

SCIENCE.

FRIDAY, JULY 23, 1886.

COMMENT AND CRITICISM.

BY THE LAST STEAMER from Honolulu we received a letter from our correspondent giving an account of the present condition of the islands (p. 73). The great volcano Kilauea has just passed through a period of inaction. For seven years lakes of fire had been constantly visible. On the 6th of March last the amount of liquid lava flowing in various directions from the familiar lakes or craters called Halemaumau, New Lake, and the Little Beggar, was uncommonly abundant. The following day and night sharp earthquake shocks disturbed the residents at the Volcano house; and immediately afterwards the liquid entirely disappeared, leaving an irregular cavity 3,360 feet in length, and wide enough to embrace the areas of the three great openings. The greatest depth of the liquid removed was 580 feet. Quietness and darkness reigned till the 4th of June, when a new opening showed molten lava about forty feet in diameter. Three weeks later, June 25, the fire came back in earnest, filling up the old Halemaumau and some other portions of the caldera. For a long time to come, therefore, visitors may expect the old-time grand volcanic displays.

THE AMERICAN LIBRARY ASSOCIATION was organized in 1876 at Philadelphia, and the movement was followed at once in England by the founding of the Library association of the United Kingdom in the following year. Subsequent meetings of our own association have been held in New York, Boston, Washington, Cincinnati, and Buffalo, and the annual meeting of a year ago at Lake George. During all this period, Mr. Justin Winsor of the Harvard college library has been the president of the association. A great variety of circumstances has contributed to the interest and importance of the general meeting which was held in July at Milwaukee, under the presidency of Dr. W. F. Poole. To found libraries is the fashion to-day; and the librarians of our country have wisely organized to secure the best results from such splendid bequests as those of Pratt and of Pea-

body to the city of Baltimore, of the Seymour fund to Auburn, of the Forbes bequest to Northampton, and of the Newberry legacy to Chicago. Efficient management of such funds cannot fail to inspire a like generosity elsewhere. Also the movement toward a correlation of the public library and the public school is one whose success thus far appears to justify the confident expectation of future results of the highest moment.

The continued success of *The library journal*, the inception of a new periodical entitled *Library notes*, and the assured inauguration of the Columbia college school of library economy under the direction of Professor Dewey in January next, are among the noteworthy progressive features of library interests. We find the librarians insuring the success of their ventures in bibliography and indexing, through the co-operative method, now so thoroughly successful as a principle in matters commercial. The reforms of the last few years in library management are most encouraging, and the librarians are now suggesting the propriety of dignifying their work with the title 'learned profession.' We find them venturing, a little early, perhaps, the expression 'library science:' in short, their position has become largely aggressive. While, however, there is much in the new movement that is the subject of adverse criticism, no disinterested person can overlook the vast deal of good that has already been secured. There is, withal, need of continual care, lest, in the drudgery of endless details, the meaning of the proper integration of all these differentials be lost sight of; and there seems to be ground for the apprehension lest, with the rapidly increasing conveniences for library-work, the too great convenience of mere appliances may hamper individual freedom in the use of libraries. Also there is need of perpetual distinction between the mere reader and the thorough student; and in the equipment and management of a library, only the keenly discriminating intellect detects the proper relationship of the two. It very often happens that much of what the tools of the library will accomplish for the reader, the student whose aim is culture will prefer to do for himself. There is entire safety in predicting the ultimate outcome

of all such issues: while the reader may himself be willing to work as a mere cog in the library wheel, the cultured student prefers to make the library merely an auxiliary in his own development.

NEW ZEALAND AND THE RECENT ERUPTION.

NEW ZEALAND forms one link of the great volcanic chain that girdles the Pacific Ocean, from South Shetland and Cape Horn up through the Andes, Mexico, British Columbia, and Alaska, crossing into Asia through the Aleutian Islands, and stretching south through the Kurile Islands, Japan, Ladrone Islands, Philippines, and West Indies, to Mounts Erebus and Terror, in the antarctic zone. The greatest volcanic energy is found where this great girdle crosses the torrid zone, — in the northern Andes, Central America, and Mexico, to the east; and in the Philippines and West Indies, to the west. Here the great stresses and pressures caused by the slow cooling and contraction of the crust of the earth are perhaps increased by others due to the centrifugal force of its rapid rotation on its axis. New Zealand lies a thousand miles south-east of Australia, in latitude 40° south, longitude 175° east, the antipodes of Spain, and comprises two large islands (North Island and South Island), with numberless smaller ones around their shores, — an area, in all, of about 100,000 square miles, or nearly that of Great Britain and Ireland.

The accompanying physical map of the islands will indicate at a glance the general topographic features. The centre of North Island is occupied by lofty mountains, which send off spurs in various directions to the coast, and are covered with forests from their bases nearly to their summits. The north-western peninsula abounds in fertile and well-watered valleys, and the main body of the island is characterized by gently sloping hilly ranges and low-lying tablelands, varied here and there by volcanic peaks, and covered with a luxuriant growth of timber. In the south centre is a wild highland region, seldom visited by travellers.

South Island is very different. The snowy peaks of the great southern Alps stretch along its western side, from ten to thirteen thousand feet in height, densely wooded to the snow-line. To the west are vast snow-fields and glaciers; and the coast is deeply and sharply indented by bays and fiords, which, with the numerous lakes of glacial origin, remind one strongly of the coast of Norway, although 30° nearer the equator. A low range lies along the centre of the island, with

spurs at right angles, and numerous ravines through which the rivers break their way to the south-east. Farther east are terraces and plains.

North Island, the scene of the recent eruption, is somewhat smaller than South Island, and is about the size of Cuba, though stretching north and south, instead of east and west. The lake district, or region in the north-east centre of the island, has been well called the wonderland of the world, and for magnificent scenery and wonderful development of geysers, fumaroles, and hot springs, comes second only to our own Yellowstone park, if indeed it be not its peer. In the volcanic district, stretching from Mount Egmont, the western promontory, north-eastward through the centre of the island to White Island in the Bay of Plenty, there have been hitherto but two active volcanoes, — Tongariro (6,500 feet), a peak 30 miles south of Lake Taupo; and Wakari (860 feet), on White Island. The great snow-capped dome of Ruapehu, just south of Tongariro, and the highest point in the island (9,190 feet); Mount Egmont (8,200 feet), and the great volcanic promontory on which it stands; and hundreds of other extinct craters and vast fields of lava, tufa, and scoriae, — these all bear witness to the energy of volcanic action in comparatively recent time. And yet there has been no serious eruption till now, within the memory of European settlers, and even the Maori traditions give no account of one. Earthquakes, however, are not uncommon, though seldom sufficiently severe to cause great destruction, Cook Strait being regarded as the centre of the region generally disturbed: 342 were recorded from 1869 to 1879, and 28 in 1882, only one of which was at all severe, while ten were described as 'smart,' and the other seventeen only slight tremors. The most severe shock of which there is any record occurred the evening of Jan. 23, 1855, and caused great destruction in Wellington. Many fissures in the earth, landslides, and a great sea-wave were caused, and minor shocks followed it at decreasing intervals for about three months. There are many evidences that a gradual elevation of the whole country is going on; as, for instance, rocks are now visible in Cook Strait where there were none when the country was first discovered. This indicates that earthquakes or other disturbances are likely to occur, and helps us to understand the late eruption.

Lake Taupo, the great lake in the centre of the island, 1,250 feet above sea-level, 30 miles long, and 20 broad, covering an area of 250 square miles, occupies a depression caused by some great eruption, and is surrounded by cliffs of lava a thousand feet in height, with a little extinct crater