Organic Agricultural Chemistry (*The Chemistry of Plants and Animals*). A text-book of general agricultural chemistry or elementary bio-chemistry for use in colleges. By JOSEPH SCUDDER CHAMBERLAIN, Ph.D., Professor of Organic and Agricultural Chemistry in the Massachusetts Agricultural College. New York, The Macmillan Company, 1916. 319 pages.

In following out certain modern ideas that science can be applied from the beginning and not lose any of its scientific value, this text comes as a distinct change from the usual books on the subject of organic and agricultural chemistry. It starts in with a brief description of systematic organic chemistry, but keeps in mind all the time that the compounds described have an agricultural value. Then follows a section on physiological chemistry dealing first with animals and then with plants. Finally there is a section on crops, foods and feeding which presents "the chemical basis for the valuation of animal foods but without entering into the discussion of the practical operation and results of animal feeding."

The following are the chapter headings: Section I. *Systematic.* Chapter I. Hydrocarbons; II. Substitution Products of the Hydrocarbons; III. Oxidation Products of Alcohols; IV. Derivatives of Alcohols and Acids; V. Mixed Compounds; VI. Amino-Acids, Proteins, Urea, Uric Acid; VII. Carbohydrates. Section II. *Physiological.* Chapter VIII. Enzymes and Enzymatic Action; IX. Composition of Plants and Animals; X. The Living Cell and Its Food; XI. Animal Food and Nutrition; Digestion and Absorption; XII. Animal Food and Nutrition; Metabolism; XIII. Milk, Blood and Urine; XIV. Plant Physiology. Section III. *Crops, Foods and Feeding.* Chapter XV. Occurrence and Uses of Important Constituents in Agricultural Plants; XVI. Occurrence and Uses of Important Constituents in Agricultural Plants (Continued); XVII. Animal Foods and Feeding.

One criticism to be made is of the statement occurring now and then that certain processes can not be explained here, or that it is unnecessary to give the proof for some reaction. In an elementary text it is not wise to make such statements. It is far better to give as many of the facts as are desirable or necessary for the case in point and make no apologies. Another fault to be found is that there are no illustrations. All texts should be generously illustrated with good pictures if the average student is to make the best use of the book.

The idea of using only those compounds occurring in a study of agricultural chemistry is well worked out, and the student is carried rapidly from simple to complex forms without any loss of time and without any loss of the unity or coordination of systematic organic chemistry. This section shows very well how such a subject can be practically applied without losing any of the pure science. In the section on physiological chemistry the action of enzymes and the chemistry of the cell are made very plain. Crops are discussed briefly but efficiently, and the question of nutrition treated with just enough detail to acquaint the student with the underlying principles.

The book is well printed and neatly bound. It is a volume to be recommended to those who desire a condensed treatment of biochemistry, being thoroughly scientific and yet practical and interesting.

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THE UNITED STATES GEOLOGICAL SURVEY MAPS

THE thirty-seventh annual report of the U. S. Geological Survey states that the project of covering the 3,000,000 square miles of the United States with accurate topographic surveys was definitely adopted by the federal government in 1882, and the work is even now less than half completed. The standards of accuracy and refinement in topographic surveying have been constantly raised by the topographic engineers, with the view of meeting adequately every use to which the resulting maps can be put. The law provides for the sale of the United States Geological Survey maps at the

cost of printing, a charge that must be considered merely nominal when it is realized that the cost of an edition of the printed map may be only a small percentage of the cost of surveying the area it represents. The government itself is making a large and increasing use of these topographic maps, but the expenditure of public funds for these surveys is otherwise fully warranted only as the public uses the maps. To promote this use, the survey has recently given more attention to the wider distribution of the maps.

The distribution of a government map is largely a problem of publicity, though the necessity of adopting commercial business methods in handling orders for the maps when once a demand is created must not be overlooked. In informing the public of the existence of authoritative maps published by the federal government a special effort is now made to reach the communities in each area covered by a map, and to this end every map as issued is brought to the attention of the local and state press, as well as of postmasters and school-teachers.

Other methods of promoting wider distribution involve the cooperation of boy-scout masters, schoolboys and hotel managers, as well as of a large number of bookstores as local agents.

Within the last year the most helpful publicity has been gained through the voluntary cooperation of several press services and magazines of large circulation, in connection with their policy of bringing the people into closer touch with the work and publications of the federal government. The publication in one magazine of a brief statement regarding the Geological Survey's maps resulted within a month in orders for 550 maps and thousands of inquiries for the state indexes that show the areas already mapped.

The periods of maximum demand for these governments maps are the beginning of the vacation period and the beginning of the school year. The larger use of topographic maps in 1915–16, both in the open and in the classroom, is a gratifying index of the popular benefit already resulting from the increase in the work of publicity.

A NEW INSECT ENEMY OF THE PEACH

An insect destructive to the peach and kindred fruits, believed to be new in the United States, has been discovered by entomologists of the U. S. Department of Agriculture in the District of Columbia and its environs. This insect, which in its adult form is a brownish moth and in its larval stage a small white and pink caterpillar, attacks both the tender shoots and fruit, causing serious losses.

Because of the habits of the worm, the usual control measures, such as spraying with certain arsenates, will probably not be effective. The smooth young shoots, owing to their rapid growth, are protected by the poison solution for only a very short time after the spray is applied, and hence it is almost impossible to poison them. The entomologists of the department who have been investigating the pest, will continue to study it in the hope of developing control measures.

The insect, known to science as *Laspeyresia molesta,* is believed to have been introduced from Japan. So far as the department's entomologists know, it has not been found in America other than in the District of Columbia and in the adjoining territory in Maryland and Virginia. The specialists are desirous of knowing if the insect has attacked peach, plum or cherry trees elsewhere in the United States.

The presence of the insect can best be determined in most cases by the nature of its injury to peach trees. It bores into practically every tender twig and causes new shoots to push out from lateral buds. These are attacked in turn, the abnormal stimulation of lateral growth producing a much branched and bushy plant. A copious flow of gum from the twig-ends often follows the attacks of the caterpillars.

In attacking fruit the young caterpillars generally eat through the skin at or near the point of attachment of the fruit stem. The larva, as it grows, makes its way to the pit, where it feeds on the flesh, which soon becomes much discolored and more or less slimy. Larvæ entering at the side of the fruit are more likely to eat out pockets or cavities in the flesh. The full-grown caterpillar spins a whit-