

solid foundation and a sound working organization. On what has thus far been done there is every reason for congratulation. This is, however, but the mere beginning of what there should be. More room will soon be needed, more and better boats. A special landing-place must shortly be purchased. An increased equipment of microscopes and aquaria will certainly have to be provided. A working library of good size and quality, placed in the laboratory itself, is absolutely indispensable. The indications point to a large influx of investigators and students, and the trustees foresee the possibility of more applicants than they can accommodate. To meet these new needs and emergencies, more funds are urgently demanded; and the trustees earnestly appeal to the corporation, and to the supporters of science everywhere, for sympathy and active support, so that they shall be enabled to carry on aggressively a work already begun, and proven not only possible but worthy.

REPORT OF THE HEALTH-OFFICER OF THE PORT OF NEW YORK.

THE annual report of the health-officer of the port of New York, Dr. William M. Smith, to the Board of Commissioners of Quarantine, contains much valuable statistical and other material. During the year 1888, 5,291 vessels arrived at New York from foreign ports, and 1,053 from domestic ports, which are subject to quarantine regulations. As compared with 1887, the number from foreign ports was less by 637. Dr. Smith states that the arrivals are diminishing each year, and gives figures to sustain this statement. The number of steerage passengers inspected by the medical officers of the department was 383,595, arriving by more than twenty different lines of vessels; the North German Lloyds bringing the largest number, 52,926. In speaking of this subject of immigration, Dr. Smith says: "There are few subjects of greater importance for the consideration of maritime quarantine officials, and of our municipal health authorities, than the immense immigration which has been flooding our country for the past nine years, and which there is reason to believe will continue for years to come. The same political and economic conditions which existed in 1879, when the immigration from the Old World increased from 135,020 in that year, to 327,371 in the year following, have continued to this time, and bid fair to obtain for years to come. Our vast unsettled area of country is likely to continue to invite, and the inexhaustible resources of our mines and forests will stimulate, an exodus of the surplus population of Europe for a long period in the future. Under these circumstances, it is the duty of health authorities to adopt such measures at ports of entry for immigrants as will contribute to land them upon our shores in such physical condition that they will add to the material prosperity of the country, instead of taxing its resources and increasing its burdens. Those who derive a profit from the transportation of immigrants, as well as those who come to share the blessings which our country affords, are under obligations to supply all the means and to take all the precautions necessary to secure the health of immigrants, and protect our communities from the diseases, developed or latent, with which they too frequently come hand in hand. Improper or insufficient food, imperfectly ventilated and overcrowded steerages during the voyage, are far too frequent. During the early part of the year 1888, the steamer 'Comorin' arrived with 1,263 immigrants; the 'Cachemere,' with 1,411; the 'Bohemia,' 1,280; 'Chateau Yquem,' 1,228; 'Alesia,' 1,018; and the 'Cashar,' with 1,520. These poor people were crowded between decks most of the time for two weeks, and some for twenty days. During the cholera epidemic in 1887, among the passengers of the 'Alesia' there was a larger percentage of deaths among those taken sick during the voyage than among those who suffered from the disease while in quarantine. While the passengers of the steamer 'Britannia' were detained at quarantine the same year on account of cholera, an epidemic of measles developed among them. The symptoms in most cases were more severe, and the fatality much greater, than is usual in that disease, the percentage of fatal cases being something more than fifteen per cent. There is no cause of death given so frequently by the surgeons of immigrant passenger-steamers as *marasmus*. The diagnosis should be

starvation. The victim is always a child at the breast. The mother, prostrated by seasickness, her vitality depressed by the crowd-poisoned air of the steerage, and exhausted for want of proper food, is unable to supply the child with sufficient nourishment. The immigrant mother often ceases entirely, for the time being, to afford her infant its accustomed food. The child is then given the only substitute, the coarse fare of the adult immigrant: indigestion, diarrhœa, and death are often the result."

In speaking of contagious diseases among immigrants, Dr. Smith says that small-pox continues to be one of the most frequent, and is by far the most difficult, latent contagion to arrest by maritime quarantines. The incubative period of the disease being fourteen days, and the average passage of steamers from ports of Europe and the British Isles several days less than that time, the disease may be contracted at the port of departure, or in the interior of Europe, and not develop until the immigrant reaches some far interior community in this country. To prevent or limit to a possible minimum the importation of this contagion has enlisted more earnest effort, and has been productive of more anxious reflection on the part of the health-officers, than any other subject during the past nine years. He recommends that all persons who have not been vaccinated within six or eight years should be vaccinated within the first two days after they go on board ship.

The history of the yellow-fever which occurred on the United States Cruiser "Boston" and the United States sloop-of-war "Yantic" is given in considerable detail. In discussing the origin of the fever on these vessels, Dr. Smith says that neither the "Boston" nor the "Yantic" received anything on board from the shore, while at Port au Prince, except meat and fruit. The fruit, consisting of bananas and oranges, was taken to the vessels by natives in what is called "bumboats," and sold to those on board. The main decks of the "Boston" and "Yantic" are so low, that communication between those on them and the "bumboats" was easy, and doubtless frequent, while the natives were vending their fruit. The wet, dirty, and sun-heated bottoms and timbers of the boats of the natives, exposed, as they must be at all times when at the shores or wharves, to an infected atmosphere as well as to the infected filth of the gutters that drain into the bay, certainly supply all the conditions necessary for the propagation of the infection. It would be rather a matter of surprise than otherwise, if the boats of the natives were not impregnated with the infection of yellow-fever when it prevails at Port au Prince. The history of the disease on the "Boston" and the "Yantic" affords satisfactory evidence to Dr. Smith that the persons who suffered from it contracted the infection while at Port au Prince, and that the infection did not infect either vessel; in other words, that the infection was limited to the individuals who contracted the infection at that port.

Dr. Smith refers to the disappearance of cholera from Europe and America. The confident prediction, he says, has not been fulfilled, which was frequently made by wiseacres during the winter of 1887-88 and until the spring of 1888 was well advanced, in reference to the cholera infection among the passengers of the "Alesia" and "Britannia" in the fall of 1887; to wit, that the germs of the disease had escaped with the baggage when the immigrants were released from quarantine, and would be propagated the ensuing summer until the disease developed into epidemic proportions. The history of this terrible disease since its first advent in Europe in 1829-30 warranted the suspicion that its arrival at our quarantine was the forerunner and herald of a disastrous epidemic of cholera throughout our country. There are but few instances in the history of this disease in which it has not become epidemic in a country soon after it appeared at its threshold. He gives the following interesting history of the cholera during recent years:—

"In 1882 cholera commenced its deadly march from its home in the Ganges. Its first attack was upon Aden on the Red Sea. Early in 1883 it appeared at Damietta in Egypt, and in June of that year reached Cairo, and subsequently extended to most of the cities and towns of Lower Egypt. Those familiar with the history of cholera then confidently predicted its speedy advent in Europe. These predictions were fulfilled early in the ensuing summer. The first victims of the disease in Europe were at Toulon in the early part of June, 1884. It reached Marseilles the 28th of the same

month, and in a few weeks decimated all the towns in the south of France. Although the Italian authorities on the boundaries between France and Switzerland attempted to stay the progress of the epidemic by imposing the most rigid system of quarantine of all persons and things from infected localities, the disease had passed all sanitary cordons before the end of August, and was numbering its victims daily by hundreds in various parts of Italy. Despite every effort of the health authorities, it crossed the Pyrenees early in 1855, and began the work of destruction in Spain. Before the close of the year it had counted more than a hundred thousand victims in that country. The year following (1886), a passenger-steamer with Italian immigrants landed the pestilence at Rosario, in South America. The *cordon sanitaire* established in the passes of the Andes by the States of the west coast of South America did not prevent the disease from reaching and ravaging many of the great cities and towns on the western coast. Sept. 23, 1887, and again in the month following, cholera sought to invade our country through Italian immigrants, as it had done in South America the year previous. The story of its advent, arrest, and destruction at quarantine, has been told in my report for 1887. In the five previous invasions of Europe by this disease during the present century, it had succeeded in every instance in reaching our shores, and developing into epidemic proportions. The failure of the pestilence to secure a foothold in our country last year was a triumph, but under difficulties such as the quarantine officials at this port, it is hoped, may not again be called upon to encounter."

Extensive repairs and improvements are now in progress at the quarantine establishment, which will, in the opinion of the health-officer, supply all the conditions necessary to secure the country from any possibility of an epidemic of infectious or contagious disease which may approach from the sea. For this purpose the Legislature has appropriated \$121,843. The disinfecting-rooms are thus described. The disinfecting-rooms are divided into three airtight compartments, with sides and ceilings made of four-inch oak plank covered with felt and galvanized iron, with doors and levers to each compartment; the outer walls of brick being built hollow so as to retain the heat. The floors are concrete and asphalt, on iron beams and masonry arches. The size of the disinfecting-rooms are two 14 by 19 feet, and one 12 by 19 feet, each 7 feet high. Each disinfecting compartment will be supplied with wire baskets supported on rollers, large enough to hold one immigrant's baggage, arranged in tiers with sufficient interspace to insure the admission of hot or moist steam with the least possible obstruction. The arrangement contemplates the use of moist steam for a few moments before the introduction of superheated steam. The introduction of moist steam first will secure the destruction of the disease germs by superheated steam more certainly and at less temperature, and thereby lessen the danger of injury of the fabrics exposed to a high temperature. In the boiler-room underneath will be placed exhaust-pumps with separate connections to each room, that the air can be exhausted; so that the articles to be treated may be easily penetrated by the moist steam, as well as other chemicals that may be used in the disinfecting process. The rooms, after being used, will be ventilated into a shaft surrounding the boiler-flue. The superheater will be located under the disinfecting-room, with all the necessary apparatus outside of the rooms, showing pressure and temperature.

In 1887 Dr. Smith recommended that a crematory be erected on Swinburne Island, for the cremation of those who die of contagious disease. This was deemed advisable on account of the unfavorable location of the burial-ground at Seguin's Point, near the extreme southern portions of Staten Island, and ten miles from the hospital. Twenty thousand dollars has been appropriated for the purpose, and the quarantine commissioners have been empowered to cause to be incinerated in such crematory the bodies of persons dying at the quarantine hospital from contagious or infectious diseases; provided, however, that "they shall not incinerate the bodies of any persons, dying as aforesaid, whose religious views as communicated by them while living, or by their friends within twenty-four hours after their decease, are opposed to cremation."

THE Eiffel Tower has now attained its full height of 984 feet.

BOOK-REVIEWS.

The Student's Atlas. By RICHARD A. PROCTOR. London and New York, Longmans, Green, & Co. 8°. \$1.50.

THE object of the present atlas is not to convey detailed information on the geographical conditions of limited areas, but to teach the relations between continents and oceans,—an important part of geography-teaching, which has hitherto been sadly neglected. The author says in his introduction, "In studying the geography of the earth as a whole, in considering the larger problems of geology, in reading history ancient and modern, in discussing problems relating to trade and commerce, and in dealing with many other subjects of inquiry, occasion constantly arises for the means of recognizing clearly and readily the relations of the different parts of the earth to each other. An ordinary atlas shows us Europe and it shows us North America, but it presents the two continents on different scales, and, except in the imperfect maps of the two hemispheres or the still more misleading Mercator's charts, it does not show how the two continents are situated with regard to each other. Of the Atlantic Ocean, which is almost as important and interesting a region of our earth as any continent, the ordinary atlas gives no map at all. Any one who wishes to note the nature and relative directions of the tracks across the Atlantic between different parts of the surrounding shores can learn nothing from an ordinary atlas except what is false and misleading. It is the same with all the oceans." For such reasons, which cannot be remedied in an ordinary atlas, the author considers it desirable to have a companion atlas, treating the earth as a whole. The plan the author has pursued is to divide the earth's surface on the twelve faces of a dodecahedron, each map being made to include the spherical surface circumscribing the pentagonal face of the dodecahedron. Thus each map embraces a little more than one-tenth of the earth's surface, and overlaps with the five neighboring maps, thus giving a good understanding of the relative position of the parts of the earth's surface. The projection chosen is Postel's equidistant projection, the centre of each pentagon being taken as the centre of the projection. This results in comparatively small distortion of scale and angle. The maps are well executed; the political divisions are designated by different colors. The topography is very sketchy. The course of ocean-currents is indicated,

AMONG THE PUBLISHERS.

THE Century Company have just completed their monumental work on the "Battles and Leaders of the Civil War." An index to the four volumes is appended to the thirty-second and final part. In concluding this handsome and valuable work, the publishers may justly feel proud of the achievement.

—C. W. Bardeen, Syracuse, N.Y., will publish May 15 an interesting historical guide-book entitled "Carleton Island in the Revolution: the Old Fort and its Builders," with notes and brief biographical sketches, and illustrations by Carleton.

—Belford, Clarke, & Co. will publish shortly William H. Herndon's "Life of Abraham Lincoln." Mr. Herndon was for some years the law-partner of Abraham Lincoln, and knew him perhaps as intimately as any person apart from his immediate family.

—The M. L. Holbrook Company have just ready "Studies of the Outlying Fields of Psychic Science," a work by Hudson Tuttle, who aims to explain the vast array of facts in his field of research by referring them to a common cause, and furnishes nearly fifty pages of "personal experience and intelligence from the sphere of light."

—People who are interested in the prohibitory amendment which is now before the State of Massachusetts for popular vote, will find a concise statement of the entire legislation in recent years in "Ten Years of Massachusetts," by Raymond L. Bridgman, published by D. C. Heath & Co. of Boston. It includes the years 1878 to 1887; and among other important enactments of that period, are the civil damage law, the screen law, the schoolhouse law, and the temperance text-books law. Every new effort of the State to repress liquor-selling is mentioned, and the text of the most important passages is given *verbatim*.