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The Editor is always glad to receive for examination illustrated articles on subjects of timely interest. If the photographs are sharp, the articles short, and the facts authentic, the contributions will receive special attention. Accepted articles will be paid for at regular space rates.

## THE TRUTH ABOUT THE GERMAN "DREADNOUGHTS."

To anyone who makes a dispassionate study of recent German naval developments, there is nothing to indicate that her present activity in the construction of battleships of the "Dreadnought" type is aimed at any particular power, or has anything in the nature of an intended challenge. The true motive is to be found in the lessons which were taught by the Japanese war, when it was demonstrated to the minds of most, though not by any means of all, naval experts, that the battleship of the future would be armed entirely with 12-inch guns. Now, although this fact was of vital importance as affecting the rating of all existing navies, there was none that was so seriously affected as the German navy, and this for the following reasons:

At the time of the Japanese war, the effective battleship fleet of the Germans, built and building, included twenty vessels. Ten of these, due to be completed between the years 1904 and 1908, were ships of the first class, carrying four heavy armor-piercing guns in the main battery, and a large number of rapid-fire guns in the secondary battery. Except in point of size and steaming radius, they were comparable with the best battleships of other nations. The ten earlier ships, completed between 1900 and 1903, were of a decidedly inferior type, carrying in their main batteries a light gun of only 9.4-inch caliber. These earlier ships were somewhat discredited, even before the Japanese conflict; and it can readily be seen that the enhanced value given to the big gun by the results of the battle of Tshushima, placed these ten vessels outside of the battleship class, and actually relegated them to the second line of defense, leaving the German navy with only ten first-class line-of-battle ships.

Long before the "Dreadnought" was launched, the German naval authorities realized that, if their fleet was to maintain its relative standing among the world's navies, there must be a very large increase in the number and power of ships of the first class; and there can be little doubt that this increase was contemplated before the first "Dreadnought" had taken the water. It is the German policy to build always according to a definite programme, extending over a period of years, and the authorities have determined that, in order to replace the ten battleships above referred to, and, in addition to this, make the annual appropriations for new ships which are necessary to maintain the relative position of the German navy among the powers, a programme calling for the laying down of four vessels of the "Dreadnought" type every year would be necessary. The programme was adopted; the necessary building slips were prepared; large additions were made to the German plants for the manufacture of guns and armor; and the construction of the ships has progressed strictly according to schedule.

There is nothing in these facts to warrant the statement that Germany is attempting to outbuild either Great Britain, the leading naval power, or the United States, which at present holds the second position. It was Germany's weakness in battleships, and not, we believe, any sudden desire for aggrandizement or conquest, that instigated her present ambitious programme. Had she not built at the rate she is now building, she would in a few years' time have ranked as a poor third among the naval powers, and her navy would not have been commensurate with her vast and rapidly increasing merchant marine.

That she is not challenging, and probably has no disposition to challenge, the British navy for the premier position is shown by a dispassionate review of the facts of the case.

By the year 1912 there will be available thirteen German "Dreadnoughts." On the same date, including the ships recently authorized by Parliament, Great Britain will have in commission twenty "Dread-

noughts." If the colonies should build the six ships that have been suggested, she will, at that date, have twenty-six. But in estimating the strength of the two navies, it is altogether absurd to omit consideration of the ships of the pre-"Dreadnought" period. Of these, Great Britain in 1912 will possess forty and Germany twenty, but if we omit the ten ships that are armed with 9.4-inch guns, Germany will have only ten pre-"Dreadnought" battleships of the first class. At that date Great Britain will possess of armored cruisers thirty-five, and Germany but eight. The British battleships of the older fleet carry 152 12-inch guns. The German battleships mount only 40 11-inch guns. The British cruisers carry 68 9.2-inch guns, as compared with 6 9.4-inch guns carried by the German cruisers.

In conclusion, we would utter a word of protest against the sensational and inflammatory methods which of late years have been adopted by the press, the various navy leagues, and the legislative representatives of the people, in the endeavor to secure the necessary appropriations for naval expansion. We ourselves believe that there is a legitimate naval expansion, whose extent should be sufficient to insure the integrity of the people concerned, the security of their sea-borne commerce, and the replacement of the older warships as they become worn out or obsolete. We believe, also, that a powerful navy, if it be commensurate with the needs of the nation, is one of the best guarantees of peace, just as a weak navy inadequate to the protection of a wealthy people is an invitation to aggression. But these legitimate considerations are a very different matter from the motives of aggrandizement, jealousy, fear, and even active hatred, which much of the recent discussion of naval armaments has tended so greatly to provoke.

## "HOUSE FLY" SHOULD BE CALLED "TYPHOID FLY."

The house fly, which we have hitherto in our ignorance considered as a harmless creature, or, at the worst, simply a nuisance, has been shown, as the result of scientific researches, to be in reality, judged from the standpoint of disease, a most dangerous insect. Dr. L. O. Howard, in his recent investigation of the economic loss through insects that carry disease, to which reference was made last week, devotes a chapter to the house fly as a carrier of typhoid bacteria. The facts brought out are so startling, and so vitally affect the health of the community, that we are publishing this chapter in the current issue of the SUPPLEMENT. Limitations of space prevent anything more in the present notice than a brief summary of the salient features of the report.

At the outset emphasis is laid upon the fact that the term "typhoid fly" is open to some objection as conveying the erroneous idea that this fly is responsible for the spread of typhoid only. As a matter of fact, the insect is dangerous from every point of view, and is liable to spread the bacteria of all the known intestinal diseases. The true connection of the so-called house fly with typhoid fever and the true scientific evidence regarding its rôle as a carrier of that disease, have only recently been worked out. Cells in 1888 fed flies with pure cultures of the typhoid bacillus, and inoculations of animals were also made, proving that the bacilli which pass through flies are virulent. Dr. George M. Koeber, in his report on the prevalence of typhoid fever in the District of Columbia, has drawn attention to the danger of the contamination of food supplies by flies that have been in touch with typhoid patients. The prevalence of typhoid fever in the camps of the United States army during the Spanish war brought about the appointment of an Army Typhoid Commission, which found: First, that the flies swarmed around the sanitary quarters of the hospital, and then visited and fed upon the food prepared for the soldiers in the mess tents. Secondly, that officers whose mess tents were protected by screens suffered proportionately less from typhoid than those whose tents were not so protected. Thirdly, that typhoid fever gradually disappeared with the approach of cold weather and the consequent disabling of the fly in the fall of the year. The final conclusion was that the fly carries the typhoid bacillus either by the adherence of infected matter to its feet, or within its own digestive organs.

In 1899 Dr. Howard made a study of the typhoid or house fly, in its relation to country and city sewage, and he made a further investigation of the species of insects that are attracted by food supplies in houses. In this investigation he found that the typhoid or house fly constituted 98.8 per cent of the whole number of insects captured in houses throughout the whole country, under the conditions indicated above. The importance of this insect as a carrier of the dreaded disease in army camps, as shown in the Spanish war and in the Boer war and in the camps of great armies of laborers engaged in gigantic enterprises, like the digging of the Panama Canal, is obvious. But it is certain that, even under city conditions, the influence of this fly in the spread of disease has been greatly underestimated.

In a report to the Merchants' Association of New York, based upon numerous observations of the relation of flies to intestinal diseases, which was published in December, 1907, it was shown that the greatest number of flies occurred in the weeks ending July 27th and August 3rd; and that the deaths from intestinal diseases rose above the normal at the same time at which flies became prevalent; culminated at the same high point; and fell off with slight lag at the time of the gradual falling-off of the prevalence of the insects.

A certain species of mosquito has been demonstrated to be the cause of the spread of malaria. Yellow fever is caused by another kind of mosquito; and now we know that the supposedly harmless house fly is an active agent in the distribution of intestinal diseases. In view of these facts, Dr. Howard's contention that this familiar household insect should henceforth be known as the "typhoid fly" would seem to be well made.

## REDUCING THE NOISE OF ELEVATED ROADS.

It is surprising that during the recent agitation in this city against unnecessary noises, more attention was not given to the greatest of all noise producers, the elevated railways; for it is certain that if the roar of elevated trains could be abolished, the most distressing source of the city's clamor would be removed. The din of the elevated roads is not due to faulty track. So heavy is the traffic, that it is imperative upon the company to keep the rails, joints, and ties in good condition; and we believe the maintenance of these tracks is comparable with that of our best steam railroad systems. The excessive noise is due largely to the fact that the track is laid upon cross ties, and that the concussions of the wheels, especially when passing over the joints, is imparted to the steel framework of the trusses and columns, which acts as a huge sounding board to intensify the din.

The present Chief Engineer of the Manhattan Elevated Railroad, Mr. George H. Pegram, some years ago planned an elevated road structure for Kansas City, based entirely on the use of longitudinal ties placed in steel troughs for a roadbed; and speaking of the undesirability of cross ties on an elevated structure, Mr. Pegram says that he has always believed that cross ties are out of place on an elevated structure. On the ground, where they are necessary to distribute the weight over the surface, they have proved the best construction; but they are not needed for this purpose on an elevated road, and their effect there is to darken the street below, to intensify the noise, increase the labor of cleaning the structure, and lead to unpleasant drippings after a fall of snow or rain.

The question of noise from the operation of trains on the elevated roads in Chicago is causing much agitation in that city at the present time. In the outlying districts of the city this is not so important a matter; but in the heart of the business district, where the different elevated lines terminate, they go around a "loop" some two miles in extent. On account of its location here between the high office buildings and in some of the principal thoroughfares, the noise from the elevated trains has proved to be a very disagreeable feature.

Many plans for lessening this noise have been submitted, but it has been found most difficult to devise any plan which would subdue the noise to the desired extent and at the same time leave enough light for the street below not to make it objectionable. The problem is to reduce the noise without taking away the light, while the matter of expense is also important. Among the plans submitted to the Traction Expert of Chicago is one by Mr. Carl R. Klok, which is based on the fact that the roadbed of cross ties on an elevated structure tends to increase and intensify the noise caused from the operation of trains, and that trains running over rails resting on a level, continuous, uninterrupted surface or support will cause much of the vibrating noise to "sink into" or be absorbed by it, even though the support be composed of ties. In order to bring about such a continuous support to the rails, the plan under consideration provides that two out of every three cross ties be removed, and in their place smaller ties be placed lengthwise under the rails and between the remaining ties. Under this arrangement the rails rest on a continuous and uninterrupted support, thus insuring a great reduction of the noise from running trains and a more firm support to the rails at the joints, where most of the noise is produced. The gage of the track is maintained by the remaining cross ties. In the steel trough system, as used on the Forth Bridge, Scotland, each rail is laid directly upon a bed of timber placed in the bottom of a continuous trough of steel. This has the advantage of providing a continuous guard rail for each wheel in case of derailment. For city use it would have the further advantage of shutting out the least possible amount of light from the streets below.