

States Bureau of Entomology has developed a device for inoculating living grubs with the bacteria and using the infected grubs for mass production of the spores. The "spore-dust" is applied to beetle-infested soil. When the bacteria become established in the soil the beetle population goes down rapidly. One application of spore-dust is usually enough to get the bacteria started. Where quick results are essential DDT or lead arsenate must be used for the first season or two. The effectiveness of milky disease builds up over several seasons. The disease does not directly affect adult beetles, but of course reduces their numbers by killing the grubs. Since the beetle is a good flier, there is of course constant danger of reinfestation of a soil area that was previously freed from beetles.

The Mechanical Properties of Human Bones—A Technical Report from the National Bureau of Standards, Washington, D. C., *The Science Counselor*, Vol. 9, No. 3, p. 98, Sept. 1948.

How much physical shock can the body stand? How much compression can human bones undergo before shattering? Are our bones as strong as steel? As hickory wood? Work by the National Bureau of Standards indicates that ordinary techniques and instruments can be used to find the answers to these and other similar questions. Why is it important to find answers to them? High speed aviation has created many problems concerning safety devices. Sometimes an airplane is completely wrecked and the occupant gets by with hardly more than a bruise; at other times a relatively slight blow on some part of the body causes serious or even fatal damage.

Preliminary data indicate that bone may be considered an elastic, brittle material having about one fourth the compressive strength of cast iron and about twice that of hickory. The elasticity is about that of wood.

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Reviews

BOOKS

GOETHE, C. M. *Geogardening*. The Keystone Press, Sacramento, California. xx + 350 pp. 1948.

C. M. Goethe needs no introduction to the reading public. He is remembered as the author of *Sierran Cabin From Skyscraper*, *War Profits and Better Babies*, and numerous other writings. His friends will welcome this new contribution and its influence toward reducing "biological illiteracy" in the United States. This book is an account of the author's ransacking the world in quest of first-hand information about the flowers, shrubs, and trees in his garden, with the view to ascertaining their genesis and ecological relationships, both biological and physical, between the plants and their 'Sauvage' environments. The reader is taken from one geogardening experience to another, as the author engagingly describes his wanderlusting to Japan, China, France, Mexico, Africa, Tibet, South America, and, in addition, many other countries. Each of the ninety one brief chapters is devoted to a separate theme. Gardenlovers will find comments upon their favorite flowers, shrubs, and trees. A limited number of those discussed will be mentioned. They are: Acacia, Almond, Begonia, Birch, Cactus, Canna, Pine, Cosmos, Ivy, Date palm, Elm, Fig, Iris, Maple, Pansy, Tulip, and Wistaria. This discriminating traveler and writer enhances the reading enjoyment with frequent statements about places, people, animals, local philosophies, and folk lore.

Concomitant, throughout this work, is the author's plea for an improvement of Human Genetics. This advocacy, from one who so conspicuously exemplifies his own teaching, may well be scrutinized and extended by every biology instructor from the secondary school through the university. Typical of the many references to Genetics and Eugenics are the following: "It has lifted man from the stooping, bent-kneed Neanderthalers to the Aristotles, the Shakespeares, the

Pasteurs, the Edisons." Also, "Intelligent plant and animal breeders, utilizing its laws, have through long-continued Artificial Selection built up valuable strains, horses and hens, plums, peonies and potatoes." Again, "One important result of applied eugenics will be the reversal of the present dysgenic trend of the birthrate of The Talented. We need, for example, more of the researcher pattern of intelligence."

Geogardening is illustrated with over two hundred black and white photographs. They cover a wide range of subjects, including plants, animals, people, places, and things. This feature alone makes the book one of interest and value. Also, numerous quotations from poems are included. This book was not placed on sale. Copies of it, however, may be obtained in practically all state, city, and college libraries in the Nation.

LEE R. YOTHERS,
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WEATHERWAX, PAUL. *Plant Biology*. Second ed. W. B. Saunders Co., Philadelphia. 451 pp. 1947. \$4.00.

Mr. Weatherwax, professor of Botany at Indiana University, brings his second edition up-to-date with the addition of the antibiotics, penicillin and streptomycin to his revised discussion of bacteria. Late information on enzymes and vitamins have also been included. Other additions are more detailed discussions of auxins and their relations to tropisms and flowering, and a fuller treatment of plant responses to stimuli. For the readers not acquainted with the first edition, this book was designed for college freshman and sophomores, not previously acquainted with the field. The selection and arrangement of topics using a pedagogic approach prove easy reading to one new to the field. This is a concise treatment of the bare essentials of botany.

The 26 short chapters are each ended with a half page of summary—no questions or references commonly found in a more detailed treatment. Topics appear in capitals in the center of the page with subtopics in smaller capitals on the left. Diagrammatic

drawings are conveniently placed, and not too numerous. Clear photographs are well spaced, informative, and contain only the subject under study. Key words are italicized and most of them appear in the 23 pages of the self-pronouncing glossary. This regularly-sized, well-bound book is ended with an uncrowded and workable 21 page index. *Plant Biology* should make an excellent textbook for a quick treatment of plants on a non-professional basis. Supplemental material would be needed for a more detailed study.

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ANATOMICAL CHARTS

Charts recently received for review include one, published by Rudolf Schick, 700 Riverside Drive, New York 31, N. Y., of the lymphatic system. In 30×54 inch size, this chart includes life size views of the general lymphatic system; throat and mouth cavity; lymphatics of the stomach, liver and intestines; also the following magnified views: lymph node (×30), cross section of a lymph node (×40), section of small intestine (×40), skin section (×50), lymph plexus (×100), a villus (×600). In full color, the chart makes clear one of the most difficult of the systems to visualize.

The full line of Shick charts includes most of the body systems and many organs, as well as the nutritive values of foods and other physiological subjects. The charts, mounted on linen, may be obtained on top-and-bottom rollers or on spring rollers. Prices are \$6.25 and \$8.25 for the smaller sizes and \$8.00 and \$10.00 for the larger sizes.

NEW FILMS ON DEMOCRACY

The Nature of Democracy a series of seven discussional slidefilms, is announced by The Jam Handy Organization. This series is produced in color by Curriculum Films Inc. The material in these films is based on extensive research and investigation. The sub-