

ERRORS OF THE COMPASS.

Capt. Henry O. Cook, formerly of the British navy, addressed the Polytechnic Branch of the American Institute, last evening, on deviations of the compass. The audience included many navigators and scientific men. The Captain said that it might be supposed as a matter of course that seamen generally would interest themselves in the compass, but no body of men, as a rule, were more ignorant of its workings. They had ignored the science of the compass as a subject too deep for contemplation. They put their faith in the compass in fine weather, and were helpless in bad weather. A few navigators who had watched and noted the variations of the magnetic needle, had learned to extract from its capricious movements information which was veiled and distorted by a host of disturbing influences. The seamen who failed to ask such information were excusable, for, though very able and scientific men had made thorough investigation, they had failed to discover the laws which govern the action of the magnetic needle. The British Admiralty manual contained facts and figures of more use to the mathematician than to the practical navigators of our merchant marine.

Only five or six centuries ago had western nations learned to use the needle, whereas it had guided the Chinese mariner for thousands of years. Nothing had been done, however, in the way of attempting to correct the errors of the compass by experiments until the close of the last century. Capt. Flinders was the first in the field, and was followed by others. Experiments only served to shake confidence in the needle, and to cause mariners to place their reliance on the heavenly bodies. Captain Flinders proposed to correct the deviations of the needle by compensation.

Capt. Scoresby, afterward the Rev. Dr. Scoresby, had done more than any other man to bring to public attention the deviations of the needle, and through the investigations of Capt. Scoresby and others a method of compensation was generally adopted, but it was imperfect. These investigations were on wooden vessels, and when iron came into use in shipbuilding other experiments had to be made, and the previous deductions were found to be of no value. Subsequent experience had proved that Capt. Scoresby was correct in saying that "iron vessels while building became charged with magnetism, a portion of the magnetism permanent in the vessel under all circumstances, and another portion which might be called sub-permanent, which could be taken from the vessel by violent straining and knocking about." Twenty or thirty years ago rules for the compensation of compasses were compiled by Mr. Airy, and the following of those rules had undoubtedly caused some of the most terrible shipwrecks. In the ship *Tayleur* of 2,000 tons, which sailed from Liverpool with a load of emigrants, the steering compass deviated 60°, or five and a half points. The result was a wreck on the Irish coast attended with fearful loss of life. The Court of Inquiry unanimously attributed the disaster to the deviation of the *Tayleur's* compasses. Several of the vessels had been lost late, and hundreds of lives cut off. The true cause of nearly all such wrecks was in the compass, though some courts of inquiry ignored this fact.

The *Tayleur* wreck and the investigations of Dr. Scoresby caused alarm among those who believed in the rules of Mr. Airy and the compensation magnet.

Changes in the magnetism of iron vessels added greatly to the complexity of compass correction, and experience had proved that it was not safe to rely on Airy's compensation magnets. A series of careful observations were made on different ships, and tables of deviations framed therefrom. These could not, however, be depended upon. They were liable to change with a change of latitude to an extent which could not be understood before the voyage. One vessel was no guide for another. The deviations obtained with a vessel in an upright position would be altogether false when a vessel was heeling over either to starboard or port, and the magnetic influences which surround a vessel could not be obviated, however carefully her tables of deviation might be made out. The fluctuations in the magnetism of vessels could not be guarded against without repeated observations to correct the very tables of deviations on which the navigator was to rely. Thus there was the directive force of the needle which becomes actually sluggish in its workings. Commodore Jenkins, of the United States Navy, had said that "neither compensation nor a table of deviations could be relied upon, except in about the same magnetic latitude as that in which the vessel was swung."

The Captain showed that sea men could not place implicit confidence in their compasses when corrected by compensation, and that the compass, when compensated, would not act the same in fine as in rough weather, when far from as when near land. He added that on Thursday evening next he would deliver another address on the method of correcting deviations of the compass.

Dr. J. V. C. Smith said that he had heard Captain and Rev. Dr. Scoresby say that there was no reliance to be placed on the magnetic needle in storms. Mr. Dudley Blanchard remarked that it was well known to surveyors that the needle deviated on land, especially in the neighborhood of iron mines.

Capt. McDougall described an interesting storm which he had encountered forty-five miles from Sandy Hook, when electric fire streamed from every mast and spar, and his compass was in utter disorder.—N. Y. Sun.

Observing men in Paris contend that the commune is not yet dead in that city, but that on the contrary it is more dangerous now than under the empire, when it had less to hunger for and to be envious of, when its members were better fed and paid. Napoleon, whether he was a great statesman or not, knew better how to deal with *caillille* than his successors. He gave them plenty of work and amusement, and although there were higher moral and social agencies that might have been employed, these were sufficient for his purposes. Paris had no street beggars during the empire.

A massive granite cross has been erected on the spot where the late Bishop Wilberforce met his death. The locality is known as Evershed's Rough, near Dorking. The work was entrusted by the family to Mr. Gilliam, sculptor, of Dorking. The monolith is of one solid block of granite, thirteen feet in length and of corresponding dimensions. The memorial bears the simple inscription, "S. W., July 19, 1873." The characters are chiselled out of the granite, and a carved pastoral staff passes diagonally through the two initial letters. The design was supplied by the late bishop's family.

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GOVERNMENT HOUSE, OTTAWA.

Monday, 30th March, 1874.

PRESENT:

HIS EXCELLENCY THE GOVERNOR
GENERAL IN COUNCIL.

ON the recommendation of the Honorable the Minister of Customs and under the provisions of the 4th Section of the Act passed in the 31st year of Her Majesty's Reign, and intitled: "An Act respecting the Customs." His Excellency, by and with the advice of the Queen's Privy Council for Canada has been pleased to order and declare, and it is hereby ordered and declared, that the article known as Gypsum when imported into Canada in its raw or natural state, may be so imported free from the payment of Customs duty, but that ground or calcined Gypsum be, and the same is hereby declared to be chargeable with a duty of fifteen cents *ad valorem* whatever the uses may be for which it is so imported.

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W. A. HIMSWORTH,
Clerk, Privy Council.



GOVERNMENT HOUSE, OTTAWA.

Thursday, 2nd April, 1874.

PRESENT:

HIS EXCELLENCY THE GOVERNOR
GENERAL IN COUNCIL.

ON the recommendation of the Honorable the Minister of Customs, and under and in pursuance of the provisions of "the Merchant Shipping Act, 1851," and the Acts amending the same, and of the Act passed in the 36th year of Her Majesty's Reign, intitled, "An Act relating to Shipping, and for the Registration, Inspection and Classification thereof."

His Excellency by and with the advice of the Queen's Privy Council for Canada, has been pleased to appoint the Port of Cobourg, in the Province of Ontario, a port for the registration of shipping, and such port is hereby constituted and appointed accordingly.

His Excellency, under the authority aforesaid, has further been pleased to constitute and appoint the Collector of Customs at the said Port of Cobourg to be Registrar of Shipping, and the Landing Waler at the said port to superintend the survey and measurement of ships thereat, under the provisions of the said Act.

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W. A. HIMSWORTH,
Clerk, Privy Council.