

the presidential guidance of Hon. E. Everett, and the superintendence of Prof. C. C. Jewett.

The collection of books now includes 105,000 volumes, besides 28,874 pamphlets. 84,000 volumes belong to the Reference library in the upper hall, and 21,000 volumes to the Circulating library in the lower hall. Last year 7,400 volumes were added, of which 6,100 volumes were purchased, and 1,300 volumes were presented. Among the gifts, special mention is made of a large and rare collection of volumes pertaining to the life of Moliere. Mr. W. H. Prescott began the collection in 1837, with the plan of writing a life of the dramatist, and, after he abandoned this purpose, Mr. George Ticknor, by whom the books are given to the library, cherished the theme and augmented the number until it reached 132 volumes.

The expenses of the library during the year were as follows:—for books and periodicals, \$9,400; for other purposes, \$18,200; total, \$27,654. During the year the loan of books made a daily average of 626 volumes. On some days it was ascertained by count, that 2,000 persons visited the library for literary purposes. The tastes of those who make use of the Reference library are indicated in the following table, which shows the number of books consulted in each department:—

English History .....	18 per cent.
American History and Early Literature .....	12½ "
Theology and Ethics.....	12 "
Useful and Fine Arts.....	8 "
Medicine.....	7 "
French History and Literature.....	6½ "
Mathematics and Physical Science...	5½ "
Oriental History and Literature.....	4 "
German History and Literature.....	3½ "
Jurisprudence.....	3 "
Greek and Latin Classics .....	2½ "
Italian History and Literature.....	2½ "

—*Am. Pub. Cir.*

#### • Gisborne's Electric Compass.

Mr. Gisborne's electric compass, to which we have before called attention, is nothing more than the ordinary ship's compass, with a battery in the box, and two insulated wires maintaining the electric currents round the needle. This is the whole contrivance. This simple application of electricity supersedes the elaborate enquiries of the Astronomer Royal, the life-long mathematical labours of Mr. Smith, the philosophical observations of Mr. Evans, and eminently practical experiments of the Liverpool Compass Committee. Hereafter, compass variations need not appear in the loss of life and property, and the sailor may range the trackless ocean, assured that he steers his course with safe precision. Captain Washington once made the remark that but for the labours of the Compass Committee, Mr. Evans, Mr. Smith, and the Astronomer Royal, it would have been impossible to send iron ships to sea. Mr. Scott Russell, at the same time, while reproaching himself and the shipbuilders of the country with the oversight of the compass, congratulated the officers and seamen of the fleet and the merchant service with the fact that, while he and the shipbuilders were

doing their best to advance the science of ship construction to final forms, scholars, scientific and practical men, were constantly toiling to reduce the variations of the compass to intelligible and certain laws. At the next meeting of the Institution of Naval Architects, these gentlemen are likely to congratulate each other and the world, that further labour in that direction is superfluous, and that the application of electricity to the compass is, in our day, of as much importance in the safe navigation of iron and iron laden ships, as the invention of the compass was in early times. Iron ships and iron cargoes may be said to have deprived the sailor of the use of the compass; and the application of electricity to have restored it to him.

Mr. Gisborne's electric compass was tried recently for three days on board the iron steamer "Resolute," in the Mersey. It was uninfluenced by the iron of the vessel, and worked correctly when placed over the engines and between the chimneys. Not so the ordinary compass of the "Resolute" with the well-known magnetic adjustments; the variations being 1½ to 1¼ points. Piles of steel and iron shavings placed round the electric compass do not act upon the needle, and it is alike insensible to the presence of bars of iron on the top of the box. Tests such as these are demonstrations that currents of electricity restore the compass to the sailor as unvarying and trustworthy as when steam machinery, iron hulls, masts, and rigging were unknown. Mr. Gisborne is an eminent electrician, and having crossed the Atlantic frequently, it occurred to him to try electric currents as a means of checking compass variations. The thought was a happy one, and Mr. Gisborne is now to be regarded as one of the benefactors of mankind. The immediate and peremptory adoption of the electric compass would spare thousands of lives and value to the extent of millions every year.—*Mec. Mag.*

#### Big Ships and Cannon.

Mr. James Bruce in a letter says:—The first ship seen in Greece, arrived at Rhodes, A.D., 1485—Hiero's ship, which was built under the direction of Archimedes, had wood enough employed in it to make gallees to the number of sixty. It had all the varieties of apartments of a palace—banqueting rooms, galleries, gardens, fishponds, stables, mills, baths, a temple of Venus, &c. It was encompassed with an iron rampart and eight towers, with walls and bulwarks furnished with machines of war, particularly one which threw a stone of 300 pounds, or a dart 12 cubits long, the space of half a mile, &c. This ship has been described by Athenæus, the mathematician, who wrote a Greek treatise "On Machines of War." Mahommed II., at the siege of Constantinople, A.D. 1453, used 800-pounders. In 1807, when Sir J. Duckworth passed the Dardanelles, his fleet was dreadfully shattered by the immense shot! The "Royal George," of 110 guns, was nearly sunk by one shot, which carried away her cutwater, and cut the mainmast of the "Windsor Castle" nearly in two; one single shot knocked two ports of the "Thunderer" into one. The "Repuise," 74 guns, had her wheel shot away, and 24 men killed and wounded by a single shot, nor was the ship saved