GERMANY THE MEXTURE?

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During the Two Years of Hit-and-Miss Submarine
Campaigns Germany Had Learned That It
Was Too Costly, in Ships and Trained Crews,
to Continue Attacks on a Large Scale Against
the Splendidly Defended British Isles—All
Teuton Devices Failed to Break Through

This Lesson, Once Learned, Determined Von Tirpitz and His Cohorts to Insist Upon an Unlimited Warfare Against All Merchant Shipping Regardless of Nationality and in Parts
of the Ocean Where It Would Be Impossible
for England to Combat the U-Boats

SUBMARINE warfare is a very exact and difficult science. Besides the skilled captain, competent first officers, wireless operators and artillerymen, engineers are needed. Each man, too, must be a "seadog." Some of the smaller submarines toss like tubs when they reach the ocean, and only toughened seamen can stand the "wear and tear." Hence the weeks and months which are necessary to put the men in order before they leave home for their first excursion in sea murder.

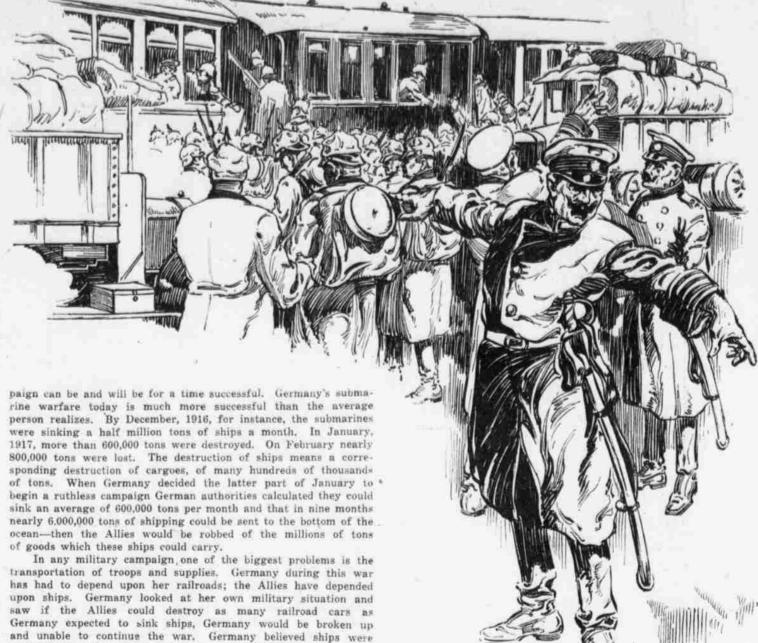
But Germany has learned a great deal during two years of hit-and-miss submarine campaigns. When Von Tirpitz began in 1915 he ordered his men to work off the coasts of England. Then so many submarines were lost it became a dangerous and expensive military operation. The Allies began to use great steel nets, both as traps and as protection to warships. The German navy learned this within a very short time, and the military engineers were ordered to perfect a torpedo which would go through a ste ! net. The first invention was a torpedo with knives on the nose. When the nose hit the net there was a minor explosion. The knives were sent through the net, permitting the torpedo to continue on its way. Then the Allies doubled the nets, and two sets of knives were attached to the German torpedoes. But gradually the Allies employed nets as traps. These were anchored or dragged by fishing boats. Some submarines have gotten inside, been juggled around, but have escaped. More, perhaps, have been lost this way.

Successfully Baffling the U-Boats

Then, when merchant ships began to carry armament, the periscopes were shot away, so the navy invented a so-called "finger-periscope," a thin rod pipe with a mirror at one end. This rod could be shoved out from the top of the submarine and used for observation purposes in case the big periscope was destroyed. From time to time there were other inventions. As the submarine fleet grew the means of communicating with each other while submerged at sea were perfected. Copper plates were fastened fore and aft on the outside of submarines, and it was made possible for wireless messages to be sent through the water at a distance of fifty miles.

A submarine cannot aim at a ship without some object as a sight. So one submarine often acted as a "sight" for the submarine firing the torpedo. Submarines, which at first were unarmed, were later fitted with armor plate and cannon were mounted on deck. The biggest submarines now carry six-inch guns.

Like all methods of ruthless warfare, the submarine cam-



"In any military campaign one of the biggest problems is the transportation of troops and supplies. Germany during the war had to depend upon her railroads."

Germany was looking forward to the Allied offensive which was expected this spring. Germany knew that the Allies would need troops and ammunition. She knew that to manufacture ammunition and war supplies coal was needed. Germany calculated that

Rattoffelfatte

"When Germany decided the latter part of January to begin a ruthless campaign German authorities calculated they could sink an average of 600,000 tons per month

> > A GERMAN "POTATO CARD"

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if the coal importations to France could be cut down a million tons a month France would not be able to manufacture the new sary ammunition for an offensive lasting several months.

German Expectations From "Ruthlessness"

Germany knew that England and France were importing the sands of tons of war supplies and food from the United State Judging from the German newspapers which I read at this the every one in Germany had the impression that the food situation England and France was almost as bad as in Germany. England and France was almost as bad as in Germany. England and France was almost as bad as in Germany. England Germany for Switzerland on his way to Spain he took to cases of eggs which he had purchased in Denmark. One night a reception in Berne one of the American women in the Gemparty asked the French Ambassador whether France really be enough food. If the Americans coming from Germany had impression that the Allies were sorely in need of supplies of can see how general the impression must have been throughed Germany.

When I was in Paris I was surprised to see so much fool and to see such a variety. Paris appeared to be as normal in the respect as Copenhagen or Rotterdam. But I was told by American women who were keeping house there that it was becoming men and more difficult to get food.

After Congress declared war it became evident for the first time that the Allies really did need war supplies and food from the United States more than they needed anything else. Lender and Paris officials publicly stated that this was the kind of ald the Allies really needed. It became evident, too, that the Allies are only needed the food, but that they needed ships to carry supplies across the Atlantic. One of the first things President Wilson the was to approve plans for the construction of a fleet of 3000 woods ships virtually to bridge the Atlantic.

(CONTINUED TOMORROW)

PICTORIAL PRESENTMENTS OF PERSONS AND PLACES OF PRESENT PROMINENCE



to the Allies what railroad carriages are to Germany.

The General Staff looked at the situation from other angles.

During the winter there was a tremendous coal shortage in France

and Italy. There had been coal riots in Paris and Rome. The

Italian Government was so in need of coal that it had to confiscate

even private supplies. The Grand Hotel in Rome, for instance,

had to give up 300 tons which it had in its coal bins. In 1915

France had been importing 2,000,000 tons of coal a month across

the Channel from England. Because of the ordinary loss of ton-

exports 400,000 tons a month by an ordinary submarine campaign

Germany calculated that if she could decrease England's coal

nage the French coal imports dropped 400,000 tons per month.

she could double it by a ruthless campaign.

PROMISING ASPIRANTS FOR THE HIGH SCHOOL GRIDIRON CHAMPIONSHIP
The football squad of Frankford High is out for the honors of the 1917 season. It is showing
good results under the training of Coach Williams, who appears in the front row, wearing a white
sweater.



RED CROSS WORKERS SELL PIPES TO AID OUR SOLDIER MEN
Mrs. F. S. McCormick (left) and Miss B. Phillips (right), members of Independence
Square Auxiliary, No. 276, are disposing of these "smokers' delights," made from mochanuts, with gratifying rapidity.



ASKS SI EGE EVERY SOLDIER AND SAILOR
And with that aim Joseph Lee, of Bor.on, president of the Playgranted and Recreation cases sign to the playfront efficient to provide a wife if the journal city eccention
contact in every military and payal cantenness.



HEP! HEP! HEP! HERE COME THE MEN OF DUNMORE

The delegation from the thriving coal-mining town of Lackawanna County made a brave showing as they matched to their training quarters at Camp Meace, so the EVENING LEGER photographer couldn't resist the chance to snap them.



WIFE OF GREAT BRITAIN'S LORD CHIEF JUSTICE
A new photograph of Lady Reading, who accompanied her husband to Washington, where the is entertaining lavishly at her residence on State-ath atreet.