

(soda ash). It is best when carbonates and sulphates are both present to attack them separately, first with caustic soda, and then with soda ash. This treatment will have far better effect than the joint action of the two together. Sulphate of lime may be very successfully attacked by common salt. While salt does not in any way effect iron, it should only be used just prior to cleaning out, and the boiler should be thoroughly washed as a saline atmosphere tends to rust the plates above the water line; this fact may be of great use in case of obstinate sulphate of lime scales.

While an engineer can certainly help his boiler by soda, salts, etc., it is certainly best both for owner and engineer to have expert chemical supervision.



### THE UNITED STATES MERCHANT MARINE.

The Marine Review, of Cleveland, recently published a folder designed to call attention to the present condition of the United States merchant marine. The folder is got up in a most striking way, being printed in red and blue, so arranged as to emphasize and "clinch" every point made. The front page contains a cut of the United States flag over the legend: "The flag that is about to become extinct upon the ocean highways of the world." Following are some interesting statements culled from the circular:

In 1861 American ships carried 65 per cent. of our foreign commerce. In 1903 we carried less than 8 per cent. of it. Figure out what it will be in 1910.

In January, of this year, 292 steamships passed through the Suez Canal. These were divided according to nationality, as follows: British, 173; German, 42; French, 16; Dutch, 14; Russian, 11; Austrian, 8; Italian, 7; Japanese, 6; Turkish, 6; Norwegian, 4; Spanish, 2; Egyptian, 1; Danish, 1; American, 1.

Notice where the Stars and Stripes appear in this table.

The American tonnage of the Great Lakes alone exceeds in capacity the merchant marine of any other nation except Germany and Great Britain. Thanks to wise coasting laws and to the "protection" of the rapids and channels below Niagara.

On the question of "protection," we are inconsistent to the limit. Nearly all free trade countries make an exception in favor of their merchant marine, and support them to a greater or less degree, while the United States with its high tariff likewise makes an exception and practically refuses all sort of support or recognition. Strange how we reverse ourselves.

We have the largest seacoast line in the world. And get the least benefit.

We have the greatest number of navigable rivers leading into the sea on earth. They carry our commerce to the foreign ships in wait for it.

We have more harbors than any other two or three countries in the world. And those on the coast display more foreign than American flags.

We have more railroads connecting our seaports with the interior than all the other countries in the world combined. And they carry freight cheaper and faster than elsewhere.

We have more timber, coal, ore, mines, farms, iron and steel plants, and manufacturing establishments of all kinds than any other three nations on earth. And if accorded the same treatment we would quickly have the largest merchant marine.

We raise more corn, wheat, cattle, farm products, than any other three countries. And should retain the benefits of doing our own marketing.

In a year recently 55,764,000 bushels of American grain were shipped from New York alone, and not a bushel in an American vessel. Isn't that a shameful condition?

During 1903, not an American ship entered or cleared from a single port in Austria-Hungary, Denmark, Germany, Greece, Italy, Netherlands, Norway, Russia, Sweden or Turkey. Are we such a wonderful nation after all?

If a great European war should arise and the transportation facilities upon which we depend should be withdrawn

by their owners entirely, what would happen to the foreign trade of \$1,500,000,000 yearly? It would cease to exist, and the war would cost the American people more than it would cost the combatants.

Of all the steamships in the world of 14 knots speed and upwards, 80 per cent. are assisted by their respective governments, and of those capable of going 16 knots, all but six are assisted by the country whose flag they carry. Are all the other nations fools?

Great Britain aids its shipping interests by annual payments of over \$6,000,000. Result: John Bull controls the shipping of the world.

American capitalists hold over \$200,000,000 worth of stock in foreign steamship companies. Why not encourage the investment of this money in America?

A very trifling expenditure, comparatively speaking, by our Government will warrant the expenditure each year of from \$50,000,000 to \$100,000,000 for new ships, and this money would be expended in shipyards, engine shops, boiler shops, factories, mills and mines of our whole country, and as a nation and as individuals we would all be better off.

Our navy is supposed to be built largely to protect our shipping, but as a matter of fact, there are more officers and sailors on our naval vessels than on the merchant ships carrying the Stars and Stripes.

We have spent in improving our rivers and harbors since 1879 over \$321,000,000.

In many cases these improvements were to benefit foreign ships principally. Patriotism is supposed to commence at home.

During seven years past we have spent over \$437,000,000 upon our navy. Then our army for seven years past has cost over \$526,000,000. Millions and millions for anything but the flag upon the sea.

Ought we not to be able to spare out of all this just two or three millions for a merchant marine that, unlike our army and navy, would bring us a profit many, many times over what it cost? All other leading countries of the world look at it in this way.

The amount paid in freight annually to vessels in the foreign trade of the United States is \$200,000,000, of which \$184,000,000 is earned by foreign bottoms. No bill to aid shipping has ever been introduced in Congress which calculated to expend in ten years out of the treasury one-quarter of what would be annually earned by American ships under its provisions. Isn't that buying a business for American citizens mighty cheap compared with our expenditures in Cuba, Philippines, Panama, etc.?

France helps in various ways to the extent of over \$7,000,000 a year. And is coming to the front fast.

Germany pays over \$2,000,000 and has only just started. Keep your eye on Germany.

Austria-Hungary to aid its little commerce pays the trifle of \$1,724,000. And can shame the United States.

Spain paid last year \$1,629,000 to one line alone. Spain may be without a navy, but they are doing business.

Little Japan expended \$3,492,000 in this way. What nation is more progressive than Japan?

And the United States pays altogether \$988,000. At the foot of the class in every way.

Other countries do this to facilitate the carrying of the mails and to open up trade to the foreign countries. Each package of mail is a commercial traveller.

For the first time in a hundred years not a ship is under contract in the United States or being built for American commerce on the seas. What are we coming to?

When those now built are worn out, the American flag will disappear from the oceans of the world. Wake up!

Following are the number of vessels and tonnage which passed through the Suez Canal during June, 1904:

Austrian, eight of 28,527 tons; Belgian, one of 2,414 tons; British, 187 of 633,476 tons; Danish, two of 7,713 tons; Dutch, 18 of 46,536 tons; French, 20 of 63,242; German, 32 of 120,119; Italian, 10 of 28,876; Norwegian, one of 671; Spanish, two of 7,556; Turkish, one of 1,383.

Puzzle: Find the American flag.