

## SCIENTIFIC INTELLIGENCE.

—We feel much pleasure in informing our readers, on the authority of the London Guardian, that Sir Wm. Hooker, the distinguished botanist, has been in communication with the Duke of Newcastle for some time with respect to the publication of a magnificent work, at the Government expense—viz.—A complete Flora of the British Colonies—Dr. Griesbach of the University of Dettingen, was appointed for the West Indies some time since, and the first number of his work has just been issued, and Sir William Hooker has determined to take Canada as his share of the field of inquiry. He and his staff will probably arrive here in the beginning of the spring. The Botany of the Himalayas by Sir William, is one of the most valuable additions to botanical literature that has been made for years.—*U. C. Journal of Education.*

—Mr. J. M. Lemoine, of Quebec, publishes, in the *Canadien*, a series of very interesting articles on Canadian ornithology. They will also be found in our *Journal de l'Instruction Publique*.

—A correspondent of the *New-Brunswick* mentions a remarkable fact, which, it would appear, science has not yet accounted for. That part of the ice on the shores of the Gulf of St. Lawrence, which lies over oyster beds, is never so solid as at other places. It even occurs very frequently, that large spots over the oyster beds remain unfrozen, causing many accidents. Lately a gentleman who was travelling on the ice near to the coast, lost his horse and sleigh, and had himself a very narrow escape, on meeting unexpectedly in the night with one of those oyster ponds. The fact has ever been well known to the fishermen, who take advantage of it in their trade.

—The following is a process for restoring writing effaced by sea water, which has been employed with much success by Mr. Alfred Smée, of the Bank of England, in deciphering letters damaged by the accident which had happened to the Northman on her voyage from India:

The letter is moistened with hydrochloric acid, after which a soft brush dipped in a saturated solution of yellow prussiate of potash is lightly passed over it, and the writing appears of a beautiful blue colour, owing to the formation of prussian blue. The solution of the yellow prussiate of potash should be added in excess. The letter is dried by pressing it between the folds of blotting paper, and afterwards holding it before the fire. The document may be preserved by coating it with isinglass.

When the letter is much damaged, the operation requires exceeding care and nicety. In such a case it would be well to take a photographic copy, previous to submitting the paper to the action of the chemicals.

The result of the operation is the consequence of a chemical action. Most kinds of ink contain iron in solution; sea water containing oxides having greater affinity for the acids combined with the iron, unite with these acids and the oxide of iron is left in the fibres of the paper. Hydrochloric acid being poured on the paper, immediately unites with the oxide of iron, and forms a hydrochlorate of iron; this on the addition of the yellow prussiate of potash, is decomposed, the hydrochloric acid freed, and an insoluble cyanoferrate of potassium (prussian blue) precipitated. The hydrochloric acid is employed to place the oxide of iron in a state proper to be acted upon by the yellow prussiate of potash, which has no effect upon the uncombined oxide.

## STATISTICAL INTELLIGENCE.

—The official returns of the emigration from Liverpool during the year just closed have now been completed at the government office; and although, on comparison with the year preceding, the numbers in the aggregate do not appear to vary very materially, the variation in the tide of emigration to the different countries has been most marked. The total number of passengers, "under the act," who have taken their departure from the Mersey during the twelve months just elapsed have numbered (inclusive of cabin passengers) 68,035, against 70,466 in 1858, being a decrease of 2,441. During the past year, to the United States, 168 ships, of 286,960 tons, sailed, with 1,561 cabin and 47,137 steerage passengers, "under the act," against, in 1858, 167 ships, of 256,556 tons, with 1,446 cabin and 43,180 steerage passengers, being a falling off of about 300. In "short ships," not "under the act," or submitted to government inspection, 143 vessels sailed in 1859, with 5,203 cabin and 2,283 steerage passengers. These "short ships" include all travelers by the Cunard, Canadian, and African mail steamers, &c. To Canada the departures numbered only three vessels "under the act," of 2,859 tons, with 544 steerage passengers, against, in 1858, 7 ships, of 8,027 tons, with 12 cabin and 1,934 steerage passengers. However, in 1859, "short ships" carried to the Canadian provinces 1,958 cabin and 2,118 steerage passengers. To the Australian colonies the greatest falling off has been exhibited, scarcely more than two-thirds the number of emigrants having left the Mersey during the past year. Fifty-two ships, of 72,189 tons, sailed to Victoria, with 508 cabin and 9,883 steerage passengers, against, in 1858, 66 ships, of 90,888 tons, with 690 cabin and 15,662 steerage passengers. To Melbourne 18 "short ships" took their departure, with 32 cabin and 333 steerage passengers. To New South Wales 9 ships, of 10,154 tons, sailed, with 4 cabin and 3,476 steerage passengers—the great proportion being government emigrants, dispatched by the Colonial Land and Emigration Commissioners—against 9 vessels, of 9,579

tons, with a like number of cabin and 3,455 steerage passengers, being a slight improvement over 1858. Only 8 cabin passengers were conveyed to New South Wales in "short ships" during the year. To South Australia 3 ships, of 2,443 tons, were engaged in the conveyance of 1,052 government emigrants, against, in 1858, 5 vessels, of 5,381 tons, with 1,991 passengers, also at the expense of the Emigration Commissioners. None carried out in "short ships." A feature which distinguishes last year's Liverpool emigration has been the dispatch of 6 vessels, of 6,704 tons, which carried out 104 cabin and 1,317 steerage passengers—the same number of sailings with passengers direct being heretofore unheard of. To the Cape of Good Hope the departures comprised 4 vessels, of 2,860 tons, with 7 cabin and 993 steerage passengers, against, in 1858, 6 ships, of 5,420 tons, with 10 cabin and 2,059 steerage passengers—the latter in both years being sent out at the colonial expense—the selections of the commissioner in London, the Hon. William Field; 10 cabin passengers were, in addition, "short shipped" to the Cape of Good Hope. To the East Indies 3 ships "under the act" were dispatched during the second half of the past year, with 1,544 steerage passengers, all soldiers' wives and children, (which can hardly be classed as passengers,) and 13 "short ships" sailed, with 96 cabin and 20 steerage passengers; the unfortunate Accrington, which has put into the Brazils, with 65 deaths among the passengers, and captain and mate poisoned, was one of the former class. In addition to the foregoing, the following "short ships" have sailed during the year:—To America, 35 ships, with 230 cabin and 38 steerage passengers; to Africa, 12 mail steamships carried 296 cabin passengers; to the West Indies, 5 vessels, with 39 cabin passengers; to New Brunswick, 3 ships, with 31 cabin and 3 steerage passengers; to Nova Scotia, 1 cabin and 4 steerage passengers; to Prince Edward Island, 9 cabin passengers; and to China, 4 cabin passengers; making a grand total, "under the act" and "not under the act," of 10,103 cabin and 71,632 steerage—81,735 passengers, or an average of nearly 7,000 souls per month sailing from Liverpool. With the exception of the melancholy losses of the Royal Charter, Pomona, Indian, &c., there have been no features calling for particular notice in glancing at the emigration for the year, which closes, as usual at this season, at almost its duldest point.—*Hunt's Merchants' Magazine.*

—The Exports of Canada in 1859 were as follows:—

|                                                             |             |
|-------------------------------------------------------------|-------------|
| From Sea-ports .....                                        | \$9,785,551 |
| Inland ports, as reported .....                             | 13,316,827  |
| Estimated amount of exports not reported at inland ports .. | 1,664,603   |

\$24,766,981

Inclusive of ships built at Quebec in 1859—12,799 tons at \$34 per ton, \$421,566.

The following is a comparative table:—

|            | Exports.     | Imports.     | Total.       |
|------------|--------------|--------------|--------------|
| 1856 ..... | \$32,047,017 | \$43,584,387 | \$75,631,404 |
| 1857 ..... | 27,006,624   | 39,430,598   | 66,437,222   |
| 1858 ..... | 23,472,609   | 29,078,527   | 52,551,136   |
| 1859 ..... | 21,766,981   | 33,555,161   | 55,322,142   |

The value of ships built at Quebec is that which shows the principal decrease. It was in

|            |                                         |
|------------|-----------------------------------------|
| 1856 ..... | \$1,213,078                             |
| 1857 ..... | 1,383,444                               |
| 1858 ..... | 743,640 (18,591 tons, at \$40 per ton.) |
| 1859 ..... | 421,566 (12,399 tons, at \$34 per ton.) |

—Lower Canada possesses in the River and Gulf of St. Lawrence an extent of coast of 1,000 miles, where the Cod, Herring, Mackerel, Salmon, and other fisheries are carried on successfully.

Whale fishing is also carried on by vessels fitted out from the Port of Gaspé. Average season value of whale oil is \$27,000.

The Cod fishing is carried on along the whole coast of Canada; the Herring fishing principally at the Magdalen Islands, in the Bay of Chaleur, and on the coast of Labrador; the Mackerel fishing at the Magdalen Islands, along the coast of Gaspé, and in the lower part of the River St. Lawrence.

There are above 70 Salmon Rivers in Lower Canada, which the Government are now fostering with a view to enhance the commerce of this valuable fish. The latest annual catch is 3,750 barrels. The Bay of Chaleur alone formerly exported 10,000 barrels.

Number of boats belonging to Canada fishing on the Canadian shores, from 1,200 to 1,500.

Nearly 100 Canadian vessels are employed in the fisheries of Canada.

Number of fishing vessels from Nova Scotia and the other Lower Provinces fishing on our shores, from 250 to 300.

Number of fishing vessels from the United States frequenting our shores, principally for the Cod and Mackerel fishing, from 200 to 300.

Quantity of dried and smoked fish yearly exported from Canada .....

Quantity of pickled fish exported from Canada .....

Consumed in Canada, above kinds .....

Quantity of fish oils exported from Canada .....

Number of Seal Skins do do .....

Quantity of Salmon taken in the Rivers of Canada .....

Quantity of Trout and Halibut taken in Canada .....

Total fish productions valued at .....