science are either historians or economists, and what is not economics is history. This failure of the other social sciences to develop a theory corresponding to economics has given to sociology its opportunity. Both economics and history will be benefited by a new science including the theoretic elements outside of economics and foreign to history. History cannot become theory without losing its intrinsic qualities, nor can economics absorb social theories without losing its purity and method. The only solution of the difficulty lies in a new theoretic science doing for other portions of social science what economics has done in its field. Economics would then remain a study of the environment and of the simple motives upon which conscious calculation depends. Sociology would give us a theory of human impulses, tradition, imitation and other forms of activity outside of conscious calculation.

There is at present no good word to designate the field outside of utilitarian calculation, and this fact prevents us from seeing its extent and importance. To it our institutions, national life and party feelings belong, as do also the moral, religious and æsthetic ideals of the race and the customs and habits of individuals. These are means of eliminating conscious calculation and through them the promptness, efficiency and regularity of actions are increased. For want of a better term, I am inclined to call all these extra economic elements the *socialry* of the race. I would use this term in so broad a sense as to include every device or habit or motive by which men are united and their activities harmonized. Together they make up a subjective environment which influences the conduct of men fully as much as does the physical environment upon which the economic motives depend. This socialry of men is the subject-matter of sociology, just as their goods are the subject-matter of economics. The latter science treats of the conscious economies due to the simple reactions between the environment of men and their desires; the former treats of the unconscious economies due to heredity and to the psychologic motives which it creates. The two theories supplement one another and when properly harmonized with history would complete the social sciences.

The distinctive merit of Professor Giddings' work is that it is neither economics nor history. It might be denied that he has created a science, but not that he has found a new field and devoted his energies to its exploitation. Too much of the so-called sociology is really disguised economics and elementary biology. The economist recognizes old friends when the sociologist talks of the sustaining system, the circulatory system and the stratification of society. The restatement of old doctrines and ideas may revolutionize a science, but it does not create a new one.

The chapters on Social Population and on the Social Constitution are among the best in the book. It is here that the method of Prof. Giddings shows itself to the best advantage. The problems of anthropology and ethnology are also fully and ably handled. Of the other parts I like best of all the discussion of tradition and of social choices; on these topics he shows the greatest originality. I have not the space to take up these or other doctrines in detail, nor would such work be of much value. A useful book must be read to be understood. A critic can point out merely wherein its value lies and save the student from the heavy burden of reading everything. In this book much more stress is laid on the harmonious relation of the various parts than on particular discussions. Its aim is to interest people in a new science, and in this its success lies. SIMON N. PATTEN.

UNIVERSITY OF PENNSYLVANIA.

Water Supply (considered principally from a sanitary standpoint). By WILLIAM P. MASON, Professor of Chemistry, Rensselaer Polytechnic Institute. New York, John Wiley & Sons. 1896. 504 pp., 8vo.

The subject of the water supply of communities has always been an interesting one, and it has been known for more than two thousand years that the character and amount of sickness and death in a town or city is at times greatly influenced by the quantity and quality of the drinking water of its inhabitants; but it has only been within the present century that any precise and definite information upon this subject has been obtained.

Cholera and typhoid fever epidemics due to a

water supply contaminated with the discharge of a person suffering from one of these diseases have now been observed and recorded in sufficient number, and with enough accuracy, to have convinced both scientific men and the public that this is the most common cause of great outbreaks of these diseases, and that the spread of the specific bacteria which produce them is the means by which such impure waters produce their destructive results. The work of Professor Mason presents abundant evidence of this in the form of statistics of different cities, and of records of individual outbreaks, and gives a fair summary of existing methods of testing and of purifying water supplies. In the chemical part of the book the writer gives his own experience in water analysis, and the directions are clear, concise and well up to date. He confirms Dr. Smart's remarks as to the importance of the rate of evolution of the so-called albuminoid ammonia, in the distillation process, but it is curious that no allusion is made to the fact that the prolonged giving off of albuminoid ammonia indicates, in many cases, the presence of urea, and, therefore, of sewage, in the water.

The chapter on the artificial purification of water is a good summary for the general reader, but it is not made as clear as it should be that, in large sand filtration plants, no single filter bed should exceed a certain size, say one acre, and that the effluent from each filter bed should be tested bacteriologically at least once a week, and in many cases once a day. In other words, a small bacteriological laboratory and the services of a skilled bacteriologist are essential features of such a system of filtration.

Among other epidemics of typhoid fever described is the well known one at Lausen, in which the infected water passed through the base of a mountain, and such passage was demonstrated by adding salt to the water. Flour was also added, and did not pass through, but it is doubtful whether this is a satisfactory proof that the water was really '*filtered*' in its passage.

Taking it altogether this is decidedly the best book on water supplies that has yet been produced for American readers and as such it is cordially commended.

SCIENTIFIC JOURNALS.

PSYCHE, MAY.

THE leading article by Prof. V. L. Kellogg gives a general account of the Mallophaga, with a key to the genera. W. S. Blatchley continues his account of the winter Coleoptera of Vigo Co,, Ill., and Mr. A. P. Morse his notes on N. E. Tryxalinæ. J. W. Folsom examines the types of Packard's *Papirius texensis*, and finds two species among them, one a Papirius, the other a new species of Smynthurus, which he describes. H. G. Dyar describes the larva of *Cautethia grotei*. T. D. A. Cockerell reviews Dalla Torre's recent catalogue of bees, and F. C. Bowditch gives some notes on the habits of two beetles. Miscellaneous notes complete the number.

THE PSYCHOLOGICAL REVIEW.

THE articles in the May number are researches from the psychological laboratories of Chicago, Harvard and Wisconsin. From Chicago, Prof. Angell and Dr. Moore report on reaction-time experiments in which the attention was alternately concentrated on the attention and on the movement, the stimulus being a sound or a light, and the movement being made with the hand, foot or lips. The reaction-times were on the whole shorter when the alteration was motor, but not to the extent nor with the regularity claimed by the Leipzig experimenters, and the distinction tends to be obliterated or reduced by practice. The authors discuss their results in their relation to attention and habit. In a second research from Chicago, Mr. L. G. Whitehead communicates experiments on visual and aural memory which show that of the thirteen observors tested, ten were able to memorize more rapidly when the series was seen and two when it was heard, while in one case the result was doubtful. Matter memorized aurally appeared to be retained slightly better than that memorized visually.

Dr. Edgar Pierce, now of the University of Michigan, publishes experiments carried out in the Harvard laboratory on the æsthetics of simple forms with special reference to eye movements. He determined the preferences of different observers for figures in different positions,