discharge and geyser activity are reviewed. The final chapters treat utilization of hot springs, especially for therapeutic purposes, but the recently developing interest in geothermal energy and their possible usefulness in predicting volcanic eruptions are also noted.

The author only touches on such geologic aspects as structural control and the influence of specific rock types on the chemical compositions of hot spring waters, leaving these subjects for future study by geologists or geochemists.

Because the general approach is to consider the chemical constituents singly or in small groups, the chemical, physical, and geologic aspects of individual hot spring areas are dispersed throughout the book. Nevertheless, even for one whose interest is focused on a single area, this volume fills a long-existing need. The extensive bibliography can serve as a guide for those who wish to acquire additional chemical detail. About 190 different hot spring areas are listed in the index.

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Colleges of Agriculture

The College of Agriculture: Science in the Public Service (McGraw-Hill, New York, 1966. 249 pp., $6.95), by Charles E. Kellogg and David C. Knapp, reflects present trends in the development of three functions of the colleges of agriculture within the land grant system—resident instruction, research, and extension education. The majority of the book is devoted to resident instruction at the undergraduate and graduate levels, with emphasis on the former.

During 3 years of visiting campuses and reviewing literature the authors gained an excellent perspective of the colleges of agriculture, and they have described quite accurately the trends in thinking of deans and directors of research, extension work, and resident instruction.

The authors have not hesitated to reflect their own views concerning what they consider the best of what they observed in undergraduate education. Furthermore, they express their own views of what colleges of agriculture should provide in the way of curriculum content and organization, counseling services, and public information programs as well as their views on the quality of instruction. Emphasis has been placed on the development of curricula heavily weighted toward basic courses in the natural sciences, social sciences, and humanities. Major changes in the curriculum which they favor are (i) a curriculum that includes mathematics through calculus and a foreign language; (ii) an introduction to the biological sciences by way of a molecular biology course rather than through the conventional introductory courses in botany, zoology, and bacteriology; and (iii) the elimination of the conventional introductory agricultural courses taught in the freshman year because the subjects must be taught again when the students have gained a foundation in the physical and biological sciences.

The authors feel that until the land grant colleges of agriculture become overcrowded, states should not attempt to provide additional colleges of agriculture. The technical courses in agriculture could be taught in the junior and senior years which would permit more students to take their first two years in a junior college or perhaps at another university and thus relieve some overcrowding. A case is made for colleges of agriculture offering shorter programs that range up to 2 years in length.

They suggest that colleges of agriculture provide three courses which would help orient the agricultural students during their first two years in college: (i) A broad course in the history of agriculture that deals with the social, economic, and political problems associated with the development of agriculture; (ii) a broad course in world agriculture that would provide a perspective of the main crops of the world; and (iii) a broad course in soils that would provide the students with a worldwide perspective of soils and related natural resources.

The authors have developed a useful guide for those who shape policy in colleges of agriculture. However, had the authors served as deans of agriculture, I suspect they would have a greater appreciation for the role of vocational agriculture and freshman courses in agriculture in motivating and sustaining the interest of students in a field so vital to the welfare of this country.

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New Books

Biological and Medical Sciences

The Chemistry of Wheat Starch and Gluten and Their Conversion Products. J. W. Knight. Leonard Hill, London; Chemical Rubber Co., Cleveland, Ohio, 1965. 168 pp. Illus. $12.

Current Topics in Radiation Research. vol. 2. Michael Ebert and Alma Howard, Eds. North-Holland, Amsterdam, 1966. 408 pp. Illus. $12.60. Seven papers: "Radiation chemistry of synthetic macromolecules in solution, LET effects" by A. Henglein and W. Schnabel; "Some chemical and biological effects of elastic nuclear collisions" by H. Jung and K. G. Zimmer; "Energy transport in carbohydrates" by Glyn O. Phillips; "The molecular basis of biological effects of ultraviolet radiation and photoreactivation" by Jane K. Setlow; "Approaches to the determination of the initial sites of action of radiations in *Escherichia coli* and yeast" by F. Joset, E. Moustacchi, and H. Marcovich; "Radiopathology of extracellular structures" by R. Brinkman and H. B. Lamberts; and "Radiation biology as applied to radiotherapy" by J. F. Fowler.

Electrolytes, Fluid Dynamics, and the Nervous System. Joseph Henry Cort. Czechoslovak Acad. of Sciences, Prague; Academic Press, New York, 1965. 231 pp. Illus. $10.

The Entomology of Radiation Disinfestation of Grain. P. B. Cornwell, Ed. Pergamon, New York, 1966. 256 pp. Illus. $10. Thirteen reports on work carried out by the Entomology Group of the Wantage Research Laboratory, 1955 to 1961.

General Biology. James Watt Mavor and Harold W. Manner. Macmillan, New York, ed. 6, 1966. 720 pp. Illus. $8.95.

Modern Life Science. Frederick L. Fitzpatrick and John W. Hole. Holt, Rinehart, and Winston, New York, 1966. 576 pp. Illus. $5.60.

Peptides and Amino Acids. Kenneth D. Kopple. Benjamin, New York, 1966. 149 pp. Illus. Paper, $3.95; cloth, $8. The Organic Chemistry Monograph Series, edited by Ronald Breslow.

The Physiology of the Mouth. G. Neil Jenkins. Davis, Philadelphia, ed. 3, 1966. 507 pp. Illus. $11.50.

The Prenatal Lung. S. Engel. Pergamon, New York, 1966. 79 pp. Illus. $7.

Radiological Anatomy. D. Nagy. Translated from the Hungarian edition (1959) by A. Deák. Pergamon, New York, 1965. 526 pp. Illus. $17.50.

Sand and Water Culture Methods Used in the Study of Plant Nutrition. E. J. Hewitt. Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England, ed. 2, 1966. 561 pp. Illus. $15.

Sex Determination. Guido Bacci. Pergamon, New York, 1965. 318 pp. Illus. $15. International Series of Monographs in Pure and Applied Biology, vol. 26, edited by G. A. Kerkut.

A Survey and Illustrated Catalogue of the Teredinidae (Mollusca: Bivalvia). Ruth D. Turner. Museum of Comparative Zoology, Harvard Univ., Cambridge, Mass., 1966. 275 pp. Illus. $8.