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Review: A Deep Boring in Denmark

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REVIEWS.

EUROPE.

THE RHENISH PALATINATE.

Die natürlichen Landschaften der Rheinpfalz. Eine Beitrag zur pfälzischen Heimatkunde.' Von Dr. phil. nat. Daniel Häberle, Kaiserl. Rechnungsrat, etc. In Kommission bei H. Kaysers Verlag in Kaiserslautern, 1913. Pp. viii. and 66. 6 *Illustrations in the text, 21 Plates, and a Map.*

The Rhenish Palatinate, having an area of 2290 square miles, is simply a political division established by the Paris treaties of 1814 and 1815, and consists of fragments of several geographical regions widely different in character, owing to their varied geological structure and their configuration. The author has travelled all over the country, and has made use of a large number of books and articles in compiling this treatise of regional geography. The plain of the Rhine, with its 580 square miles, is the best defined natural region, and its trough, filled with the diluvial and alluvial deposits of the river and fruitful loess soil, supports intensive agriculture, producing corn, beet, tobacco, hops, vegetables, and fruit. The Haardt, the margin of the mountains and their skirting zone of hills, with Tertiary deposits, Permian Trias and Jurassic rocks, is a wine-growing district, with 25,000 acres of vineyards, and yields materials for stoneware, porcelain, and glass factories. The Pfälzerwald may be considered the backbone of the Palatinate. It has a length of 60 miles, and extends for a breadth of 20 to 25 miles over the Buntsandstein, constituting, with its area of 520 square miles, about a fourth of the whole territory. Its chief wealth lies in its fine forests, but it also contains quarries and mineral springs. The south-western plateau slopes gently west and south-west, and is diversified by deep winding valleys and low-arched ridges. Though covered with Muschelkalk, it may be considered the western offshoot of the Buntsandstein plateau. The Muschelkalk yields material for walls, plastering, and road mending; mineral springs are common, and in some places the soil is very fruitful. The western moorland, a long hollow in the Buntsandstein, is probably the result of the action of erosion and denudation; it contains large stores of peat, and yields sand for glass manufacture and clay for bricks. The northern mountain-land is not a separate natural division, but part of a region of Permo-Carboniferous rocks extending to the Hochwald and Hunsrück, with an area of about 60 miles long by 25 broad, half of which lies within the boundaries of the Palatinate. Its structure, cultivation, and distribution of population are very varied. Corn, cattle, fruit and wine, and coal are its chief products. The book is worthy of better printing and paper; its geological sections especially might be clearer.

A DEEP BORING IN DENMARK.

'Carlsbergfondets Dydboring i Grøndals Eng ved København 1894-1907, og dens Videnskabelige Resultater.' Ved E. P. Bonnesen, O. B. Bøggild og J. P. J. Ravn. København: Bianco Lunos Bogtrykkeri. 1913. Pp. 105. 8 *Plates.*

This boring, executed under the direction of Prof. N. V. Ussing, was continued intermittently for thirteen years, and reached a depth of 2824 feet. Prof. Ussing having died in 1911, Prof. Ravn undertook the preparation of the report, with the assistance of Profs. Bonnesen and Bøggild. The temperature in the boring, except in the upper surface layer, about 300 feet down, was found to increase regularly at the rate of 1° F. to 84 feet (1° C. to 46.1 m.). This

length of 84 feet is unusually large, the average interval in other borings being 64 feet. The temperature is given to a high degree of accuracy by Fischer Petersen's formula, $t = 8.29 + 2.154 \frac{d}{100}$, d being the depth in metres, and the temperature expressed in the Centigrade scale. The rock series consists of Quaternary deposits down to 35 feet; Danian beds of very flinty Saltholm limestone, containing remains of *Bryozoa*, to 120 feet; chalk with flints down to 950 feet; white limestone without flints to about 1760 feet; and lastly, slaty marl with layers of white or grey limestone to the bottom of the boring. The chalk and the marl belong to the Senonian series of Cretaceous rocks, as is shown by the fossils they contain. The marl, hitherto unknown, contains much terrigenous material (loam and quartz-sand), especially in its deeper layers, and it is fairly certain that these were laid down in a sea of no very great depth and comparatively near to a coast. The bottom of this sea sank constantly until the marl had accumulated to a depth of 2000 feet; then it rose, only to sink again, and this subsidence continued until near the end of the Cretaceous period. The boring has to some extent disappointed expectation owing to the unusual depth of the formations, and partly owing to the difficulties connected with the petrographic structure. It is the deepest boring made in Denmark, the greatest depth attained previously being only 1310 feet. It is to be kept open in case any one should wish to continue the work at some future time, and meanwhile is available for various experiments and investigations.

ASIA.

'The Fringe of the East.' By H. C. Lukach. (London: Macmillan. 1913. Pp. xiii. 273. *Map and Illustrations*. 12s.) The Ægean, Rhodes, Cyprus, Palestine and the parts of Syria beyond Aleppo to the Euphrates are dealt with in this volume, which is concerned with incidents of travel, description, and history. It is vividly written and contains much valuable matter outside the range of the ordinary travel-book, even though the writer did not leave pretty well known lines. Without instituting any comparison in derogation of other chapters, it may be said that the two on Rhodes and Cyprus afford particularly good succinct accounts of these islands.

'Farmers of Forty Centuries.' By F. H. King. (Madison, Wis.: Mrs. F. H. King. 1911. Pp. ix., 441. *Maps and Illustrations*. \$2.50.) The late Dr. F. H. King, professor of agricultural physics in the University of Wisconsin, is referred to in the preface to this work as an "agricultural traveller," and it is pointed out with some justice that there have not been many travellers who have been also agriculturists, and that the specific point of view which Dr. King brought to bear on his observations in foreign countries is comparatively uncommon. His chapters in this volume, which is concerned with China, Korea and Japan, deal mostly with individual points—rice culture, silkworm culture, the tea industry, and the like—in agriculture and allied topics; the student of the geography of products may therefore take note of this work, and especially, perhaps, of the chapter on canalization, which contains an interesting sketch-map of the irrigation and drainage canal system in part of Chekiang province.

'A Wayfarer in China.' By Elizabeth Kendall. (London: Constable. 1913. Pp. xv., 338. *Maps and Illustrations*. 10s. 6d.) This is a book of travel, without scientific pretensions, but commendable for clarity of description, from Tongking through Yunnan and Szechuen, along the Yangtse Kiang to