

that might prove fatal to a telegraph wire. There seems to be now nothing to hinder the great work to unite Europe and America by means of a telegraph wire; an undertaking so grand that few thought it possible. The whole distance across was found to be 1,840 sea miles, from St. John, N. F., to Valentia Harbor, Ireland. The greatest depth was found nearly in the centre between these two places. The profile of the Atlantic bed on this route is of by far easier grade than many of our railroad profiles.

#### THE BASIN OF THE ATLANTIC.

The basin of the Atlantic Ocean is a long trough, separating the old world from the new, and extending probably from pole to pole. This ocean furrow was probably scored into the solid crust of our planet by the Almighty hand; that there the waters which he called seas might be gathered together so as to let the dry land appear and fit the earth for the habitation of man. From the top of Chimborazo to the bottom of the Atlantic at the deepest place yet reached by the plummet in the Northern Atlantic, the distance in a vertical line is nine miles. Could the waters of the Atlantic be drawn off so as to expose to view this great sea gash, which separate continents and extends from the Arctic to the Antarctic, it would present a scene the most rugged, grand and imposing. The very ribs of the solid earth, with the foundations of the sea would be brought to light, and we should have presented to us at one view, in the empty cradle of the ocean, "a thousand fearful wrecks, with that fearful array of dead men's skulls, great anchors, heaps of pearl and inestimable stones, which, in the poet's eye, lie scattered in the bottom of the sea, making it hideous with sights of ugly death." The deepest part of the North Atlantic is probably somewhere between the Bermudas and the Grand Banks. The waters of the Gulf of Mexico are held in a basin about a mile deep in the deepest part. There is at the bottom of the sea, between Cape Race in Newfoundland, and Cape Clear in Ireland, a remarkable steppe, already known as the telegraph plateau. A company is now engaged with the project of a submarine telegraph across the Atlantic. It is proposed to carry the wires along the plateau from the eastern shores of Newfoundland to the western shores of Ireland. The great circle distance between these two shore lines is 1,600 miles, and the sea along this route is probably nowhere more than 10,000 feet deep.—*Prof. Maury.*

#### ATLANTIC TELEGRAPH.

Professor S. B. Morse who lately visited Europe with a view to test his experiments for constructing a telegraph from Newfoundland to Ireland, thus writes to Mr. C. W. Field of New York, on the subject under date of October 3, 5 o'clock A.M. As the electrician of the New York, Newfoundland and London Telegraph Company, it is with the highest gratification that I have to apprise you of the result of our experiments of this morning upon a single continuous conductor of more than 2,000 miles in extent, a distance, you will perceive, sufficient to cross the Atlantic Ocean, from Newfoundland to Ireland. The admirable arrangements made at the Magnetic Telegraph office, in Old Broad Street, for connecting ten subterranean gutta percha insulated conductors, of over 200 miles each, so as to give one continuous length of more than 2,000 miles, during the hours of the night when the telegraph is not commercially employed, furnished us the means of conclusively settling, by actual experiment, the question of practicability as well as the practicality of telegraphing through our proposed Atlantic cable. This result had been thrown into some doubt by the discovery, more than two years since, of certain phenomena upon subterranean and submarine conductors, and had attracted the attention of electricians—particularly of that most eminent philosopher, Professor Faraday, and that clear-sighted investigator of electrical phenomena, Dr. Whitehouse—and one of these phenomena, to wit, the perceptible retardation of electric current, threatened to perplex our operations and require careful investigation before we could pronounce with certainty the commercial practicability of the ocean telegraph. I am most happy to inform you that, as a crowning result of a long series of experimental investigation and inductive reasoning upon this subject, the experiments under the direction of Dr. Whitehouse and Mr. Bright, which I witnessed this morning, in which the induction coils and receiving magnets, as modified by these gentlemen, were made to actuate one of my recording instruments, have most satisfactorily resolved all doubts of the practicability as well as practicality of operating the telegraph from Newfoundland to Ireland. Although we telegraphed signals at the rate of 210,241, and according to the count at one time even of 270 per minute upon any telegraphic register (which speed you will perceive is a rate commercially advantageous), these results were accom-

plished, notwithstanding many disadvantages in our arrangements, of a temporary and local character—disadvantages which will not occur in the use of our submarine cable.

#### THE CRYSTAL PALACE LIBRARY.

It is intended to open on Wednesday the library which has been recently formed at the Crystal Palace, and which is already one of considerable value and extent. The nucleus of this library was formed by a large number of very expensive works of art, and of reference, which the company, in its plenitude of wealth and in the anticipation of boundless income, provided for the use of the gentlemen employed in getting up the catalogues, and in building the Fine Arts Courts. Upon almost every branch of art the collection is complete, and many additions have since been made to the library by persons desirous of assisting in its formation. The plan upon which this department is intended to be worked is one which will ensure for the library a constant supply of modern literature. Messrs. Longman, Murray, Hurst and Blackett, Rivington, and, with scarcely an exception, the whole of the London publishing houses, as well as the principal firms of Paris, Berlin and Dresden, have agreed to send to the Palace library a copy of every work as soon as published. In return for this, the company give to each of the contributors the use of a panel in a prominent part of the reading room, headed with his or their names, upon which is posted the title-page and one or more of the illustrations of each new work, thereby affording a most useful description of advertisement. The books themselves will also be laid upon the library table, and an agency established for their sale on the spot. At the end of a certain period the works so contributed will be deposited in the library, and will form part of its bibliographical treasures. Some most valuable works have been already received from continental publishers; among others a fine copy of the celebrated "Dresden Gallery" from the publishers, and some very elaborate and expensive works from the famed establishment of Messrs. Plon Freres of Paris, the printers to his Majesty. The readiness with which the plan has been adopted by the leading publishing houses in this country affords a pledge of the success of the undertaking. Mr. Shenton is appointed librarian; and the energetic and able manner in which he has completed the preliminary arrangements in the department, and the anxious desire which he has evinced to make the plan work efficiently, prove him to be well adapted for the position which he occupies.

**ERRATUM.**—In the October No. the article on Yale College Library should have closed at the paragraph commencing "In the New Harvard Hall, &c.," the remainder of the article was placed there by mistake. It refers to Harvard College Library.

#### GRAMMAR SCHOOL TEACHER WANTED.

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All communications to be addressed to Mr. J. GEORGE HODGINS, Education Office, Toronto.

TORONTO: Printed by LOVELL & GIBSON, corner of Yonge and Melinda Streets.