Books of the Week

TO SERVE YOU: To get books, send us a check or money order to cover retail price. Address Book Dept., SCIENCE NEWS LETTER, 1719 N St., N. W., Washington 6, D. C. Ask for free publication direct from issuing organizations.

AMERICAN WILDLIFE AND PLANTS: A Guide to Wildlife Food Habits—the Use of Trees, Shrubs, Weeds and Herbs by Birds and Mammals of the United States—Alexander C. Martin, Herbert S. Zim and Arnold L. Nelson—*McGraw-Hill,* 500 p., illus., $7.50. Prepared under the direction of the United States Fish and Wildlife Service at the Patuxent Research Refuge, Laurel, Md.

ANTIPYRINE: A Critical Bibliographic Review—Leon A. Greenberg—*Hillhouse,* 136 p., $4.00. A reference tool for all research workers studying analgesic drugs.

ATOMIC EXPLOSION, FRENCHMAN'S FLAT, NEV.: U. S. Atomic Energy Test Program, Jan.-Feb., 1951 — Atomic Energy Commission — *Govt. Printing Office,* 1 p., 17x20, 25 cents. A four color process reproduction of a striking natural color official photograph. (See p. 19.)

BASIC EXERCISES IN COLLEGE BIOLOGY—James A. Dawson and William Etkin—*Crowell,* 232 p., illus., paper, $2.25. A basic biology manual providing the student with clear and complete instructions, both verbal and visual.

CHEMICAL SPECTROSCOPY—Wallace R. Brode—*American Society for Testing Materials,* 47 p., illus., paper, $1.35. The 1950 ASTM Edgar Marburg Lecture on the development and use of spectroscopic methods in analytical control.

CIVIL DEFENSE IN MODERN WAR: A Text on the Protection of the Civil Population against A-B-C Warfare—Augustin M. Prentiss—*McGraw-Hill.* 429 p., illus., $6.00. A program of civil defense covering every major aspect from atomic attack to bacterial and chemical warfare.

CONTROL OF HOUSEHOLD INSECTS—A. E. Michelbacher and Deane P. Furman—*California Agricultural Extension Service,* 34 p., illus., paper, free upon request to publisher, University of California, 22 Giannini Hall, Berkeley 4, Calif. Measures to be taken against the insects commonly found in California homes but many are of general distribution.

CREATIVE HANDS: An introduction to Craft Techniques—Doris Cox and Barbara Warren—*Wiley,* 2nd ed., 381 p., illus., $6.50. A book compiling the numerous craft techniques and designed especially for the beginner.

THE DINOSAUR BOOK: The Ruling Reptiles and Their Relatives—Edwin H. Colbert—*McGraw-Hill,* 2nd ed., 156 p., illus., $4.00. The story of amphibian and reptilian evolution with particular emphasis on the dinosaurs.

ESSENTIALS OF CHEMISTRY—Alfred Benjamin Garrett, Joseph Fredric Haskins and Harry Hall Sisler—*Ginn,* 570 p., illus., $5.00. An introductory text for students not intending to specialize in the field.

EXPERIMENTAL STUDIES IN BASIC COLLEGE CHEMISTRY—Everette L. Henderson—*Crowell,* 246 p., illus., paper, $2.50. A workbook for Babor's "Basic College Chemistry," although useful with other texts.

GENERAL COLLEGE CHEMISTRY—Joseph A. Babor and Alexander Lehrman—*Crowell,* 3rd ed., 800 p., illus., $5.00. A text intended for the more able and scientifically minded students in freshman chemistry.

GENETICS IN THE 20TH CENTURY: Essays on the Progress of Genetics during Its First 50 Years—L. C. Dunn—*Macmillan,* 634 p., illus., $5.00. The thought and study of some of the most distinguished geneticists of our day as represented in invitation papers at the Golden Jubilee of Genetics at the Ohio State University.

GOOD SCHOOLS DON'T JUST HAPPEN—*Science Research Associates,* 24 p., illus., 10 cents. This booklet lists the goals of school and community and tells how the problems of youth may be met by the individual.

HIGHWAYS WITH A NARROW MEDIAN—*Highway Research Board* Bul. 35, 95 p., illus., paper, $1.50. A summary of the reports from seven State Highway Departments on narrow highway safety islands under various conditions.

INDEX TO THE SEMIANNUAL REPORTS TO CONGRESS—U. S. Atomic Energy Commission—*Govt. Printing Office,* 40 p., paper, 20 cents. The index to the reports that cover the unclassified progress and activities of the AEC from Jan. 1947 to Jan. 1951.

THE MEASUREMENT OF LOW AIR SPEEDS BY THE USE OF TITANIUM TETRACHLORIDE: Research Report 25—Elmer G. Smith, Bob H. Reed, and H. Darwin Hodges—*Texas Engineering Experiment Station,* 22 p., illus., paper, single copies free upon request to publisher, Texas Engineering Experiment Station, College Station, Texas. After soap bubbles, puffs of smoke and toy rubber balloons failed, titanium smoke was successfully used for measuring low air speeds under 100 feet per minute.

MOST-OFTEN-NEEDED 1951 RADIO DIAGRAMS AND SERVICING INFORMATION WITH COMPLETE INDEX—M. N. Beitman—*Supreme Publications,* 192 p., illus., paper, $2.50. A manual of 1951 radio service material including AM and FM types, portables, auto sets, combinations, and record changers with a complete index to the previous ten radio and five TV volumes.

MUSICAL ACOUSTICS—Charles A. Culver—*Blakiston,* 3rd ed., 215 p., illus., $4.25. An explanation of the physical principles involved in the production and transmission of musical sounds.

NATIONAL AIRPORT PLAN, 1951—Civil Aeronautics Administration—*Govt. Printing Office,* 218 p., illus., paper, $1.25. A plan and program prepared to aid in development of a national system of airports which will care for all the needs of civil aviation. (See p. 25.)

NATIONAL DEFENSE AND HIGHER EDUCATION: The Report of a Conference of Representatives of Member Organizations of the American Council on Education at Washington, D. C., Jan. 19-20, 1951—Francis J. Brown—*American Council on Education,* 121 p., paper, $1.00.

THE NORTHERN AND CENTRAL NOOTKAN TRIBES — Philip Drucker — *Smithsonian Institution, Bureau of Ethnology,* 480 p., illus., paper, $1.50. An account of the social organization and culture of the Nootkan tribes of Vancouver Island.

THE PRESERVATION OF WILDERNESS AREAS—C. Frank Keyser—*U. S. Govt. Printing Office,* 114 p., paper, free upon request to Committee on Merchant Marine and Fisheries, Old House Office Building, Washington, D. C. An analysis of opinion on the problem prepared by the Library of Congress.

REPORT OF THE NATIONAL ACADEMY OF SCIEXCES, NATIONAL RESEARCH COUNCIL, 1948-1949—*U. S. Govt. Printing Office,* 171 p., paper, 40 cents.

STATISTICS OF NONPUBLIC SECONDARY SCHOOLS, 1947-1948—Rose Marie Smith—*U. S. Govt. Printing Office,* 11 p., paper, 10 cents. Chapter 7 of "Biennial Survey of Education in the United States, 1946-48."

THE TECTONICS OF MIDDLE NORTH AMERICA: Middle North America East of the Cordilleran System—Philip B. King—*Princeton University Press,* 203 p., illus., $3.75. A description of the architecture of the rock formations of the eastern United States.

WOOD FUEL: Report of Conference at Philadelphia, May 10, 1951—*Northeastern Wood Utilization Council Inc.,* 77 p., illus., paper, $3.00. Describing methods recently developed to burn wood waste as fuel.

Science News Letter, July 14, 1951

INVENTION

New Copper-Silver Alloys Give Better Electric Joints

➤ COPPER-SILVER alloys suitable for electrical contacts where high electrical conductivity in conjunction with high strength and resistance to wear are required brought John Sykes, Enfield, England patent 2,559,031. Rights have been assigned to Enbeld Rolling Mills Limited, also of Enfield, England.

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CHEMISTRY

Cortisone Made from Yams

Practical method of making anti-arthritis hormone, cortisone, from yams developed. Process, requiring 22 steps, promises more plentiful drug supply.

➤ A PRACTICAL method of making the anti-arthritis hormone, cortisone, from a wild Mexican root, instead of ox bile as now necessary, promises to make this wonder drug more plentiful in the future.

The new synthesis was worked out in Mexico by a chemical team of the Syntex Research Laboratories, American branch of which is Chemical Specialties Co., Inc., New York. It requires 22 steps but is a practical process which will be used in an industrial plant in Mexico to be in production early in 1952.

Ever since cortisone was demonstrated to be effective in treating rheumatism and many other disorders in 1949, there has been an intensive search for a non-animal source of material from which to make it. Only bile from ox and sheep, by-products of slaughterhouses, has been used heretofore. The starting point of the Syntex synthesis is a common tropical yam, known as dioscorea or cabeza de negra (negro head), which has been the starting point for Syntex production of other hormones such as testosterone, estradiol, progesterone and pregnenolone.

Two years ago the Mexican chemists began an intensive attempt to start with the yam and come out with cortisone. A three-stage attack brought success, through a combination of research in their own and other laboratories. The principal scientists of Syntex were Dr. George Rosenkranz and Dr. Carl Djerassi, with Dr. Gilbert Stork of Harvard as consultant.

Success in two of these stages is just being announced. The July issue of the JOURNAL OF THE AMERICAN CHEMICAL SOCIETY tells how cabeza extract is converted into a complex substance known as 11-keto-allo-pregnanolone. Previously in the same journal the conversion of this substance into Reichstein's Compound D was reported, and in the British journal NATURE (July 7) a relatively simple three-step procedure for transforming this compound into cortisone was detailed.

Thus a synthesis of cortisone has been developed that is not dependent upon the fluctuating supply of cattle but begins with yam roots that even now are being processed at the rate of 500 tons a month.

Dr. I. V. Sollins of Chemical Specialties Co., New York, explained that Syntex chemists expected to be able to eliminate in the future five or six of the 22 steps in the process.

The total synthesis of cortisone in 60 steps, as a chemical process that will not be applied practically, was also announced. The research of other scientists, notably Sir Robert Robertson of England, and Prof. Robert B. Woodward of Harvard, were applied in working out this total synthesis.

While the inedible yam dioscorea grows wild, it was placed under cultivation two years ago when it proved to be valuable as a raw material for drug synthesis. It is now being grown in Puerto Rico as well as Mexico to assure a continuing supply, not only for cortisone production but for other hormones as well.

Science News Letter, July 14, 1951

AERONAUTICS

All-Canadian Jet Fighter Readied for Flight Test

➤ THE FIRST all-Canadian jet fighting airplane is being readied for its first flight, it was revealed by the builder, A. V. Roe Canada, Ltd., of Malton, Ontario. Its notable feature is the two Orenda turbo-jet engines with which it is powered. The Orenda is rated as one of the world's most powerful jet engines.

This new engine has already undergone many types of bench tests and late in 1950 was used to power an American Sabre F-86. During the present year an Orenda-powered Sabre fighter flew from Toronto to Montreal at an average speed of 665 miles per hour. The engine is claimed to be more powerful than the jet used in the Sabre when it established the world's speed record of 670 miles per hour.

The plane in which the new engine will be used is the Avro Canada CF-100. It is a long-range all-weather fighter, designed particularly to meet the defense problems of Canda. CF-100s already in use are powered with British engines.

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● RADIO

Saturday, July 21, 1951, 3:15-3:30 p. m. EDT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. George K. Bennett, president, Psychological Corporation, New York, will discuss "Psychology at Work."

INVENTION

Remove Nitrogen to Get High Heat Value Gas

➤ GAS OF a high heating value, needed in certain industrial processes, is obtained from natural gas by removing the nitrogen from it by a process which was awarded patent 2,557,171. It was issued to William W. Bodle, North Kansas City, Mo., and Walter W. Deschner of Kansas City, Kans. J. F. Pritchard & Co., Kansas City, Mo., has obtained the patent rights.

Science News Letter, July 14, 1951