

sized. We like the opening sentences in Chapter III., and can not refrain from quoting some of them, as follows:

Every citizen in every country is interested, or should be interested, in good scenery. Of the various elements that constitute good scenery or that go to make up our landscape there are none so ornamental nor so indispensable as trees.

In discussions relating to the conservation of our natural resources, therefore, the element of good scenery should always be considered. Since good forests, good farms and good waterways contribute largely to the landscape, the element of good scenery can not easily be separated from many of the commonly recognized natural resources.

Trees have become so much a part of our civilization that it would seem almost impossible to get along without them. What would our homes, our country roads, our city streets, our parks, and our landscape be without them? We all know that trees are beautiful and even necessary in such places, but we can not fully appreciate their value till we have seen the desert.

The value of trees from the economic or commercial standpoint is well understood and can be estimated on the basis of dollars and cents. Their esthetic value and their value from the standpoint of health is not so generally appreciated nor is it so amenable to calculation. We hear a great deal these days about surveys—forest surveys, agricultural surveys and the like. A survey in this sense means an inventory or a stock-taking. It would be interesting to make a survey based upon the landscape wealth of any section or of the whole country. It would be interesting also to compare in such a survey the relative value of the various elements of the landscape. It seems safe to predict that in most sections trees would be credited with a very large proportion of the total wealth.

And again in Chapter IV., we find these suggestive sentences:

When we think of the open country we are reminded of the cool and shady roads, although some country roads are not so alluring as they ought to be. The thought is comforting. On the other hand, when we think of conditions in the city, the hot and dazzling pavements present themselves vividly to our memory. The thought is anything but comforting. Blessed is the city that is well supplied with trees.

The attractiveness of a city depends largely upon

its trees. A city without trees can not be attractive, and the more trees within the city limits, the more attractive is the city likely to be.

Passing to the systematic part of the book there is first a general chapter on the identification of trees, with such explanation of terms as will render this work easier for the beginner. Then follow various keys, as (1) a key to genera, (2) keys to the conifers, (3) keys to the various kinds of deciduous trees. These keys refer to full-page descriptions and discussions of the particular species, and on the opposite page is a full-page plate of characteristic illustrations made by "half-tone" process from carefully selected photographs. These descriptions cover habit, bark, twigs, leaves (in evergreens only), buds, fruit, comparisons with other species, distribution, and wood characters. Preceding the descriptive matter is an English name, followed by the scientific name, very properly in a book like this, accompanied by the "authority" for the species. A convenient glossary and a well arranged index complete this useful book. The binders have enclosed the text in a pretty and appropriate cover in keeping with its title.

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*Science and the Human Mind, a Critical and Historical Account of the Development of Natural Knowledge.* By WILLIAM CECIL DAMPIER WHETHAM, M.A., F.R.S., Fellow and Tutor of Trinity College, Cambridge, and CATHERINE DURNING WHETHAM, his wife. New York, Longmans, Green, and Co. 1912. Pp. xii + 304. Price, \$1.60 net.

This work consists of an Introduction, and of six chapters on Science in the Ancient World, the Medieval Mind, the Renaissance and its Achievement, the Physics of the Nineteenth Century, the Coming of Evolution, and the Last Stage; of a good bibliography (pp. 287-296), and of a full index. The authors are already known favorably to scientific men by their "A Treatise on the Theory of Solution" and "The Theory of Experimental Electricity"; to the general public by their admirable "The Recent Advance of Physical

Science"; and to students of society by several publications on heredity and eugenics. In other words, they have proven their right to the present undertaking by substantial contributions to at least two distinct fields of research.

It is obvious, of course, that a field so vast can not be covered satisfactorily in a single volume of moderate size. Accepting this limitation as inevitable, and setting aside criticisms which, unmindful of it, one might pass readily, it may be said at once that the effort is remarkably successful. Indeed, I am unacquainted with a better book, particularly in the matter of unexpected suggestiveness (towards the close notably), of equal or briefer compass. I would commend the spirited, sometimes eloquent picture of the medieval mind (pp. 64 f.), the lucid account of Newton (pp. 128 f.), the absorbing tale of the rise of electrical science (pp. 181 f.), the generous tribute to Darwin (pp. 209 f.), and the last chapter (pp. 233 f.), which is, in itself, enough to justify the book. It is a pleasure to meet devotees of "natural knowledge" who not only can write, but evince sane appreciation of humanistic knowledge.

The blots are few. Here and there, especially in the Introduction and on the last page, the authors permit themselves to be betrayed into what I take the liberty to call silly remarks about philosophy and metaphysics. Plainly, their *Wissenschaft* knows not these subjects as *Wissenschaft*. This is the more striking that, in other contexts, they make most ample amends. I mention this, because it punctuates the contrast between themselves and Dr. Th. Merz, with whom they are likely to be compared. They may feel his catholicity, they do not always observe it.

The race-theory, a result of their sociological inquiries, which Mr. and Mrs. Whetham apply to their subject, is one of the fascinating features of the book. "Natural knowledge" has been formulated and developed by the races of northwestern Europe. "It is possible that danger to science, as to society, lies ahead. . . . The dominance of the universal proletariat, which some dread and others ac-

claim—a proletariat not dissimilar in race to the southern rulers of the Roman Church—may threaten in the future the freedom of enquiry, the fearless exercise of reason, the full development of personality, that form the life-blood of the northern race and its scientific achievement. . . . If the same race once more gains ascendancy in northern lands, as, by the differential birth-rate and the downward shift of political power, it seems destined to do, it is difficult to believe that scientific results which threaten its prejudices or are not in accord with its ideals will be respected" (pp. 279–80). Darwin was a conspicuous product of the Anglo-Danish and East Anglian folk, who have done most for the progress of science. And so, Mr. Whetham is able to construct a great brief for his own, the East Anglian, university. Nevertheless, I do not see why he should have omitted Macquorn Rankine in reference to the foundation of thermodynamics (p. 179). Nor does his theory, of the mysticism of the northern race, supply the reason why Kelvin "is said to have begun his lectures on physics with the Collect for the day" (p. 158). As a pupil, I may say that Kelvin did so, but because it was the universal custom at Glasgow to open the morning classes with prayer. Nevertheless, I accept the theory, as indeed I must—my paternal ancestors for generations are East Anglians! And yet, I am in doubt; for I still traffic in "speculative philosophy, tossed about by every wind of doctrine" (p. 7). But, it were too hard a test to ask an author to prove his theory on the *corpus vile* of a reviewer of whom he never heard tell. So, once more, I say the book is thoroughly worth while.

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#### NOTES ON ENTOMOLOGY

THE eleventh volume of the Hampson catalogue of moths has been issued by the British Museum.<sup>1</sup> It deals with four groups—Ente-

<sup>1</sup> "Catalogue of the Lepidoptera Phalaenæ in the British Museum," Vol. XI., pp. 689, text figs. 175, pls. CLXXIV–CXCI., 1912.