

sense of something yet lacking for the complete solution of the question. It is not clear why epistasis and metakinesis may not well be regarded as particular cases of orthogenesis as Professor Jaekel defines that factor, and, if amphimixis have no place or part in the production of the orthogenetic progress, what is its source and maintenance? The paper, however, is full of interest, the ideas being clearly and forcibly expressed, and accompanied by a wealth of illustration drawn from sources unfamiliar to the majority of biologists.

The second paper, that of Professor von Wettstein, is a relapse into the old discussion, since it takes as its thesis the combined action of the Darwinian and Lamarckian factors in the origin of species. It can not be said, however, that the evidence adduced by the author from the botanical field in favor of Lamarckianism is more apt to carry conviction to the minds of Selectionists than much that has already been presented. The fact, for instance, that an asporogenous variety of yeast, produced by exposure to an abnormally high temperature, does not again become sporogenous when grown at a normal temperature, will not be regarded by Selectionists as proof of the Lamarckian position, since they recognize the inheritance of acquired characters, if so they may be called, in unicellular organisms. Nor will the gradual assumption of the peculiarities of Hungarian wheats by foreign varieties grown in that country prove to them a stumbling-block, since such changes may plausibly be explained as the results of the direct action of the environment upon the germ plasm and through it upon the somatic cells. The author, in fact, fails to take into account the fundamental idea of the Selectionist standpoint, namely, the isolation of the germ plasm, and, like many of his predecessors, assigns to the term 'acquired characters' a meaning very different from that which it possesses for a Selectionist.

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Municipal Engineering and Sanitation. By M. N. BAKER. New York, The Macmillan Company. 1902. 12mo. Pp. 317. \$1.25. In the Citizen's Library.

The phenomenal growth of cities which has been so characteristic a feature of the last two decades has brought us face to face with many new and important problems. It sometimes seems as if these problems were increasing faster than the abilities of our cities to solve them; but to students of sociology it is an encouraging sign of the times to note the interest which is being rapidly awakened in municipal affairs among local organizations such as boards of trade, village improvement societies, women's clubs, as well as among individuals. It leads one to hope that in the not distant future the '*age of the politician*' may be succeeded by the '*age of the good citizen*'. To all who are interested in municipal affairs, especially in those matters which relate to the control of the forces of nature, Mr. Baker's book on '*Municipal Engineering and Sanitation*' can be heartily recommended. It is a review of the whole field, and touches the vital points of many classes of activity. It describes the underlying principles of all, but does not pretend to give detailed information about any one. The subjects treated are grouped under five heads, as follows: '*Ways and Means of Communication*'; '*Municipal Supplies*'; '*Collection and Disposal of Wastes*'; '*Protection of Life, Health and Property*'; '*Administration, Finance and Public Policy*.' The forty-three chapters of the book relate to streets and pavements, bridges, ferries, docks, telephones; water, ice, milk, markets, lighting and heating; sewerage, street-cleaning, garbage disposal, cemeteries; fire protection, smoke abatement, public baths, dwellings, parks; city charters, contracts, franchises, municipal ownership, taxation, uniform statistics, etc. These subjects are treated concisely, and a hasty reading of the book might lead one to think that they were treated too concisely, that the book was, in fact, a mere explanatory catalogue of unsolved municipal problems. This opinion would be far from the truth. Embellishments of rhetoric and extended illustrations are not to be found, but all the essential facts are there and where no facts are obtainable no attempt is made to conceal it by indulging in generalities. The book

is to be commended almost as much for what it omits as for what it includes. It shows evidence of accurate knowledge and careful preparation, as might be expected from the pen of the associate editor of the *Engineering News*. Several chapters were written by the author's wife, Mrs. Ella Babbitt Baker, and these are among the most interesting in the book. The book gives comparatively few references, a fault for which the author atones by referring to Robert C. Brook's 'Bibliography of Municipal Problems and City Conditions' (New York, 1901).

A comparison of the title of the book with its table of contents shows to what wide limits the scope of the 'engineer' has extended. 'Municipal housekeeping' is a term which has been applied not inappropriately to certain groups of activities, but 'municipal engineering' is much nearer the truth. Whenever forces are to be controlled and materials handled on a large scale, there the engineer is to the fore. So in our growing cities activities that once were domestic or individual have become engineering in their nature and must be entrusted to technical men. The author well says: 'Happily the day is coming when permanent and well-paid technical men will be put in charge of all technical work, and the most experienced specialists of the country will be called in to aid in the construction and testing of all public works and to advise from time to time regarding the best mode of operation.'

American Municipal Progress—Chapters in Municipal Sociology. By CHARLES ZUEBLIN. New York, The Macmillan Company. 1902. 12mo. Pp. 380. \$1.25. In the Citizen's Library.

The author begins his introductory chapter in the good old German way by defining his terms. He draws a distinction between the 'urban district,' 'city' and 'municipality'; the first having 'a psychological and industrial unity,' the second, 'a legal and topographical unity,' and the third 'a functional unity.' He considers the municipality as the organization for supplying communal needs, and defines 'municipal sociology' as the sci-

ence which 'investigates the means of satisfying communal wants through public activity.' Illustrations of these definitions then follow.

The work is divided into chapters which treat respectively of 'Municipal Sociology'; 'Transportation'; 'Public Works'; 'Sanitation'; 'Schools'; 'Libraries'; 'Public Buildings'; 'Parks'; 'Public Recreation'; 'Public Control, Ownership and Operation.' It is written in a discursive style, and the principles set forth are sometimes obscured by an overabundance of illustration. It is in these illustrations, however, that the work is chiefly valuable. The author, who is professor of sociology in the University of Chicago, evidently has at hand an extensive collection of data from the chief cities of America upon all phases of municipal work, and the comparisons which he makes between the different cities are most instructive. It is interesting to observe the different directions in which engineering effort has been bent in different cities. One city, for example, excels in its parks, another in its streets, another in its schools, another in its water supply, etc. The book gives the impression of being written by one who has studied the work of others rather than by one who has taken part in it himself. It is somewhat inclined to be theoretical rather than practical. For instance, the author still clings to the idea that the cost of sewage disposal may be met by separating the solid matter 'through familiar processes' and selling it as a fertilizing material, while sanitary engineers agree that this is, at present at least, impractical. The last chapter, on 'Political Control, Ownership and Operation,' is perhaps the most valuable one in the book. It shows the modern tendency towards public absorption of municipal functions, an evolution towards socialism which the author manifestly approves. The work concludes with numerous appendices giving interesting statistics for various American cities, and digests of laws affecting schools, child labor, etc. G. C. WHIPPLE.

A Text-book of Quantitative Chemical Analysis. By FRANK JULIAN. St. Paul, Minn., The Ramsey Publishing Company. 1902. 8vo. Pp. 604. Illustrated. \$6.00.