

As one of the most important aims of the real teacher of history is to instruct his pupils in the use and making of historical works, so in geography one of the most important things is the teaching of the use and construction of maps. And it may be said, that to the student of history or of geography, to the traveller or military commander, the ability to read a map is next in importance to the ability to read a book. And it is something not easily acquired. It may be said that there can be no difficulty in distinguishing a river from a mountain. And very likely there is none; but such knowledge is no more map-reading than the distinguishing *a* from *x* is book-reading. Nor is map-making cartography. To some minds the two seem inseparable; and the student is required to draw a map with the nicety of a practised cartographer, under the pretence that he is learning geography. He is doing nothing of the kind. The ability to go out of doors and make a good working sketch of the surroundings of one's own school-house is of more value, geographically speaking, than the ability to construct, from sketches and details of survey, a map of Cape Cod with all the accuracy of a Swiss cartographer. No one confounds the art of writing and that of printing. Then why should he confound the describing geographical features with geographical symbols and reproducing the same with the greatest accuracy for permanent use? Geography is not cartography, nor is it topography, although both these elements combine in geography. Properly taught, map-drawing is the best guide to map-reading.

To sum up the aims of geographical education, or perhaps I should say its only aim, is to make men understand what is going on around them,—to converse intelligently upon the present crisis in Bulgaria, or the economic changes which will be wrought by the Panama canal, if it is ever opened; to travel abroad with some degree of satisfaction to one's self, and to one's readers if one writes a book; to read with interest and appreciation articles on campaigns, like those now appearing in the *Century*. For what information can a map, accurately drawn with contour-lines or hachures, convey to a man who does not know what those symbols mean? And, finally, the student of modern history who is not familiar with the geographical features of western Europe can gain only a very dim idea of what the everlasting changes of boundary really mean. The marked difference between the books now being produced by French, English, and American travellers, on the one hand, and German explorers, on the other, is too great to escape attention. That difference is due entirely to the fact that in school and uni-

versity the German is taught, in the first place, to see, and, in the second place, to understand what he does see. This power (for such knowledge is power) is fast pushing the German to the foremost place in war, in commerce, and in exploration. If he could also be taught to relate in clear and simple language what he thus has learned, it would be a positive gain to mankind.

EDWARD CHANNING.

AMERICAN SOCIETY FOR PSYCHICAL RESEARCH.

THE society held its annual meeting at the rooms of the Boston society of natural history on Jan. 11. The auditorium was crowded, it having been announced that there would be shown some 'apparent thought-transference' and some muscle-reading.

The thought-transference was performed by Dr. Minot, with the assistance of Mr. C. B. Cory, and was designed to show the character of the dangers arising from fraud introduced into experiments on mind-reading, similar to some of the experiments made by the committees of the English society for psychical research. The audience were at first not informed of the ultimate purpose of the experiments, and were for the most part entirely deceived, although many were suspicious. Several persons took a card, and, having fastened their attention upon the card, they approached Dr. Minot, who proceeded to draw it upon the blackboard without having seen the card. There were two failures, one of which was partial only, and two successes. Later in the evening Dr. Minot explained that the experiments were fraudulent, and had depended upon Mr. Cory's skill in card-forcing, so that the persons had not really chosen their cards, but had taken them from Mr. Cory. It had been arranged in what order the cards should be given, so that every one was known to the *mind-reader*, and his failure-drawings were intentional blinds. The signals used to indicate what person was coming were also described. Dr. Minot then added a few words, which made clear the lesson intended; namely, that in many of the English experiments, which offer the only evidence worth heeding, of thought-transference, there existed evident opportunities for fraud, and that therefore the experiments in question are inconclusive. He expressed his unwillingness to believe in thought-transference in consequence of the evidence yet presented, and his hope that the amusing demonstration made by Mr. Cory and himself would serve the serious and grateful purpose of emphasizing the dangers of credulity in these matters.

Entirely straightforward were the very admirable performances in muscle-reading by Mr. Charles H. Montague, a gentleman who, in the course of a few weeks' practice, has acquired an extreme skill. He first repeated a mock murder, similar to the repetition recently achieved by Bishop and noticed in our columns (*Science*, viii. p. 506). He then accomplished another feat, that of reconstituting a tableau, which had been arranged by Prof. W. T. Sedgwick while Mr. Montague was out of the room. When he returned, he took hold of Professor Sedgwick's hand, and quickly found the persons and objects, and placed them in the proper positions quite exactly. All of this was done by muscle-reading; and, in reply to a question from one of the audience, Mr. Montague said that mind-reading had nothing to do with his obtaining the requisite information from the subject.

The various committees made brief reports of progress, that of the committee on apparitions being the most interesting, several remarkable cases being read by Professor Royce, who closed his suggestive remarks by stating that the committee was desirous of accumulating a much more extensive material.

The chairman, Dr. Bowditch, called attention to the fact that the society, in order to employ a qualified secretary and meet the expenses of its work, requires at least two thousand dollars, about half of which has already been raised. Under these circumstances, the council had regarded it as safe to engage the service of Mr. Hodgson, who had agreed to come. Mr. Hodgson is well known by his thorough exposure of the Indian theosophical society and the frauds of Madame Blavatsky. The society has hitherto been at a disadvantage, because its leading members have been so pressed by professional duties that they have been able to give very little time to the active work of the committees. But, if the funds which the society asks for are secured, it will be enabled to prosecute its various researches into psychic phenomena with activity as well as zeal.

An appeal to all those interested in the objects of the society to help contribute to the balance of the required sum has been issued by the council, Henry P. Bowditch, Charles B. Cory, George S. Fullerton, Edward G. Gardiner, E. H. Hall, G. Stanley Hall, Charles C. Jackson, Joseph Jastrow, William James, Charles S. Minot, Simon Newcomb, E. C. Pickering, W. H. Pickering, James M. Peirce, Josiah Royce, Minot J. Savage, Samuel H. Scudder, Coleman Sellers, R. Pearsall Smith, William Watson. Subscriptions should be sent to C. C. Jackson, 24 Congress Street, Boston.

We trust that the society will expand its scope,

and turn to the solution of some of those problems of psychology which press on every side for solution. We are therefore glad to learn that a committee on experimental psychology has been appointed.

GOVERNMENT SCIENTIFIC WORK.

THE work upon the report of the Charleston earthquake, to be made by Captain Dutton of the U. S. geological survey, is progressing rapidly. The data collected are very voluminous, and of a character which is quite as satisfactory as could reasonably be expected. The number of separate reports, amounting to about twenty-five hundred, have been card-catalogued, and the plotting for isoseismals has begun. The data are less satisfactory than could be wished, although a few reports of the time of the passage of the earthquake shock in various parts of the country will be sufficiently accurate to determine the velocity of propagation of the earth-wave, and with a much smaller probability of error than in any other earthquakes previously reported. The final computations have not as yet been made, but sufficient is known to indicate with certainty a velocity somewhat in excess of three miles per second. The data relating to the epicentral localities and their immediate neighborhood are quite full, and it is expected they will prove instructive and suggestive. Captain Dutton is reluctant to speak very decisively about the final results, believing that any very specific statements would, for the present, be premature.

Prof. Raphael Pumpelly, chief of the division of archæan geology, who has been on the temporary roll of the U. S. geological survey, has been placed on the permanent roll, in consequence of the resignation of Mr. F. V. Hayden.

The question of successorship to General Hazen is being discussed. Captain Greely is most likely to succeed to the position of chief signal officer. He will at least remain at the head of the service temporarily, until arrangements are perfected for separating the weather-bureau from military control, and establishing it permanently under a civil branch of the government. General Hazen was quite opposed to any such transfer, but changed his mind about six months ago. This leaves the matter now open; and, as no officer of high rank would be affected by the change, it will probably be made. None of the officers of the service would offer any opposition to the movement.

Another important step has been taken in the permanent exposition project in Washington, the select committee of the senate having reported in