## The Future of the Submarine

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"OLD England had a nafy;
Dey had de fifteen-inch,
So many und so long dey vas
Dey tink dey hav a cinch.
De pootiest shells in all de vurld.
Dey vayed 'pout two tausend pound;
Und efery time dat Vinston shpeak
He make der vurld resound.

Old England had a nafy;
I dells you it cost her dear;
Dey plewed in more ash dvendy-vife
Off millions efery year;
Und vhenefer dey launch anofer ship
De English gifes a cheer,
I dinks dot so vine a nafy
Nefer sailed dis erdlich sphere.

Old England had a nafy; Dey haf vun 'Victory,' Vun 'Driumph,' vun 'Invincible,' Dot sailed upon der sea. Dey haf two hoondred 'Dreadnought,' Und super-Dreadnoughts ash vell; But de bride of all der navy Vos der prave 'Unsinkable.'

Old England had a nafy; Like fans der men vos rooty, Ven out of Luxhafen der come Vun klein' Unterseeboote. Und ven der nafy see him come Dey dink of der Chudgment Day. And ash qvick as dey can vot vos left of dem Vos sguttling out of der vay.

Old England had a nafy.
Vhere ish dot navy now?
Vhere ish de lofely brazen cloud
Dot vos on Vinston's prow?
Vhere ish de Mishtress of de seas
Dot kept dem bottled tight?
All goned away mit de torpedo —
Avay in de evigkeit!"

Hans Breitman in 1915.

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Until the war broke out, nobody was sure as to whether there was any value in the submarine. In England we enjoyed, even more than we were edified by, the spectacle of British Admirals quarrelling like schoolboys, saucing each other like lydies on the lush, and intriguing against each other like Mexican Generals, on account of the divergence of their views. For all such views were academic and speculative. The lessons of manoeuvres taught nothing but the theories of the umpire. It was all guesswork.

There is a snake in Burma called Russell's Viper. It is the only animal which makes the Buddhist violate his first principle of not taking life. For it is a gamble; if you see it first, you kill it; if it sees you first, it kills you. The submarine is the Russell's Viper of the water, and the practical question was "Would it see you first?" This could not be tested until the war. Old gentlemen in Pall Mall Clubs wrote elaborately to the Times the most convincing arguments; but nobody knew, as we know now.

In this fog of doubt, the Admiralties could only go half speed ahead. They might be throwing their money into the sea. The frequent accidents to submarines acted as a further check on the development of the arm. If Germany devoted more time and money and thought to it, the reason was plain. It was a desperate throw. She could not beat England on the water, so she might as well try the U boats. If they failed, they failed. ("But screw your courage to the sticking-point; and we'll not fail.") Similar considerations made them spend enormous sums on Zeppelins. However, even Germany did not devote herself exclusively or even sufficiently to these new means of warfare. The conservative school had great influence, and the prestige of England was all against the innovation.

Now it is to be remembered that the present submarine is no more a fixed and perfect machine of its type than were the old high bicycle and the Wright aeroplane. The submarine of 1913 was a very ramshackle contraption. The problems had by no means been worked out, and there was no money to test new inventions. (It is not generally known that models which work perfectly may fail altogether when enlarged to full size; so that even the production of a new invention in miniature is not necessarily a good argument for taking it up.) The inventor was accordingly discouraged; he spent his time on things that promised more or less immediate return for his brains and capital. A man had to be a bit of a crank to spend his life at the solution of abstruse theoretical problems which never actualize when motor-cars and aeroplanes were all in the public eye. Everything conspired accordingly to retard the development of the submarine.

Before war had broken out a month, the Hague, Cressy and Aboukir were sunk in twenty minutes by a single submarine. Naval theory sank with them. The U had come to stay — even the little, slow, limited, dangerous bad old U! Such a coup paid for fifty failures.

The Germans recognized the fact immediately, and appraised it at its proper value. When England blusteringly swore to starve Germany out, the reply was simple — the proclamation of a Reign of Terror. Jack Tar has lost his courage. Under the White Ensign or the Blue, he has neurasthenia. (Perhaps we had better design him a "Yellow Ensign" for the future.) The British navy skulks in lonely harbors behind steel nets; it hardly dares the patrol of the North Sea. The Blue Water School and the Blue Funk School have amalgamated.

In this new circumstance, that no ship is safe from sudden disaster, the advantage is wholly with the continental power. It is easy to foresee that England will be crushed, if only that advantage be pressed home.

## IV

The first and most obvious duty of Grand Admiral von Tirpitz is to perfect the U boat as a weapon of destruction. Its primary function was for coast and harbor defense against warships; but its already enlarged cruising powers have enabled it to extend the definition of the word "coast" in a degree altogether unexpected.

Now comes the question: is there any limit to the possibilities of its improvement in this respect? I should not care to fix it. Now that every scientific or engineering brain can devote itself to the problem with every prospect of a reward like that of Wellington, be sure that surprises are in store.

I see a submarine with a cruising radius of 5,000 miles, and enough torpedoes to blow every ship in the British navy out of the water.

I see also a "mother submarine," unarmed, slow-moving, but protected with double netting against hostile U's, and loaded with relays of oil and torpedoes, putting to sea with careless courage in the face of any number of dreadnoughts, surrounded at a distance of many miles by her venomous brood of U boats.

I see also a boat fitted for fighting at long range, armed perhaps with a single 15-inch gun, gliding à fleur de l'eau, and so affording no reasonably visible mark to the battleships which she attacks.

I see also submarine transports, flat-bottomed craft, somewhat resembling those giant ferry-boats which carry trains in their bellies, each capable of carrying a thousand men. If they could make only five knots an hour, a fleet of them could still successfully invade England.

And of course I see, as everybody else sees, that it is only necessary to multiply the U boat of even the existing type by say a hundredfold in order to starve England into submission in a single month.

## V

If I have troubled to make these forecasts, which are hardly beyond the imagination of even an Englishman, it is to emphasize the fact that the day of island empires is over. If this is not so, it must be because Science is still not bankrupt, and will find a way to detect and destroy the U boat. But even if this happened, there are yet further possibilities. A ship of any kind is always a risk; this is the nature of things; it depends on the fact, which even Science is not likely to upset, that men cannot breathe as fish do. Thus the nation which depends on ships for its food supply is in a dangerous situation.

Presumably the power of offense will always be superior to that of defense, in this respect, just as a man with a basket of eggs is in peril of total loss, even if he win his fight with a man not so encumbered. The end of the matter must be that all ships will be driven from the sea, as soon as a war starts; and this means death to England.

The remedy is, however, simple. England must abandon her career of piracy and plunder. She must return to the good old days when she could feed herself and clothe herself; and she must learn to live in peace with all men. She has always persecuted her men of science in the name of the parody of religion with which she cloaks her infamies; and they have their revenge.

Let her restore the old worship; let her resume the pastoral and agricultural life; let her patriarchs execute justice and mercy; well and good. But no more industrialism-slavery; no more swindling oligarchy; no more smile-and-dagger diplomacy; no more gentleman-burglar world-power.

The Unterseeboot has changed all that.