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By Elizabeth W. Reed, Ph.D., and Sheldon C. Reed, Ph.D. Both at Dight Institute for Human Genetics, University of Minnesota, Minneapolis. About 800 pages, 7½” x 10½”, with about 290 figures. About $18.00.

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Sc 1-8-65
Dyed chicken finds rabbit in rat

Read Physical Techniques in Biological Research (New York, Academic Press, 1956) III, p. 136. Learn of a piggyback operation where fluorescent chicken antiseraum to rabbit globulin was made to seek out rabbit antiserum specifically localized in rat tissue to permit quantitative analysis by microdensitometry of the fluorescence photomicrographs. This is a virtuoso example of the fluorescent antibody tracer method.

Note remarks to the effect that along with the successes of this technique, there have also been disappointments due to organic synthesis difficulties, among others. Note statement that Chemical and Engineering News carries advertisements of companies that undertake organic synthesis on order and could be approached to make fluorescein isocyanate as the fluorescent dye. This could mean us.

Not that Distillation Products Industries (Division of Eastman Kodak Company, Rochester, N. Y. 14603) wants to stanch the gratifying flow of inquiries for custom synthesis in quantity. Nevertheless it feels obligated to point out that S-Dimethylamino-1-naphthalene-sulfonyl Chloride, which it can now furnish off the shelf as EASTMAN P9090, is favorably reported on as a fluorescent dye for the fluorescent antibody technique in Proc. Soc. Exptl. Biol. & Med., 120 (1958). Always be sure you are up to date on what’s available in EASTMAN Organic Chemicals. Latest catalog is No. 43. Watch above-named C. & E. News for additions.

Color saves shoe leather

TIROS or NIMBUS transmits a picture of the Florida peninsula and lo, Florida turns out to have exactly the same shape that the Spanish navigators of the 16th century said it had. That men could map as well as they did before they learned to fly grows in wonder. Mapping without aerial photography now seems like building the Pyramids by muscle.

Despite the reduction in making-footwork from olden times, some observations still have to be made on the ground. With the Pharaohs’ knack for low unit labor costs now a lost art, field-completion runs big on a mapping budget.

The higher information content of color photography should permit a thinner network of ground-control points.

Shallow relief

Another technology which a civilized party can consider worthy of his mild interest is printing. Here, with a new entity designated the KODAK Relief Plate, we have further complicated the complex interconnections among cost, speed, quality, and utility of printing.

We do not recommend our new product either for tomorrow morning’s New York Times or for a $250-per-copy edition of Rembrandt reproductions. Handbills announcing a postponement of the volunteer firemen’s ball can deliver their message cheaper and just as effectively without it. For a journal of plant pathology which needs photomicrographs, gross photographs, and drawings to illustrate nearly every paper, “shallow relief” could mean the difference between life and death as a feasible publishing operation.

Huge rotary presses printed these words from cylindrical shells of great thickness compared to the depth of the areas where ink-covered metal was not to touch paper, as inside this “o.” A rotary press is obviously more efficient than a flat-bed press, such as Gutenberg’s. Even publications in far less demand than the one you are now reading need rotary presses for economy, but not huge ones. The modest-size rotaries need to print from thin, easily made plates bent to the requisite radius. To retain the strength to keep the outer surface reasonably cylindrical instead of collapsing to an irregularly polygonal contour, and to minimize the need for certain mysterious and time-consuming adjustments called “make-ready” that the printer’s customers fail to understand but appreciate as the difference between pleasing appearance and mere legibility, the no-ink portions must remain shallow.

One type of such low relief plate uses as its printing surface a polymer which an ingenious chemical reaction sensitizes to light for a few minutes before exposure under the photographic negative that determines where the plastic will remain and where not. It is further demanded that when this miraculous polymer whirls on the press it retain its bond to its sheet metal substrate and never crumble off a comma or a few hundred minimum-size halftone dots.

For our own offering in low relief we have been more conservative. By not asking so much of one substance, we ease the problems of bonding, fragility, conformity to the cylinder, exposure convenience, and many other factors that might bore you but not your printer. If your printer happens to print by offset instead of the venerable letterpress principle, his counterpart to the “make-ready” bit is striking a water: ink balance. A rotary press may have to reach full speed before a trial ratio can be judged. On a short run, involving large solidly inked areas, particularly with certain inks, for a fussy customer who has been taught strong feelings about printing esthetics, 20% of the paper consumed may leave the plant via the bale. It has to be paid for somehow. If the job runs on KODAK Relief Plates, no ratio judgement is required. The water is simply turned off.

In the unlikely event that your printer doesn’t know all about this, tell him to get in touch with Eastman Kodak Company, Graphic Arts Sales Division, Rochester, N. Y. 14650.
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HIGH-SPEED SWITCH
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"Ferreed" switches are key elements in the talking paths for telephone conversations in the Bell System's new electronic central office. In setting up connections through the office, the appropriate ferreeds are closed under the direction of the system's central control unit.

As indicated in the drawing (top right), ferreed switches include glass-enclosed contacts operated by external magnets. Contacts close when central control causes short current pulses to energize the external magnets. A contact remains closed, without expenditure of additional power, until another pulse opens it.

The name for the ferreed switch was coined from "ferrite," the material used in the external magnet when this device was first described by Bell Telephone Laboratories in 1960, and "reed," referring to the magnetic members inside the glass enclosure.

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#75. Mechanisms of Hard Tissue Destruction.
1963. 776 pages. 430 illustrations.
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The Challenge of the Arid Lands in the U.S.
1963. 604 pages. 98 illustrations.
Edited by: Carl Hodge and Peter C. Duisberg.
"Best collection of background material... well balanced and highly readable... probably the broadest and most nearly complete treatment of arid lands yet published." Journal of Forestry, May 1964.
Price: $12.00. AAAS Member's Cash Price: $10.00.

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1963. 364 pages. 8 illustrations.
Edited by: Wynne Thorne.
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#72. Spermatozoan Motility.
1962. 322 pages. 113 illustrations.
Edited by: David W. Bishop.
"This book is an excellent assemblage of recent findings and reports of new data relative to the perplexing problem of sperm mobility and includes the opinions and ideas of cytologists, biophysicists, biochemists and physiologists." Journal of Animal Sciences, March 1963.
"Of great value to the researcher who is interested in the problems of flagellar motion." The American Journal of the Medical Sciences, March 1963.
Price: $7.50. AAAS Member's Cash Price: $6.50.

#71. Great Lakes Basin.
1962. 320 pages. 92 illustrations.
Edited by: Howard J. Pincus.
"... Difficulty... in attempting to do justice to all the topics covered in a book as rich as this one in content, interpretation, and discussion... Well designed and pleasing in appearance... Highly recommended to scientist and layman alike." Transactions, American Geophysical Union, December 1963.
Price: $7.50. AAAS Member's Cash Price: $6.50.

#70. Fundamentals of Keratinization.
Edited by: E. O. Butcher and R. F. Sognnaes.
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#68. Sciences in Communist China.
1961. 884 pages. 23 illustrations.
Edited by: Sidney H. Gould.
"... strongly recommended to all who are in search of facts and source material on the sciences in China."—Science, 22 September 1961
Price: $14.00. AAAS Member's Cash Price: $12.00.

#67. Oceanography.
Edited by: Mary Sears.
"I know of no other volume that so well defines oceanography, its purpose, opportunities and requirements."—Science, 9 June 1961
Price: $14.75. AAAS Member's Cash Price: $12.50.

#66. Germ Plasm Resources.
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"This book will be of interest to nonplant and animal breeders, for the rather general treatment of various topics... allows for rapid perusal."—Bulletin of the Entomological Society of America, September 1961
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#65. Aging... Some Social and Biological Aspects.
1960. 436 pages. 65 illustrations.
Edited by: Nathan W. Shock.
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WRITE FOR WACO TITRATOR BULLETIN

WACO TITRATOR BULLETIN describes this low cost accurate titrator and the new Reservoir, the Drain Flash and magnetic stirrer shown above.

dresses itself to a challenging and fascinating problem. The problem is frequently a timely one in that techniques have become available which offer a new leverage with which to pry answers from nature. These factors apply to the "fashionableness" of elementary-particle physics today. This field has very little trouble in attracting bright, imaginative, and creative people. The limitation at present lies not in the technology and not in the availability of interested scientists, but only in the availability of support for an expanding program. The planning of a reasonable level at which such support should be provided requires much careful thought and review. In indulging in this planning scientists must be careful not to cut off capriciously and completely any other promising field of study.

McVittie appears to resent the participation of scientists in the mass communication media of radio, TV, and the press. In view of the fact that large amounts of public funds are being spent for research programs in cosmology as well as in elementary-particle physics, it is not unreasonable or even undesirable that scientists should be eager to have their results quoted in the New York Times or to lecture on the BBC. If the public is not involved at some level in these programs, why should public funds be used for them? Scientists should be much more aware than they have been in the past of their responsibilities to the public. Scientific research in all fields is becoming more and more costly, and the motivation for carrying on this research must be very carefully examined and interpreted to the public if a stable program is to be achieved.

In one paragraph McVittie expounds the dangers to branches of science "where quick results are expected." In another he asks whether the total flux of energy from an extended source of radiation can be determined "satisfactorily and relatively quickly from the earth's surface" or whether it may "require an orbiting astronomical observatory." Why should anyone be motivated to get this information relatively quickly? I can answer for McVittie that all of us would like to see the questions that perplex us answered within our lifetimes. I can also answer that creative people will be attracted to a field of research only so long as there is some hope for their creativity to bear fruit within a time that will provide for them a satisfying professional career. As the scale of apparatus that is required in various fields of research becomes ever larger, the time scale for accomplishing anything grows commensurately. It would be my guess that for the health of our science and probably for the health of our entire culture it is important that cosmologists should get their orbiting astronomical observatory, if it is feasible to launch and profitable to use, and that elementary-particle physicists should get their accelerators if these are feasible to construct and useful to have.

No one could take exception to McVittie's plea for careful planning. The costs for all these programs are large. Competition is not the end toward which we strive, but the human being is a competitive animal and as long as there are interesting things to do, more than one man of talent will be engaged in the doing. All would like the satisfaction of success. In a large sense, each scientist gets satisfaction from the success of another, but we all get special satisfaction, as well as recognition, from our own successes. We cannot abolish competition, but we should certainly not support hasty and slipshod work. Elementary-particle physicists are investing enormous time and effort in trying to establish a responsibly scaled program in their field. They need help from other scientists.

EDWIN L. GOLDWASSER
Department of Physics,
University of Illinois, Urbana

Aid for the University of Skopje

In the months since the first appeal appeared in Science (Letters, 19 June 1964, p. 1409) for aid in replacing scientific equipment destroyed by an earthquake in Skopje, Yugoslavia, negotiations between UNESCO and the government of Yugoslavia have cleared the way for immediate shipment of gifts in kind to the University of Skopje. Scientists around the world are reminded that there is still great need for equipment for teaching and research. Lists of items required by the various departments will be provided at once, along with instructions for shipping. Please write to UNESCO Gift Coupon Office, Place de Fontenoy, Paris 7e, France.

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sumption of feeds rich in starch or sugars. Bacterial fermentation in the rumen yields large amounts of L- and D-lactic acid in a hypertonic solution; D-lactate accumulates in the blood, leading to acidosis. D. I. Peretz (Vancouver General Hospital) correlated the severity of lactic acidosis with the irreversibility of shock in humans; isopropyllnorepinephrine appears to be beneficial in some cases. J. B. Dossetor (Royal Victoria Hospital, Montreal) reported two cases in which the hyperlactatemia of pathological hyperventilation was alleviated by inhalation of 5 percent CO2. L. S. James (Columbia University College of Physicians and Surgeons) discussed lactic acidosis in prenatal and newborn infants.

The conference was sponsored by the New York Academy of Sciences.

ROBERT H. DUNLAP
New York State Veterinary College, Ithaca

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January


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Robert S. Krooth, M.D., Editor

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"The Study of Gross Chromosomal Abnormalities" Jerome Lejeune, Institut de Progenese, Faculte de Medecine, Paris, France

"Summary of Technical Problems", Harry S. Eagle, Albert Einstein College of Medicine, New York City, N.Y.

"Introduction to the Study of Markers in Cell Culture", Stanley M. Gartler, University of Washington School of Medicine, Seattle, Wash.

"Study of the H-2 Locus in Murine Cell Culture", Leonard A. Herzenberg, Stanford University School of Medicine, Palo Alto, Calif.


"Study of Glucose-6-Phosphate Dehydrogenase Mutants in Human Cell Culture", Stanley M. Gartler, University of Washington School of Medicine, Seattle, Wash.


"Polyoma Virus", Klaus E. Bayreuther, California Institute of Technology, Pasadena, Calif.

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Ann Arbor


14–18. German Foundation for the Developing Countries, Public Health Teaching Problems in Asia, intern. seminar, Berlin, Germany. (GFDC, Tagungsreferat, Agrippinenstrasse 10, 53 Bonn, Germany)

14–18. Society of Economic Geologists, annual, Chicago, Ill. (E. N. Cameron, Room 30, Science Hall, Univ. of Wisconsin, Madison)


15–20. Impact of Mendelism on Agriculture, Biology, and Medicine, intern. symp., New Delhi, India. (A. T. Natarajan, Secretary, Indian Soc. of Genetics and Plant Breeding, Division of Botany, Indian Agricultural Research Inst., New Delhi 12)


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