

that any map can be an accurate, faithful picture of the country it represents," that the topographer must be able to generalize through his knowledge of geological processes of origin, and that he should be able to decide, "where details are omitted, what to put in their places in order to bring out the dominant features." These are dangerous doctrines. The earth exists, the duty of the topographer is to map it truly, and the study of the origin of its features should come later. It is not a function of the surveyor to interpret nature, and the geologic discussions of Chapter V. seem out of their proper place in a manual of topography.

The book does good service in dwelling upon the important idea that a topographic survey must necessarily be based upon a triangulation, so that an effective control of accuracy may be everywhere at hand. This is set forth with clearness as a sound established principle.

It is difficult to understand why one government bureau should republish tables issued by other bureaus unless they be out of print or not easily accessible. Pages 163-174 and 190-224 give the well-known geodetic and astronomical tables issued by the Coast and Geodetic Survey, and others are taken from the publications of the Corps of Engineers. Of the 168 pages of tables only 24 appear to have been prepared by the Geological Survey. Table XI., for the reduction of stadia readings, gives merely differences of altitude, the reduction to the horizontal being only mentioned in the four lines of text on page 93, where it is said 'tables for this reduction are to be found in Bulletin.' We know, however, of no author of this name who has published stadia tables.

Still more difficult is it to understand why a government bureau should republish a set of logarithmic tables prepared by a foreign author, thus committing a moral if

not a legal piracy. Pages 232-298 constitute a reprint of the well-known five-place tables of F. G. Gauss, which are for sale in all bookstores. If the slightest improvement in type or method of arrangement had been introduced some excuse might be seen for this procedure, but as a matter of fact the type employed is far inferior to the original, while the black rules between the columns will prove an injury to the eyes of all who make use of the tables. Moreover, the marks indicating whether the last decimal figures have been increased or not are in all cases omitted; the reprint is thus rendered a most unsatisfactory counterfeit of the excellent original.

This Manual of Topographic Methods is offered for sale by the Geological Survey at one dollar per copy. It is an advantage for many persons to be able to buy a government publication, instead of attempting to beg it through a member of Congress, but in this case it is to be regretted that the value of the contents is so much less than the price demanded. As a presentation of actual field methods, as a manual for the instruction of the employees of the Geological Survey, and as a contribution to science, this volume occupies a low plane compared to what should be expected from a bureau that has done and is doing topographic work of high excellence.

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Degeneration. By MAX NORDAU. New York, D. Appleton & Co. 1895. 8vo. Pp. 560 + xiii. Price, \$3.50.

This is an English translation from the second edition of the original German, the first edition of which was published in 1893, and a French translation of which appeared in 1894.

The author is a pupil of Lombroso, to whom he dedicates his work, and he states that its object is to apply the methods em-

ployed by the modern Italian school in the study of weak, imperfect, degenerate men as found among the criminal and mentally disordered classes, to the identification of degenerates among modern authors and artists. Such degenerates, he declares, manifest the same mental characteristics, and, for the most part, the same somatic features, as do criminals, prostitutes and lunatics.

The physical characteristics, or 'stigmata,' as they are called, of degeneracy in man consist of various malformations which have been described and classified by Morel, Lombroso and others, and which are relied upon to some extent in the diagnosis of doubtful cases of insanity, especially in criminals.

The mental stigmata of degeneracy are also, in many respects, well known, and consist in mental asymmetry, more or less lack of the sense of morality, excessive emotionalism, or its converse, *i. e.*, abnormal apathy and sluggishness, morbid despondency, incapacity for continued attention, and lack of will power, tendency to rambling revery, mysticism, intense egotism, abnormal sexual instincts, etc.

Nordau distinguishes between the hysterical and the degenerate, applying the former term to the admirers and followers of the latter. In his sense there are quite as many hysterical males as females. He is not a physician, and his ideas of hysteria do not precisely correspond with those of the ordinary practitioner; he is a literary critic who has made a special study of morbid mental phenomena and attempts to apply this knowledge to the elucidation of the characteristics of certain forms of modern art and literature with which he is remarkably familiar. He takes up in succession the impressionists, the mystics, the Pre-Raphaelists, the symbolists and the decadents and æsthetes, discussing Ruskin, Holman, Hunt, Rossetti, Swinburne, Morris, Ver-

laine, Mallarmé, Tolstoi, Wagner, Péladan, Maeterlinck, Baudelaire, Oscar Wilde, Ibsen, Zola, Nietzsche and many others. The only illustration of degeneracy in a scientific man which he gives is Zöllner. His criticisms of these are by no means scientifically impartial; they are at times almost vituperative, but they are in the main just, and substantiated by his quotations, and his strong expressions of condemnation and disgust will in the majority of cases meet with sympathy on the part of an intelligent reader, even if he does find some of the adjectives too sweeping and unqualified.

The chief defect of his work considered from the scientific point of view is its want of logical order; it may almost be said to be composed of two different works, composed in two different moods, one of which was strongly pessimistic, the other more calm and impartial; the first an eloquent appeal to the emotions, the second addressed rather to the reason, and these two parts are so arranged and mixed that it is necessary to read the book from cover to cover and to rearrange and classify the matter in one's own mind, before one can be reasonably sure that he knows the views of the author, and this is the more necessary because the book has no index. For example, the first chapter entitled 'The Dusk of the Nations,' is an eloquent piece of pessimism, yet Nordau is by no means a pessimist; in fact, he considers pessimism as one of the stigmata of degeneration, and the reader after finishing the first chapter should next read the last two chapters, which relate to the prognosis and treatment of the disorder under discussion, in which chapters the author points out that the symptoms which he has described pertain mainly to the scum or froth and to the dregs of population, that the great mass of the people are sound, that the degenerates cannot maintain themselves in the struggle for existence, and that humanity as a whole is

not yet senile. A degenerate organism can transmit to its offspring the morbid peculiarities, but, as a rule, the stock soon dies out.

In like manner, mysticism is treated with considerable detail as a pathological phenomenon, without a hint that it is ever anything else, and it is only in a succeeding chapter that we are told that "Mysticism is the habitual condition of the human race, and in no way an eccentric disposition of mind," and that the difference between what may be termed normal and pathological mysticism is that "the healthy man is in a condition to obtain sharply defined presentations from his own immediate perceptions, and to comprehend their real connection. The mystic, on the contrary, mixes his ambiguous, cloudy, half-formed liminal representations with his immediate perceptions, which are thereby disturbed and obscured."

In his fourth chapter the author discusses the causes of the disorder, summing them up as alcohol and tobacco, the growth of cities, and excessive fatigue due to the great increase in the number of sense impressions, perceptions and motor impulses which are experienced in a given unit of time. His argument from the supposed increase of insanity has no sound basis, for there is no good evidence that it has increased, and on this point the recent report of the General Board of Commissioners in Lunacy for Scotland is very satisfactory. The argument that the present generation is aging much more rapidly than the preceding one because there are more deaths from heart disease, apoplexy, etc., now than formerly is also fallacious. Deaths from all the causes which chiefly affect persons over fifty years of age are becoming more frequent, because the proportion of persons over fifty years of age is becoming larger, and the death rates of children are becoming smaller.

His therapeutics are not very definite,

being mainly the promotion of education, the condemnation of works trading on unchastity, and the branding of the pornographer with infamy. This is rather the treatment of a symptom than of the disease itself.

The real problem of dealing with the degenerate, and of checking their increase, is no doubt mainly connected with the conditions of city life and the increasing use of mechanism, and is to be solved by changes in municipal organization adapted to the new conditions of the day, combined with intelligent direction of the work of private associations of various kinds.

The work of Nordau should be carefully read by every one who is interested in social progress; the translation is excellent, and it is a book well calculated to make one think. His dogmatic statements as to the mechanism of nerve cells in mental phenomena are, for the most part, pure hypotheses based on materialism and taking no account of the persistence of individual consciousness, but they are in many ways suggestive and interesting; and while one must object to some of his premises, his conclusions with regard to the majority of the authors whom he discusses will probably be accepted by the majority of persons who are competent to form a definite opinion on the subject.

J. S. BILLINGS.

Darwinism and Race Progress. By JOHN BERRY HAYCRAFT, M. D., D. Sc., F. R. S. E., Professor of Physiology, University College, Cardiff. London, Swan, Sonnenschein & Co. New York, Charles Scribner's Sons. 1895.

This is an eminently sensible book, and besides its scientific interest it deserves the study of social reformers and religious teachers. Dr. Haycraft holds that the muscles and brains of a race are not bound to decay, but that the human species in