

down," the crew stood quietly at their respective stations until the order to "jump" was given, and thus, while discipline carried many of those below decks to their doom, it also preserved the lives of many above that certainly would have been lost in a general wild and headlong scramble for safety.

Seamanship, *per se*, in its relation to the safety of passengers, it is not our intention to discuss, but there are other and collateral issues that constantly endanger human life. Those who travel upon the high seas certainly have a right to demand of shipowners, shipmasters, and of their own and other governments, that they be safeguarded by every reasonable precaution that it is within human power to provide.

Is the maximum protection accorded?

We think not! Ships are still overloaded, and "Plim-soll's mark" is not operative, except in craft that fly the British flag. Ships of all kinds still put to sea short-handed; lifeboats are generally too few, and the means of getting them into the water are often clumsy and antiquated, entailing exasperating and fatal delays; and boat drill is in some vessels practically unknown. Finally, while the schooling of the officer is, perhaps, thorough and complete, and ever improving, that of the man forward has practically no existence. "Steam," declared an eminent naval authority, "has killed the real sailor, the old time tar who was the eyes, ears, and fingers of his superior on the bridge or quarterdeck, and in his place we have the landsman, boy, coal passer, fireman, and stevedore."

With properly built, manned, and loaded ships, and the enforcement of discipline, the number of fatalities of the character of that which overtook the passengers on the "Bourgogne" would be greatly lessened. No complaints are heard as to the character or abilities of the officers of the French liner, but the crew exhibited themselves as a maddened, brutish, and mutinous mob. Whose was the fault—the officers, the owners, or the lax laws that permitted the shipping of such a crew and yet failed to provide for their proper handling? To-day all the great railway corporations are at especial pains to secure employes of an approved type of health and manhood—men quick to act in emergency, and of sound physical and mental condition. Were such men selected for the crew of the "Bourgogne," or are such generally found among the masses who "go down to the sea in ships" as a means of livelihood? Are the dangers of railway travel and transportation greater and more imperative than those constantly accruing to navigation of the broad seas, and are the duties devolving upon railway employes generally such as to require higher mental and physical qualifications? Quite the reverse! The practical knowledge demanded of the able seaman is not to be gained in the course of a month or even a year; but the brakeman can master his duties in thirty days.

What was it that specially marked the differences in the two accidents that respectively sunk the "Victoria" and the "Bourgogne"? Discipline and manhood in the case of the warship as against mob rule and brutal selfishness on the Transatlantic liner. Had the "Victoria" carried women and children, it is safe to say that their safety would have been assured before a single attempt was made by the crew to save themselves.

It has already been remarked that, as regards many merchant craft, there is a woeful lack of boat drill and the experience that, in connection therewith, is had only by continual practice. This fact has frequently been pointed out and commented upon by the general press. On most river, harbor, and lake craft the boats are not only too few, but they are deficient in belongings and appurtenances. Especially is this true of "tramp" ships, and of the craft plying on the Great Lakes. To be sure, the boats required by law are there; but too often they rest in cradles; are tightly housed and lashed over by canvas, that requires from ten to twenty minutes to remove; the falls are not hooked on, but are elaborately wrapped and tied in canvas to keep out water, and boat plugs have not been seen since some annual painting. Life rafts, if they are carried, are often useless through age, and so fastened as to require from a quarter to half an hour of labor to launch. Watertight and collision bulkheads were put in by the builder, but the communications are too seldom closed, and in the hour of emergency they are liable to fail of their purpose.

Summing up: The additions to navigation laws should include examination as to the physical, mental, and moral qualifications of crews; frequent and rigid inspections of boats and crews, and definite knowledge as to efficiency; better quarters and food for men; the withholding of part of the wages until the termination of a definite period of shipment or till the close of the season; introduction of rigid discipline; ready methods of placing boats in the water: constant inspection of life preservers as to character and utility; and, finally, self-closing, interlocking communications between adequate watertight and fire bulkheads. As a protection against fire, the employment of fireproof instead of inflammable paints is worthy of serious consideration.

CONCENTRATION OF POWER.

The close of the present century is marked by a tendency in the engineering world toward concentration of energy and material. A quarter of a century since a craft 200 feet long was almost a rarity on the Great Lakes, and when the locks of the Welland Canal were extended 235 feet it was supposed they would fully meet any demand to be made upon them in the succeeding hundred years. To-day there are more large craft on these waters approaching 400 feet in length than those of 300 feet and less, and many exceed the greater figure—running, some of them, even up to 460 feet.

The same increase and concentration is also witnessed among the railroads. Heavier roadbeds and rails, and more capacious rolling stock, are everywhere observable, and the locomotive has reached a degree of development as regards size, weight, power, and economy little dreamed of a generation ago.

A very striking illustration of this concentration of power was afforded recently by a train hauled over the Pennsylvania Railway between Altoona and Columbia, which consisted of 130 cars, was nearly three-quarters of a mile in length, and that weighed 5,330 tons. It was made up as follows: Locomotive 118 tons, other rolling stock 1,519 tons, freight (coal) 3,693 tons.

THE VALUE OF A NAME.

The general press have taken to speculation and discussion regarding names to be attached to such ships of Cervera's fleet as may be saved to the purposes of the United States navy.

But why should these names be changed? Are not the present titles suitable, marking a notable victory; and will they not illustrate and perpetuate history?

The "Macedonian," captured from Great Britain by the man-of-war "United States"—popularly known in the service as "The Old Wagon"—was for over half a century one of the Naval Academy fleet, and a beautiful type of the old time sailing frigate. She remained the "Macedonian" to the last, and it is to be hoped another "Macedonian" will ere long appear in the Naval Register.

In the English service it has long been a rule to perpetuate the names of ships that are of historical interest, either as captors or captured. The sixth "Royal Sovereign" and eighth "Revenge" are now in commission. The "Victory," "Triumph," and "Revenge" recall the three flagships of the fleet that fought and scattered the Spanish Armada; and the first and last named mark two notable victories over the French and their allies in the days of the First Empire. The "Shannon" keeps alive the fact that a ship of that name battled successfully with the U. S. "Chesapeake." What are the meanings of "Barfleur," "Bonaventure," "Foudroyant," "Hermione," "Imperieuse," "Neptune," "Temeraire," "Sans Pareil," and others that still hold a place in the Admiralty list?

By all means let us have naval designations that possess historical significance, as well as those that perpetuate the names of States, cities, and men. Let us have a new "Guerriere" and "Constitution," the old ones having been sold; a "United States," a "Constellation," a "Java," as well as a "Maria Theresa," "Vizcaya," and "Cristobal Colon," provided these latter can be saved. We already have a "Kearsarge," an "Essex," and an "Atlanta." All these and many others have a place in our history, and are far more calculated to appeal to national pride and patriotism than the names of deceased gods and heroes, such as "Ajax," "Jason," and "Amphitrite." Neither national policy nor the size of our navy suggests a "Terror" or a "Dictator." Let foreign countries keep these latter names with others of the kind. Our list of States, cities, and mountains will supply all needs for a century to come, but the demands of historic titles should not be forgotten or ignored.

PORTO RICO'S COMMERCE.

There is now every prospect of Porto Rico becoming annexed to the United States, and the statistics of her foreign trade show that our new island territory is well worth the heavy price which we have had to pay for it. In 1896 Porto Rico's foreign trade amounted to the very considerable sum of \$36,624,120, and, for the first time in more than a decade, the value of exports exceeded that of the imports. There is little doubt that American enterprise would, within a very short time, almost double the value of exports, and our ownership of this beautiful island will enable us to have a greatly increased market for our agricultural products and for our manufactured goods; but even now we come second to Spain as regards trade with Porto Rico.

Its foreign trade is conducted chiefly with Spain, the United States, Germany, Great Britain, and France. Of all the merchandise imported and exported by the island during the four years, 1893 to 1896, fully 85 per cent, measured in value, was exchanged with the six countries named. Naturally Spain received the largest share of the trade, having an average of \$9,888,074 a year. The United States ranks second, with the yearly average of \$6,845,252. Cuba's trade with Porto Rico averaged \$4,606,220; Germany's was \$3,050,334; and

that of the United Kingdom was \$2,863,930, and of France \$2,201,687.

Agricultural products make up a large part of the island's imports and nearly all her exports. The value of the agricultural imports in 1895 was \$7,171,352, and of the non-agricultural imports \$9,664,101. The agricultural exports were valued at \$14,573,366, and the non-agricultural at only \$617,490. Rice, wheat flour, and hog products are the principal imports, comprising nearly two-thirds of the total agricultural imports. The imports of rice in 1895 were valued at \$2,271,819. Wheat flour was imported to the extent of 170,460 barrels, worth \$1,023,694. The hog products imported were valued at \$1,274,618. Vegetable products played the most important part in the agricultural imports. Breadstuff imports had a total value of \$1,144,017, and meat products imported were valued at \$1,531,986.

Cotton fabrics lead the non-agricultural imports, their value in 1895 being \$2,070,667. The imports of fish amounted to \$1,918,107; of wood and its manufactures, \$840,511; of leather and its manufactures, \$711,417. The imports of tobacco in its manufactured forms amounted to \$692,333. Iron and steel and their manufactures, not including machinery and apparatus, were imported to the extent of \$658,413; and the imports of machinery and apparatus were valued at \$344,879. The value of the imports of the manufactures of hemp, flax, jute, manila, etc., was \$408,974. Other important non-agricultural imports were: Soap, \$248,571; paper and pasteboard and their manufactures, \$196,197; mineral oils, crude and refined, \$169,629; cotton yarn and thread, \$154,964; woolens, \$154,947; paraffin, stearine, wax, spermaceti, and their manufactures, \$151,995; glass and glassware, \$125,688; coal and coke, \$124,536.

Coffee and sugar, the leading products of the island, comprise in value fully 85 per cent of all the merchandise sent to foreign ports. The quantity of coffee shipped in 1895 was 40,243,693 pounds and its value was \$9,159,985; the exports of sugar amounted to 132,147,277 pounds, valued at \$3,905,741. In addition to the sugar, \$539,571 worth of molasses was shipped, making the total value of sugar and molasses exported \$4,445,312. Leaf tobacco is the next most important export, the amount in 1895 being 3,665,051 pounds, valued at \$673,787. Other important exports were: Cattle, \$141,816; maize, \$69,410; hides, \$53,799; fruits and nuts, \$10,880; distilled spirits, \$9,466. Guano is the only important non-agricultural export. In 1895 the exports amounted to 15,491,476 pounds, valued at \$610,921. The value of all the other non-agricultural exports was only \$10,000. Porto Rico's export of coffee has more than doubled in ten years.

Porto Rican coffee is shipped principally to Spain, Cuba, Germany, Italy, and Austria-Hungary, Spain receiving 16,405,900 pounds in 1896, and Cuba 15,577,710 pounds, together more than half the total export. France bought 11,306,689 pounds. To the United Kingdom only 334,119 pounds were shipped, and to this country only 322,591 pounds.

The British East Indies sent Porto Rico 28,865,623 pounds of rice in 1896, Germany sent 26,100,840 pounds, and Spain sent 12,977,220. The import of rice from all other countries was only 2,819,566 pounds. The United States shipped \$944,418 worth of flour, leaving only \$24,129 worth for Spain, the United Kingdom, and France. This country also shipped \$1,342,104 worth of hog products to Porto Rico in 1896, all but \$13,337 of the total import.

The United States take more than half the export of sugar and molasses. Of the 122,946,335 pounds of sugar shipped from Porto Rico in 1896, 71,875,614 pounds came here, and 43,600,064 pounds went to Spain. The United States received \$331,646 worth of the molasses exported in 1896, and the United Kingdom and the British possessions received the rest, which was worth \$161,976. No molasses is exported to Spain or Cuba, but these countries get three-fourths the tobacco. Of the 2,219,907 pounds shipped in 1896, Cuba received 2,160,347 pounds and Spain 1,375,751. Shipments of Porto Rican tobacco to the United States are rare.

Spain's trade with Porto Rico increased in value from \$4,929,799 in 1887 to \$12,644,955 in 1896. The chief gain was in the increase of Spanish exports to the island from \$2,411,216 in 1887 to \$7,268,498 in 1896. During the same period the value of the imports from Porto Rico advanced from \$2,518,563 to \$5,376,457. Coffee and sugar constitute in value about nine-tenths of the total imports, excluding coin and bullion. After coffee and sugar the most important agricultural imports from Porto Rico are leaf tobacco, cacao, hides and skins, and fruits. Spain's non-agricultural imports from Porto Rico amount to less than \$100,000 a year, and are principally bags and sacks, tobacco manufactures, and guano.

Spain's exports to Porto Rico are three-fourths non-agricultural products. Cotton fabrics constitute nearly a third of all the merchandise shipped during 1892-96, the annual average valuation being \$1,581,706.

It will be observed no account is taken of the growths that afford most valuable woods for cabinet and special purposes, such as mahogany, rosewood, satinwood, grenadille and manzanilla, some of which readily command \$100 to \$150 per ton.