

level, while the deep streams meandering sluggishly through them do not shoal, but become continually deeper through a slight excess of depression of their bottoms, as a part of the area of general subsidence, over the fill due to sediment. This is a classic and very evident proof of actual subsidence, as valid now as ever. The subsidence has probably been very slow, possibly not over six inches in a century, but that it is real admits of no doubt. To ascribe these phenomena to the fluctuations of height of ordinary high tides is, to say the least, inadmissible.

THOS. L. CASEY

SCIENTIFIC BOOKS

Conservation by Sanitation. By Dr. ELLEN H. RICHARDS. New York, John Wiley & Sons. 1911. 8vo. Pp. 305. Cloth, \$2.50. Illustrated.

Peculiar interest attaches itself to this work, as it is almost the last publication of one who has contributed very largely to the literature of modern sanitation. Mrs. Richards's books on water analysis are well known to a wide circle of readers. Her other books on the cost of cleanness, the cost of living, the cost of food, the cost of shelter, the chemistry of cooking and cleaning, home sanitation, etc., are equally well known to an entirely different circle of readers. To say that these books have had an important influence in molding modern sanitary thought, especially among women, is to put the truth but mildly.

"Conservation by Sanitation" is a laboratory guide for sanitary engineers in the study of air, water supply and the disposal of waste. It is divided into two parts. Part I., which comprises about three quarters of the work, is of a general character and adapted to a wide field of readers. Its style is discursive, perhaps too much so, but it covers many matters of interest and importance in the realm of sanitary science.

Especial prominence is given to the sanitation of air, which is regarded as "a neglected resource." The advantages of pure air and better ventilation in houses and factories is set forth. One chapter is devoted to the work

of the sanitary inspector and the analysis of air.

Several chapters are devoted to the history of public water supplies, the development of the sanitary idea as indicated by the municipalization of water works, economic and sanitary efficiency of water works, protection of water supplies as a conservation of natural resources, the regeneration of a spoiled watershed, the interdependence of town and country, and efficiency of filtration. On many of these subjects the information given is disjointed, but is nevertheless instructive. Particular emphasis is placed upon the necessity of collecting water from a clean gathering ground and storing it in clean reservoirs. The uses of the chemical analysis of water are described at length, but one of the rather surprising features of the book is the conspicuous absence of references to bacteria and their importance in water supplies.

Two chapters are devoted to the disposal of wastes, including garbage, sewage and wastes from manufacturing establishments. The effect of dilution is considered at some length, but little space is devoted to works for the purification of sewage.

The first part of the book closes with a chapter on the education and position of the sanitary engineer in the progress of modern sanitation, in which emphasis is placed on the need of efficiency in the enforcement of health laws.

The mechanical basis of modern life must come to the aid of moral and personal influence. It is not enough to tell men to do the right thing—they must be fenced in from the wrong thing. For this reason the public service engineer is the emerging leader in community welfare.

Part II. comprises a series of laboratory exercises and tests on the inspection of ventilation and the analysis of water and sewage. These notes are based on exercises prepared for the fourth-year sanitary engineering students at the Massachusetts Institute of Technology, where Mrs. Richards was for so many years an important member of the faculty.

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