

for adequate legislation and for effective control of the lobster fishery.

PHILIP B. HADLEY

KINGSTON, R. I.

Farmers of Forty Centuries, or Permanent Agriculture in China, Korea and Japan.

By F. H. KING, D.Sc. Published by Mrs. F. H. King, Madison, Wis. 8vo. Pp. 441, 248 illustrations. 1911.

A more wholesome work at the present stage in agricultural agitation in this country could scarcely be written; nor could it well come from one better fitted to write it, for the tenor of the story falls closely into line with Professor King's intensive studies on soil management. In a very peculiar sense the art of soil management in distinction from soil science constitutes the theme of this work. Until recently, the Chinese, Japanese and Koreans were almost wholly without formal agricultural science in the western technical sense, while they have for centuries been adepts of unsurpassed skill in agricultural practise. The story of Professor King is not the less weighty because he has seemed to lean a little at times to the tide of Occidental opinion that has set rather strongly heretofore toward chemical analysis as the decisive mode of attack and source of guidance, and he can not be thought partial in setting forth the attainments of Oriental peoples who have worked in almost entire negligence of all resources but those of the farm, the home and the town. "Farmers of Forty Centuries" is in effect a sketch of domestic methods of nursing crops.

As Dr. Bailey intimates in a graceful preface to the book, Dr. King has played well the rare part of "an *agricultural* traveler" and his results are quite on the high level of those other traveling experts who set forth natural features or social phenomena with expert touch. Professor King crossed Japan and touched eastern China on his inward trip, but his serious work only commenced when he reached the tropical border of south China and began to work northward with the advancing season. This put him in the way of critically following the modes of treatment in

vogue just at the transition from the winter crops to the spring and early summer crops. These combined at once the maturing and the harvesting of the one and the fitting, the planting and the early culture of the other. Thus he advanced by stages—looping back for restudy midway—from the tropical border in Kwangtung and Kwangsi, into Chekiang and Kiangsu in the latitude of our southern states, later into Shantung and Chili in latitudes comparable to Kentucky and Illinois, and at length into Manchuria, whose climate is comparable to that of our distinctly northern states. Passing through Korea, he was guided in a further study of Japan by details from the Japanese agricultural stations in which western science has already joined hands with Oriental experience with the happiest results.

King's treatment is everywhere sympathetic and appreciative. He is singularly free from the Occidental provincialisms that mar so many stories of Oriental travel. He seems to have carried at all times the trained sense of the agriculturalist and of the student of fertilization, not the sniffing nose of the typical westerner. He seems in no wise to have been squeamish about inevitable organic odors, but yet was keen enough to note the singular scarcity of flies and to draw the inference that it meant a vital order of cleanliness and carried a sanitary significance. In the universal use of hot tea-tinctured drinks he saw as other incisive travelers have done an important protective custom. Nowhere does he lapse into grewsome pictures of putative decimations due to invited diseases. His tale is that of a fair-minded friendly visitor seeking to learn, and his story is in grateful contrast to the irksome animadversions of the commonplace Occidental writer who plumes himself on looking down on Oriental customs "e superiore loco," as Cæsar would say.

King's statements are larded with quantitative data and carry a wealth of precise fact brought close home to the special cases of individual farmers or particular practises. The smallness of the farms, the largeness of the product, the lavishness of the labor and a multitude of special items relative to specific

crops, modes of handling, costs of fertilization, and largeness of population per unit area, make the book a thesaurus of its kind.

The author, like the reviewer whose educational studies in China ran contemporaneously with these agricultural ones, was impressed with the extent of resources still unused in the very regions whose overcrowded condition has been so common a theme of lugubrious comment. Scattered through the volume there are economic points of the most vital pith that should serve as an antidote to the pessimistic Jeremiads so current in these days and so commonly floating on very shallow waters. The following quotation from the final chapter on Japan, p. 425, must suffice to indicate the tenor of the author's outlook on future possibilities:

In 1907 there were in the [Japanese] Empire some 5,814,362 households of farmers tilling 15,201,969 acres and feeding 3,522,877 additional households, or 51,742,398 people. This is an average of 3.4 people to the acre of cultivated land, each farmer's household tilling an average of 2.6 acres.

The lands yet to be reclaimed are being put under cultivation rapidly, the amount improved in 1907 being 64,448 acres. If the new lands to be reclaimed can be made as productive as those now in use there should be opportunity for an increase in population to the extent of about 35,000,000 without changing the present ratio of 3.4 people to the acre of cultivated land.

While the remaining lands to be reclaimed are not as inherently productive as those now in use, improvements in management will more than compensate for this, and the Empire is certain to quite double its present maintenance capacity and provide for at least a hundred million people with many more comforts of home and more satisfaction for the common people than they now enjoy.

The soul of the book lies in its appreciative delineation of methods that have sufficed for the maintenance through many centuries of perhaps the highest average productivity ever attained by great peoples, and its chief lesson lies in the realization of this by simple domestic means. The style of the book is excellent and the two hundred and forty odd half tones effectively illustrate the text.

That this should be the last contribution of one who has written so much and so well is a source of inexpressible regret.

T. C. CHAMBERLIN

SCIENTIFIC JOURNALS AND ARTICLES

THE closing (October) number of volume 12 of the *Transactions of the American Mathematical Society* contains the following papers:

W. A. Manning: "On the limit of the degree of primitive groups."

G. A. Miller: "Isomorphisms of a group whose order is a power of a prime."

John Eiesland: "On minimal lines and congruences in four-dimensional space."

G. C. Evans: "Volterra's integral equation of the second kind, with discontinuous kernel. Second paper."

E. J. Wilczynski: "One-parameter families and nets of plane curves."

Also: "Notes and errata, volumes 10 and 11."

THE December number (volume 18, number 3) of the *Bulletin of the American Mathematical Society* contains: "A generalization of Lindelöf's theorems on the catenary," by Oskar Bolza; "A note on the theory of summable integrals," by S. Chapman; "Irreducible homogeneous linear groups of order p^m and degree p or p^2 ," by W. B. Fite; Report on "Graduate work in mathematics in universities and in other institutions of like grade in the United States," by the American committee of the International Commission on the Teaching of Mathematics; "Shorter Notices": Holton's *Shop Mathematics*, by C. N. Haskins; Timerding's *Die Mathematik in den physikalischen Lehrbüchern*, and Siddons and Vassall's *Practical Measurements*, by E. W. Ponzer; Hosmer's *Azimuth*, by E. B. Wilson; "Eisenhart's Differential Geometry," by G. A. Bliss; "Note on collineation groups," by H. H. Mitchell; "Notes"; "New Publications."

THE January number of the *Bulletin* contains: Report of the October meeting of the society, by F. N. Cole; Report of the October meeting of the San Francisco Section, by T. M. Putnam; "The Karlsruhe meeting of the German Mathematical Society," by Virgil Snyder;