. Atomic Energy Commission, Washington, D.C. 20545)

Courses

A course entitled "an engineering approach to the control of contamination" will be offered 19-25 October in Rochester, New York. The course will deal with problems encountered by administrative and supervisory personnel, and by technically oriented persons. The sponsors are Rochester Institute of Technology and the American Association for Contamination Control. Tuition is $250. (H. M. Kentner, Rochester Institute of Technology, 65 Plymouth Avenue South, Rochester 14408)

Georgia Institute of Technology plans a course on automation, computers, and instrumentation, 2-6 November. It is designed for senior technical personnel in manufacturing, commercial, and government organizations. The course fee is $150, which will cover tuition, supplies, and textbooks. Deadline for receipt of applications: 21 October. (Director, Department of Continuing Education, Georgia Institute of Technology, Atlanta, 30332)

Scientists in the News

Hugh L. Dryden, NASA deputy administrator, has received the 1964 Louis W. Hill award from the American Institute of Aeronautics and Astronautics. He was cited for his contributions in fluid mechanics research, in advancing civilian space activities, and in the X-15 research airplane program. The award carries a $5000 honorarium.

Howard J. Teas, program director for metabolic biology at the National Science Foundation, has become chairman of the division of biological sciences at the University of Georgia, Athens.
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The University of North Carolina has named Isaac M. Taylor dean of the medical school. He is a professor of medicine at the school.

Hugo Dahlke, formerly with North American Aviation, in Columbus, Ohio, has joined the Ling-Temco-Vought research center in Anaheim, California, in charge of the acoustic instrumentation research program.

Franz Reichsman, formerly associate professor of medicine and assistant professor of psychiatry at the University of Rochester's medical school, has become professor of psychiatry at the State University of New York Downstate Medical Center, in Brooklyn.

William C. Leslie, assistant director of the E. C. Bain Laboratory for Fundamental Research, U.S. Steel Corporation, has been named Battelle visiting professor of metallurgy at Ohio State University for the coming academic year.

Cyril Hazard, formerly lecturer in astronomy at the school of physics, University of Sydney, Australia, has joined Cornell University's Center for Radiophysics and Space Research as senior research associate.

The University of Wisconsin has appointed Gerald Nadler to establish a graduate program in industrial engineering. He had been on leave as professor of industrial engineering and chairman of the human and organization factors area at the Washington University school of engineering.

Recent Deaths

Harold F. Balmer, 65; astrophysicist with the Air Force's Strategic Air Command; 25 July.

George S. Bryan, retired chief hydrographer for the Navy; 12 July.

Ernest Martin Hopkins, 86; retired president of Dartmouth College; 13 August.

Robert W. Gelinas, 41; research physicist at the Rand Corporation, Santa Monica, Calif.; 25 July.

Mitchell Gray, 46; visiting professor at the University of Illinois college of veterinary medicine; 27 July.

Louis R. Kaufman, 83; former director of surgery at New York Medical College; 19 August.