mosquito pest, though that is not especially mentioned in the published list of objects. It is remarkable that, besides expending many thousands of dollars to attain that end, they should also publish their results at an expenditure of hundreds more, for the benefit of others contemplating similar improvements.

'Reports' contained in the volume are made by the Executive Committee; by their engineer, Mr. Henry Clay Weeks; by Professor N. S. Shaler, of Harvard University; by Professor Charles B. Davenport, of the University of Chicago, and by Mr. Frank B. Lutz, of the same place.

Professor Shaler deals chiefly with the matter of salt marshes, their value when reclaimed, the methods of reclamation and the crops that may be planted on such areas. The paper is an interesting one, general in its scope, without pretense to novelty, but informing in character.

Professor Davenport and Mr. Lutz, each with an assistant, report on the entomological work done, which consisted mainly of a thorough survey of the territory covered by the association, and the determination of the breeding places for mosquitoes of all kinds. *Culex* and *Anopheles* are nearly always lumped and specific terms rarely appear. There is nothing, therefore, to determine what species actually occur and what species are actually troublesome. The usual generalized life histories are given and the usual recommendations applied to the specific conditions are made. No original investigations seem to have been carried on and no novelty is claimed; the report is informing in its general character, and is a model of thoroughness within its scope. It is to be regretted that, especially in *Culex*, the species found breeding in the various localities are not determined. It is by no means certain that for practical purposes all mosquitoes should come under an equal ban, and nothing in the report shows whether the mosquitoes so often referred to were such as were breeding in the waters near by, where larvæ were found.

The report of the engineer is supplemented by an elaborate map on a scale sufficient to admit of the marking of all points where treatment is necessary or where engineering work is required. It is confined to the local problem and no generalizations are attempted.

Altogether the 'Reports' show a well-organized effort, intelligently carried out, which is bound to secure the desired results in due time. It may be a question whether the results could not have been obtained by a somewhat less elaborate and expensive organization; and it may be that the staff employed by its very excellence and the expense incurred may deter rather than encourage smaller or less wealthy bodies from embarking in similar works.

To secure general cooperation in the campaign against mosquitoes the methods must be of the simplest and cheapest that will prove effective. But on this latter point the 'Reports' deserve unqualified praise for the stand taken, that destruction of breeding places, not the never-ending destruction of larvæ, should be aimed at; that permanent works rather than merely palliative measures should be the aim of the asssociation.

JOHN B. SMITH.

NEW BRUNSWICK, N. J.,
June 12, 1902.

Researches on Cellulose, 1895–1900. By CROSS & BEVAN. London, New York and Bombay, Longmans, Green and Co. 1901. 8vo. Pp. 180.

The first work on cellulose by these authors, published in 1895, was an attempt to bring together into convenient shape, and, as far as possible, into logical arrangement, the scattered and largely unclassified knowledge on this important subject. That they made an excellent beginning in bringing order out of chaos few investigators familiar with the subject will deny. The first work has been and is of decided value both to the scientific and the industrial worker. The present volume reviews the researches on cellulose from 1895 to 1900. The matter is arranged under the following sections: Introduction, dealing with the subject in general outline; Section I., 'General Chemistry of the Typical Cotton Cellulose'; Section II., 'Synthetical Derivatives—Sulphocarbonates and Esters'; Section III., 'Decompositions of Cellulose such as

throw Light on the Problem of its Constitution'; Section IV., 'Cellulose Groups, including Hemicelluloses and Tissue Constituents of Fungi'; Section V., 'Furfuroids, *i. e.*, Pentosanes and Furfural-yielding Constituents Generally'; Section VI., 'The Lignocelluloses'; Section VII., 'Pectic Group'; Section VIII., 'Industrial and Technical; General Review'; Index of authors; Index of subjects.

The authors should be highly commended for their appreciation and treatment of the practical industrial problems connected with cellulose. Pure science is not lowered in the estimation of most men because it may have practical bearings, and it is almost needless to say that some of the greatest advancements in scientific knowledge have been brought about by men who had an eye for the practical as well as the scientific side of investigations. The subject is developing rapidly at the present time from both the scientific and the practical side, and it certainly offers an inviting field for students of chemistry who wish to make their work count for something in the commercial as well as the scientific world.

A. F. Woods.

SCIENTIFIC JOURNALS AND ARTICLES.

The *Journal of Comparative Neurology* for June contains the following articles: (1) 'Number and Size of the Spinal Ganglion Cells and Dorsal Root Fibers in the White Rat at Different Ages,' by S. Hatai. The number of spinal ganglion cells does not change with age, though some small cells become large cells and the number of dorsal root fibers increases. (2) 'Observations on the Medulla Spinalis of the Elephant with some Comparative Studies of the Intumescentia Cervicalis and the Neurones of the Columna Anterior,' by I. Hardesty. In addition to the histological examination of the elephant, there is a similar study of the spinal cords of a series of twelve mammals of diminishing body weights, with statistics of the ratios to body weights of the dimensions of the spinal cord and ventral horn cells. (3) 'Observations on the Post-mortem Absorption of Water by the Spinal Cord of the Frog,' by H. H. Donaldson and Daniel M. Schoemaker. There is a post-mortem absorption of water by the spinal cord of *Rana virescens* amounting sometimes in 24 hours to 25 per cent. of the normal weight of the cord. The conditions under which this absorption takes place were experimentally studied. (4) 'Observations on the Developing Neurones of the Cerebral Cortex of Fœtal Cats,' by S. Hatai. Confirms Paton's observation that the dendrites develop before the neurites or axones. The usual literary notices complete the number.

The contents of the *American Journal of Mathematics* for July, 1902, are as follows:

'Die Typen der linearen Complexe elliptischer Curven im R_r,' von S. Kantor; 'Generalization of the Differentiation Process,' by Robert E. Moritz; 'Simple Pairs of Parallel W-Surfaces,' by Henry Dallas Thompson.

SOCIETIES AND ACADEMIES.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

We have received preliminary lists of the papers to be presented before three sections of the Pittsburg meeting of the American Association for the Advancement of Science, as follows:

SECTION C AND THE AMERICAN CHEMICAL SOCIETY.

Tuesday, July 1, 1902.

'Valence': Ira Remsen.

'The Ozone from Potassium Chlorate': Edward Hart.

'Electric Combustion': Edward Hart.

'The Chlorides of Ruthenium': Jas. Lewis Howe.

'Electrolytic Deoxidation of Potassium Chlorate': Wilder D. Bancroft.

'The Solid Phases in Certain Alloys': Wilder D. Bancroft.

'An Improved Grinder for Analysis of Motherbeets': David L. Davoll, Jr.

'The Electrical Conductivity and Freezing Points of Aqueous Solutions of Certain Metallic Salts of Tartaric, Malic and Succinic Acids': O. F. Tower.

'Recent Progress in the Fireproofing Treatment of Wood': Saml. P. Sadtler.

'Ionic Velocities in Liquid Ammonia Solutions': E. C. Franklin.