measures are promptly taken to remove them, the disease will be less likely to attack a community so prepared, and, if attacked, such a community will be better able to cope with the disease and to reduce its ravages to a minimum.

PUBLIC HEALTH ASSOCIATION. — The American Public Health Association will hold its fifteenth annual meeting at Memphis, Tenn., on Nov. 8, 9, 10, and 11. The following topics have been selected by the executive committee for consideration at the meeting: 1. The pollution of water-supplies; 2. The disposal of refuse matter of cities; 3. The disposal of refuse matter of villages, summer-resorts, and isolated tenements; 4. Animal diseases dangerous to man. The president, Dr. George M. Sternberg, will in his address refer to the results of his investigation of yellow-fever in Brazil and Mexico. In view of the possible existence of this disease at Tampa, Fla., referred to elsewhere, this subject will be of absorbing interest. The committee on disinfectants will present a report embodying the researches and experimental work of that committee during the past year. Clergymen, teachers, engineers, architects, builders, and all interested in the practical work of the association, are cordially invited to be present.

EXPLORATION AND TRAVEL.

Manchuria.

IN *Science* of May 6, 1887, we mentioned the journey of three enterprising Englishmen through Manchuria. In a lecture delivered before the Royal Geographical Society of London, Mr. James, one of the travellers, gave a sketch of the country they traversed, from which we take the following notes: The most interesting part of the journey was that in the Chang Pai Shan (the 'Long White Mountains'). These were supposed to be more than 10,000 feet high, but the measurements of the travellers show that the loftiest peak is not more than 8,025 feet high. They are supposed to be sacred to the ancestors of the reigning dynasty of China, and it is sacrilege to trespass on them. Nevertheless the country has been rapidly settled in recent times. The colonists have formed themselves into associations or guilds for protecting their life and property against robbers, who infest all parts of Manchuria; and in this they have been so successful that their territory is the only one enjoying perfect security. Here the travellers learned that the highest peak of the mountains is the Lao Pai Shan (or 'Old White Mountain'). The road to this point led through thick forests and over bogs which were absolutely impassable for any beast of burden whatsoever: therefore they had to leave their mules behind, and continue their march by foot. The peak rises from a grassy plateau dotted with trees, through which subterranean streams make their way. The ascent to the summit was not very difficult; and here a crater 350 feet deep was found, at the bottom of which there was a beautiful blue lake, from which, according to the legend, the Manchu race sprang. The white color of the mountain is due to the color of the disintegrated pumice of which it consists. The principal rivers of Manchuria have their source in the Chang Pai Shan.

THE WELLE.—We may expect that the problem of the Welle, which has baffled geographers for a long time, will soon be solved. *Le Mouvement Geographique* says that the government of the Kongo Free State has charged Captain Van Gèle with the exploration of this river. The results of Van Gèle's ascent of the Obangi in the 'Henry Reed' are shown in the sketch-map in *Science*, No. 233. As the rapids of this river hindered his further progress, another route had to be adopted, and Van Gèle has decided to take that of the Itimbiri (Lubi). The sketch-map shows that the rapids of the Lubi are only about thirty miles distant from the Welle, and that Junker's Alikobo, the most western point reached by him, is only a few days' march from that point. Van Gèle's expedition started on July 1, in the 'Henry Reed' and 'A. I. A.,' to ascend the Lubi, and proposed to cross the country in a north-westerly direction. Having reached the Welle, he intended to follow it to its mouth, and thus to ascertain whether it is identical with the Obangi or not.

DELAGOA BAY.— Consul H. E. O'Neill gives some interesting information on the state of affairs in Delagoa Bay in the August number of the Proceedings of the Royal Geographical Society. As two important routes to the mining districts of Transvaal start from Delagoa Bay, the latter place has gained considerable importance. Though it belongs to the Portuguese, British trade is rapidly extending over this part of the coast. Upon the roads from Lorenço Marques, which is situated on Delagoa Bay, to the interior, Englishmen are establishing themselves, and begin to monopolize the trade with the Swazi country. Over the inner frontier English gold-diggers are advancing into Portuguese territory, and many claims have already been registered in the secretariat of the government of Lorenço Marques. The natives form one of the chief channels for the spread of English influences throughout this district. They work for a number of years in the English colonies, and then return with what money they have earned. Thus English money has become the currency of the country. The Portuguese are working on a railway from Lorenço Marques to Barberton; but the work is advancing very slowly, and it will probably be a long time before it will be completed. Delagoa Bay is the first point at which actual contact has taken place between the British and Portuguese in South Africa; and it will be interesting to see how the latter, who have confined themselves for more than three centuries to the shores of the bay, will resist, or adapt themselves to, the vigorous life that characterizes the former.

THE SAMOA ISLANDS. — It will be remembered that in 1886 the United States, England, and Germany sent special commissioners to the Samoa Islands in order to settle the troubles that had arisen from the lively competition of these nations. It was proposed to submit the report of this commission to a conference. The Samoan troubles date from the attempt of the German Government to grant a subvention to a German firm which had plantations in Samoa. At that time the Americans, particularly Colonel Steinberger, made strenuous efforts to give a firm basis to the American influence on the islands, and made a treaty with King Malietoa. The Germans made a treaty with the same king in 1884, while the British consul tried to bring about an annexation of the islands by the colony of New Zealand. In course of time King Malietoa began to favor the Americans, and therefore the Germans supported his adversary, Tamasese. A short time ago the Germans, while the work of the commissioners was still going on, sent four men-of-war to Apia in order to demand compensation for certain plunderings. As Malietoa refused to pay, five hundred men were landed, and Tamasese was declared king of Samoa. Malietoa, who first intended to resist, followed the advice of the American and British consul, and submitted. It has been said that it is proposed to divide the islands among the three powers, but this seems improbable. The islands are at the present time of great importance, but this will be still more the case when the canal through the American isthmus is open, as they form an important station between Australia and America.

BOOK-REVIEWS.

The Social Question. BY J. H. OERTER. New York, E. Glaeser.

DR. OERTER has produced a small volume on the social question, which is all the more interesting because it is from the hand of a theologian. It does not derive any special authority from this fact, but it is indicative of what that profession is beginning to realize in its capacity of public teaching. It signifies the ultimate, although perhaps gradual, emancipation from traditional speculations that have no relation to the present sphere of human conduct and duty. Theological speculation, like poetry, may have a place in our fancies and ideals; it may even exercise a very wholesome influence in stimulating thought and action upon higher planes: but it must not set itself up for fact, nor ignore the existence of facts. No class of teachers needs a knowledge of social questions, facts, and forces more than the ministry, and we are glad to know that the number is increasing of those who find time and interest for studies vital to the moral growth of the future. Dr. Oerter's book is one of a number which enable us to measure the possibilities of the ministerial profession in forwarding the cool consideration of scientific facts. Dr. Strong's 'Our Country,' although a missionary appeal, and Heber Newton's 'Study of Social Questions.' form a kind of companion issue with this in point of general thought. They are not large and thorough treatises from men who have

nothing else to do, but they show a very healthy development among a body of men who can more than hold the balance of moral and social power in the world, if only they have the knowledge on the one hand, and the courage on the other, to improve their opportunities.

Christianity in its inception was a moral and social reform, and not a body of dogmatic and traditional beliefs about either the past or the future. The foremost of the ministry are beginning to see this, and to return to the original conception of it, by what one author candidly though forcibly admits to be "in one sense a *backward* movement." Much is to be hoped for in this tendency, and it is worth recording here as a generous welcome to those who can appreciate the force and value of scientific truth, abandon their diatribes against science, and fall into line with the inevitable course of history, which usually has an optimistic outcome, unless nature has to avenge itself for the systematic pursuit of error and wrong.

The volume under notice consists of the 'Vedder Lectures' at New Brunswick Theological Seminary; and the keynote to the discussion is well expressed in the reason assigned for the present revolutionary tendencies, that "the actual inequality of possessions is regarded by the great mass as standing in direct opposition to the generally acknowledged equality of the individual rights of all men." In former times men did not have their equality or their rights admitted, and hence neither arguments nor force could avail to defend them. The author shows from Bockh that three-fourths of the population of Greece were excluded from the benefit and protection of the law; from Gibbon that one-half the population of Rome consisted of slaves, and that not more than 13.5 per cent of the population of Attica possessed real estate. The concentration of power which such a system required was enormous, and no wonder the liberation of the masses from its abuse is accompanied with alarming symptoms. But it is a pleasure to see the ministry recognizing the scientific methods of studying such facts, and not relying upon their speculations about baptism, inspiration, and the trinity to regenerate society. The author wisely treats socialism, whether legitimate or not, as an effect, a phenomenon to be accounted for, something having a cause for its existence, and not to be gotten rid of until its causes were removed. True to his profession, the views of the Old and New Testaments upon property are briefly outlined and candidly handled; but he frankly admits that "any attempt to construe out of passages of the New Testament a specific Christian idea of *property*, will always fail." This is not to exclude ethical from all relation with economical questions. It is acknowledged that we must reckon with the selfish instincts of human nature in all schemes of social government, at least until those instincts are modified. The discussion of the principles of Ricardo and the so-called 'Manchester school' is fair; and more is sympathetically narrated of Proudhon, Fourier, Karl Marx, Lasalle, Louis Blanc, and the whole history of socialistic movements, than most men of theological propensities have the will to read. But there is no disposition to espouse the vagaries of those men, although their agitation and beliefs receive the acknowledgment of being scientific facts which have to be studied.

The solution of the problem is a very good chapter, as admitting the place of ethical considerations along with economical in deciding the issue of the question. Here the author has the opportunity for urging the Christian aspects of the case, which is done in a way quite foreign to the usual homiletic method. It is made a purely scientific question of ethics and political economy. We cannot agree with him, however, that the socialism which he condemns has its support in atheism, and must be destroyed by uprooting the latter. It is a re-action against the traditional method of solving social and moral problems. The age of authority is past, and nothing but facts with reasoned scientific truth based upon them can meet the exigencies of the case. Atheism has its evils, but it will be harder to overthrow this than the system of socialism.

Brief Institutes of General History. By E. BENJAMIN ANDREWS. Boston, Silver, Rogers, & Co. 12°.

WE do not remember having seen any book which is of so much service to the advanced student of general history as this. As a guide to *seminar* work in history, it would be of the greatest value. It is dedicated to Professor Todl of Breslau, whose 'Geschichte der Ethik' is well known to our students of philosophy; and there is no lack of congruity between the work itself and its dedication to a philosopher, for it is eminently philosophical, both in scope and in treatment. Professor Andrews calls his book a 'precipitate of general history,' and this describes it excellently. It is not an outline, and it is not a skeleton, but 'precipitate' seems to us a very happy designation.

The body of the work falls into eleven chapters, the first dealing with history and the study of history, and the last with Prussia and the New Empire. Each chapter is subdivided into short sections or paragraphs, and each of the latter is accompanied by bibliographical references of great minuteness and accuracy. In this way the student is enabled to hunt down any particular period or episode with great ease, and post himself fully before proceeding. Then each chapter is preceded by an elaborate and more general bibliography, the preparation of which shows wide reading and scholarly research.

The full value of Professor Andrews's volume cannot be appreciated by a cursory examination. We are sure that its excellence of arrangement and treatment will be seen best when it is in use. As a guide to the scientific study of history, or as a skeleton for *seminar* work, it is not surpassed by any book in the language.

Nystrom's Pocket-Book of Mechanics and Engineering. Revised by W. D. MARKS. Philadelphia, Lippincott. 24°.

AS the author remarked in his first preface, every engineer should make his own pocket-book, as he proceeds in study and practice, to suit his particular business. This work was accumulated in this way during the author's professional career, and was first placed before the public in 1854. The reviser has principally confined himself to corrections in the original text, but has added an elementary article on dynamic electricity, and also one on the expansion of steam; and in notes the reviser has taken occasion to express some differences of opinion, and has referred to the literature of topics which required more space than can be given to them in a pocket-book.

Elements of Analytical Mechanics. By PETER S. MICHIE. New York, Wiley. 8°.

THIS volume, as the preface states, is a revised edition of the text taught to the cadets of the United States Military Academy during the session of 1886–87. Together with a brief chapter on hydrodynamics, it is intended to comprise a four-months' course of instruction for students well versed in elementary mathematics. The subjects treated of, after the elementary chapters on matter, force, motion, the physical units, stresses and motive forces, and gravity, are those usually taken up in a treatise on this subject. The book closes with a theory of machines. The arrangement of the subject-matter, and method of treatment adopted, are such as have received the approval of several able scientific officers who have been associated with the author in the instruction of cadets.

On the Conversion of Heat into Work. By WILLIAM ANDERSON. New York, Van Nostrand. 12°.

THE Council of the Society of Arts invited the author of this work to deliver a course of lectures upon the conversion of heat into useful work; and these lectures, which form the basis of the present work, were delivered in the winter of 1884–85. The object of the lectures was to popularize the doctrine that in heat-engines the work given out is due to the conversion of the molecular motion of heat into the visible motion which it was desired to produce, and further to illustrate, by numerous practical examples, the applicability of the doctrine of Carnot to defining the limits within which improvement in the economical working of heat-engines was possible. In the hope of making the modern views with respect to the action of heat more real and practical, the author adopted the method of working out his investigations by means of numerical examples, and comparing the results with those obtained in actual practice. All those who are interested in the elementary instruction