

THE LUMINESCENCE OF BIOLOGICAL SYSTEMS

edited by Frank H. Johnson

6" x 9", clothbound, 466 pp., genera and species, subject and author indexes, bibliographies

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"The recent rapid development of bio-luminescence is well illustrated by the book and it should hasten the transition of the field from a highly specialized area to one having many points of contact with other parts of both physiology and chemistry." American Scientist, Autumn 1956.

The volume includes papers and discussion on fundamental aspects of "cold light" given at a recent international conference. Leading investigators provide a critical evaluation of current knowledge while exploring approaches to unsolved problems. The free interchange of ideas in the discussions intensifies the stimulating nature of the book.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE 1515 Massachusetts Ave., NW, Washington 5, D.C. Engineers, spring, Birmingham, Ala. (C. E. Davies, ASME, 29 W. 39 St., New York 18.)

8-12. Food Bacteriology, internatl. symp., Cambridge, England. (Dr. Mossel, Central Inst. for Nutrition Research T.N.O., Catharijnesingel 61, Utrecht, Netherlands.)

8-12. Surface Activity, 2nd world cong., London, England. (Congress Secy., 14 Belgrave Sq., London, S.W. 1.)

9-10. Industrial Electronics Education Conf., annual, Chicago, Ill. (E. A. Roberts, Armour Research Foundation, Illinois Inst. of Technology, Chicago 16.)

10-12. Nuclear Instrumentation Conf., natl., Atlanta, Ga. (H. Kindler, Instrument Soc. of America, 313 Sixth Ave., Pittsburgh, Pa.)

10-13. Conference on Embryology and Experimental Morphology, Cambridge, England. (D. R. Newth, Dept. of Zoology, University College London, Gower St., London W.C. 1.)

11-13. American Assoc. of Pathologists and Bacteriologists, annual, Washington D.C. (E. A. Gall, Cincinnati General Hospital, Cincinnati 29, Ohio.)

11-13. Southwestern Inst. of Radio Engineers Conf. and Electronics Show, 9th annual, with 2nd National Simulation Conf., Houston, Tex. (F. C. Smith, Jr., Box 13058, Houston 19.)

12-13. Colorado-Wyoming Acad. of Science, annual, Fort Collins, Colo. (O. W. Olsen, Colorado A.&M. College, Fort Collins.)

12-13. Eastern Psychological Assoc., annual, New York, N.Y. (G. G. Lane, Dept. of Psychology, Univ. of Delaware, Newark.)

12-13. New Orleans Acad. of Sciences, New Orleans, La. (A. Welden, Dept. of Biology, Newcomb College, New Orleans, La.)

12-14. American Assoc. for Cancer Research, Chicago, Ill. (H. J. Creech, Inst. for Cancer Research, Fox Chase, Philadelphia 11, Pa.)

12-14. American Assoc. of Physical Anthropologists, annual, Ann Arbor, Mich. (J. H. Spuhler, Dept. of Human Genetics, Univ. of Michigan Medical School, Ann Arbor.)

12-14. American Soc. of Human Genetics, annual, Ann Arbor, Mich. (E. J. Gardner, Dept. of Zoology, Utah State College, Logan.)

12-14. National Speleological Soc., Natural Bridge, Va. (Mrs. M. McKenzie, 1407 Hickory Ct., Broyhill Park, Falls Church, Va.)

13. Society for the Scientific Study of Religion, spring, New York, N.Y. (W. C. Clark, Hartford School of Religious Education, Hartford 5, Conn.)

13. South Carolina Academy of Science, annual, Columbia (Miss M. Hess, Box 114, Winthrop College, Rock Hill, S.C.)

14-16. Telemetering Symposium, natl., Philadelphia, Pa. (A. S. Westneat, Jr., Applied Science Corp., Box 44, Princeton, N.J.)

14-20. American Physiological Soc., Chicago, Ill. (M. O. Lee, APS, 9650 Wisconsin Ave., NW, Washington 14.)

(See issue of 15 February for comprehensive list)

EQUIPMENT NEWS

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to Science, Room 604, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).

■ TEMPERATURE-CONTROLLED AIR CHAM-BER is designed to operate to 1000°F. The interior cabinet is made of ½-in., heliarcwelded stainless steel. Chamber size is 4 by 4 by 3 ft. Uniform temperature is achieved by means of a plenum air chamber and mechanical circulation. Numerous fittings provide for remote electric and mechanical connections. (Labline, Inc., Dept. S158)

■ PERMANENT MAGNET MATERIAL, alnico 5 Cb, said to have the highest energy product of any alnico, is described in a 4-page bulletin. Physical properties, dimensional limitations, and a typical demagnetization and energy-product curve are described. Comparative properties of other permanent-magnet materials are included. (Thomas and Skinner, Inc., Dept. S160)

RADIOACTIVE CHROMATOGRAPH SCANNER is designed to provide automatic graphic presentation of the distribution of activity along a paper chromatogram that is tagged with low-energy beta-emitting isotopes. It employs a small, low-background flow counter that can be operated without a window. Chromatograms up to 3 in. wide and 5 ft long can be accommodated. The scanning head is removable, and windows, when used, are easily replaceable. Rectilinear recording at 10 different scanning speeds is provided. Scanning is automatically interrupted when the end of the chromatogram is reached, and a signal alerts the operator. (Forro Scientific Co., Dept. S163)

PHOTO PRINTER utilizes electronic control in "dodging" negatives during printing. A brilliant spot of light projected from a flying-spot-scanner cathode-ray tube produces the exposure. The spot scans the negative and the printing material. Variations of density in the negatives are sensed and evaluated in electronic circuits that compare the light value provided with the optimum for the printing material. This information is fed back to control the intensity of the printing beam, thus automatically correcting the exposure of each small sample area of the negative. Application to improving interpretability of x-ray photographs, for example, is apparent. (Norden-Ketay Corp., Dept. S164)

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• ACCURACY AND SENSITIVITY TERMINOL-OGY AS APPLIED TO INDUSTRIAL INSTRU-MENTS is the title of SAMA Tentative Standard RC3-12-1955. Such standards remain tentative for 2 years before they become SAMA industry standards. (Scientific Apparatus Makers Association, Dept. S157)

• COORDINATE PLOTTER plots points along orthogonal coordinates within 0.001 in. Working area is a $471/_2$ - by $471/_2$ -in. table. Points are marked by a pricker that is combined with a 7-power microscope. (Aero Service Corp., Dept. S169) ■ STOPCOCK GREASE made with a silicone base is suitable for use at temperatures up to 360°C and at pressures down to 0.5 mm-Hg. (Glass Engineering Laboratories, Dept. S155)

■ STRIP-CHART RECORDER records within a limit of error of 1 percent and provides full-scale balancing time of 1 sec. A potentiometer model has a span adjustable from 9 to 100 mv. Source resistance may be as high as 100 kohm. Speeds from ½ in./hr to 8 in./min are available. Chart width is 5 in. (Varian Associates, Dept. S176)



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LABORATORY APPARATUS INSTRUMENTS - CHEMICALS - GLASSWARE

• TEMPERATURE TEST CHAMBER for ambient testing of products from -65° F to 600° F has 600 in.³ of working space. Temperature fluctuations are limited to 4° F. Dry Ice is used for cooling, and two 750-watt finned-strip heaters are used for heating. The test trays are interchangeable, and they have $\frac{3}{6}$ -in. openings for electric or mechanical connections. (Statham Development Corp., Dept. S156)

• ACTIVITY CAGE is an instrument for measuring the locomotor activity of rats. The cage, a 6-in. cube, will accommodate rats up to 400 g in weight. The cage suspension is a resilient cantilever beam that permits a slight sidewise motion of the cage in response to animal activity. The motion is integrated, and the integrated accelerations are recorded on a circular chart recorder. (Williamson Development Co., Inc., Dept. S165)

■ AURORAL PATROL SPECTROGRAPH designed especially for the International Geophysical Year produces a horizon-tohorizon photographic record of the spectra of auroras along a meridional line. The camera can be adjusted to photograph spectra from the visible to the near infrared. Exposure is determined by a photometer. Exposure of a standard tungsten lamp provides an index to film characteristics. The instrument is designed to operate in extremes of temperature from -40° F to $+125^{\circ}$ F. (Perkin-Elmer Corp., Dept. S166)

• SCINTILLATION PROBE has a 1- by 1-in. thallium-activated sodium iodide crystal and a background of less than 200 count/ min without collimator or sample counting shield. (Atomlab, Inc., Dept. S167)

■ LOW-BACKGROUND COUNTER for measurement of carbon-14 of very low specific activity reduces background to less than 1 count/min. Ultimate sensitivity is 0.05 count/min. Two separate counters, operating under an anticoincidence umbrella of 16 TGC-16 Geiger tubes, are used. The whole is shielded against terrestrial gamma radiation by mild steel bricks. Window thickness is less than 1 mg/cm². Long-term stability results from the plateau slope of less than 1 percent per 100 v. (Tracerlab, Inc., Dept. S161)

• $p_{\rm H}$ METER can be adapted for potentiometer recorder output, automatic temperature compensation, and Karl Fischer titrations. Range of the line-operated instrument is 0 to 14 pH units and 0-to-1400 or 700-to-0-to-700 mv. Zero can be set to any point on the 0-to-1400 mv scale. Accuracy is given as 0.1 pH unit. A glass electrode and a reference of electrode are furnished. (Beckman Instruments, Inc., Dept. S173)

JOSHUA STERN National Bureau of Standards



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posed of two ten-turn resistors in series. The resistances are in the ratio of 100 to 1, providing coarse and fine adjustment. Wire wound resistors of low temperature coefficient insure stability. A ten-turn potentiometer and dry cell battery comprise the power supply and provide a means of adjusting applied voltage from 0 to maxi-mum of 1.5 volts which in turn provides sensitivity adjustment.

Recommended recorder range for precise measurement, 0 to 2.5 millivolts; recommended galvanometer sensitivity, 0.0003 microamperes per millimeter. Com-plete with S-82075 Thermistor Assembly, S-82076 Connecting Cable and cable for attachment to standard recorders or galvanometers.....\$170.00

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