

Fantastic Schemes for the Invasion of England

How England, for More Than 100 Years, Has Been Thrown Into Occasional Spasms of Terror by Suggested Plans of Conquest

At the present moment a large part of the population of England is in a state of acute alarm over the possibility of a German invasion of the island.

The form in which the invasion is feared varies from the possible Zeppelin raid to the most fantastic schemes.

The English newspapers are filled with cartoons intended to suggest the fantastic character of a wholesale German invasion, but the preparations made show that the English take the danger very seriously.

One picture shows the German army marching under the sea to England in divers' suits. This conceivably suggests to Englishmen the difficulty of reaching their island and at the same time acknowledges that the Germans are a people who take an enormous amount of trouble.

Ever since the Napoleonic wars the English have been in times of excitement accustomed to discuss the possibility of invading their country. Many Britons have loudly declared it impossible, but some excellent authorities, including Lord Roberts, have maintained the possibility.

Napoleon planned to invade the country with the aid of a great fleet of barges loaded with soldiers, and propelled by oars, and escorted by warships. A storm interfered with the first attempt and then events elsewhere made a renewal impossible.

Old prints of that period show that the English then discussed the most fantastic projects of invasion, just as they are doing to-day. An ingenious print, published in 1798, shows a huge French raft propelled by windmills conveying thousands of French soldiers. This was quite a

hensive method of invading England and they, the English, have made their arrangements to deal with it.

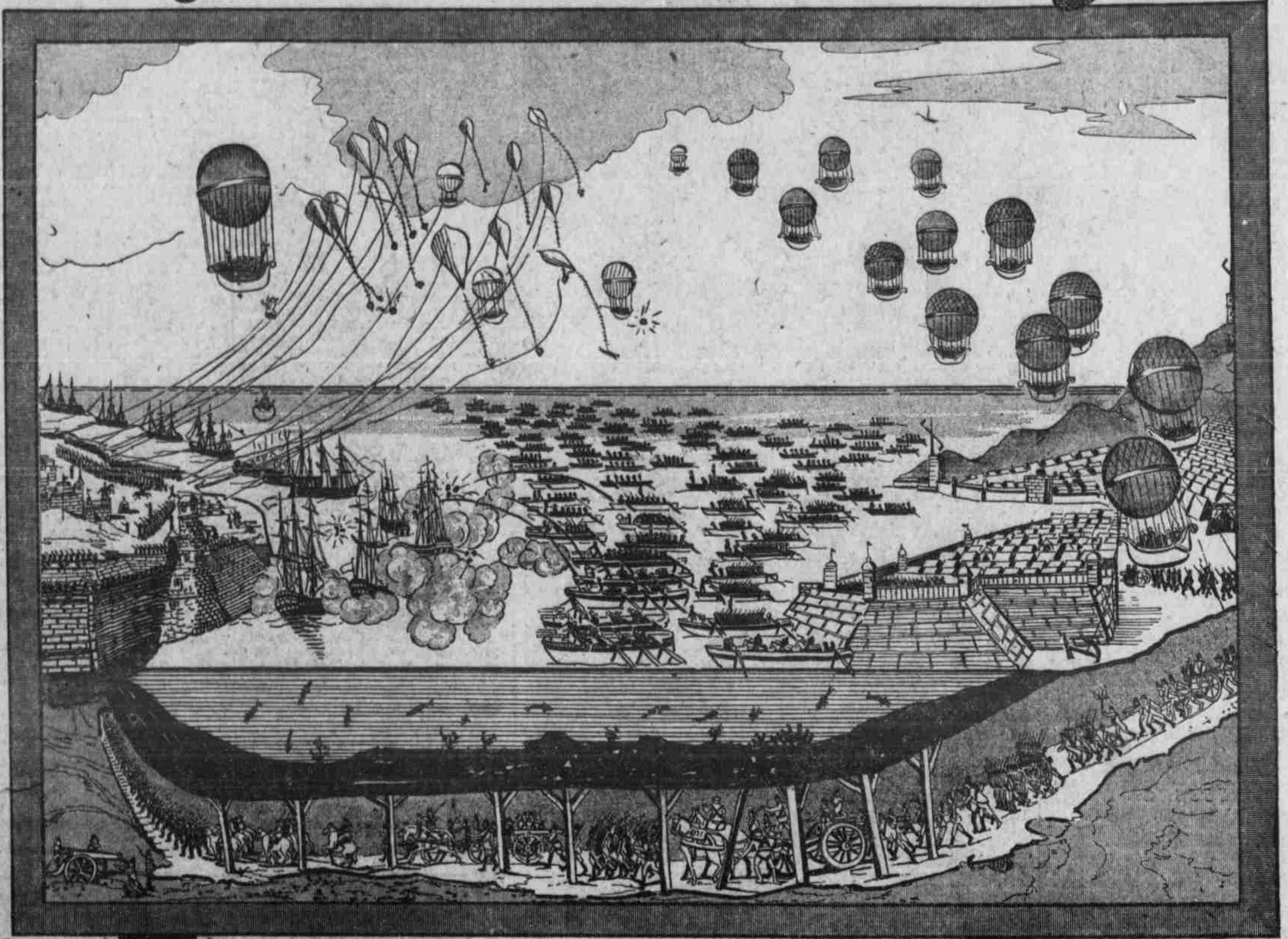
The ordinary Englishman thinks of two possible methods of invading his country—Zeppelin raids not being ranked as an invasion. These methods are (1) the seizure of one or more English ports by a tremendous German fleet and the landing of troops at them, and (2), the landing of troops from transports in small boats at some open unprotected part of the coast.

Englishmen were consoled by the assurance that these methods were practically hopeless, first, because the attack on a port would give the English plenty of time to concentrate troops in that direction, and, second, because the placing of troops in small boats would expose them to destruction by comparatively small forces ashore.

There is, however, a third method which promises better success. Its revelation came as a shock to some Englishmen. This method is by means of shallow lighters carrying 500 or 1,000 soldiers each. The men would step directly ashore from the lighters.

The practicability of this method was first revealed some years ago by Erskine Childers in a remarkable novel called "The Riddle of the Sands." He worked out down to the last detail the supposed German plan of invasion.

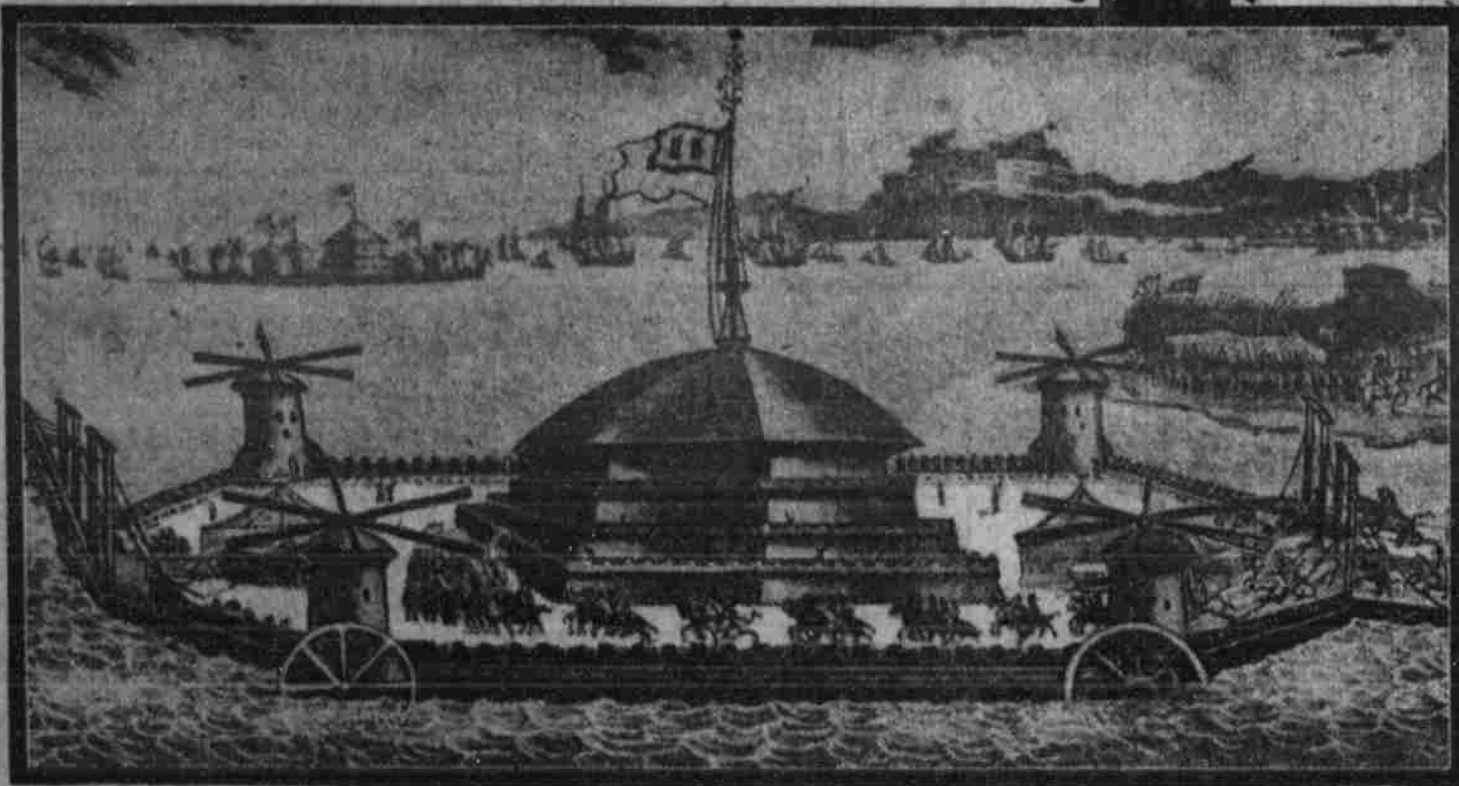
The lighters would be assembled secretly in the rivers that flow from Germany into the North Sea behind a fringe of islands. They would be piloted by German sailors thoroughly familiar with the British coast. The British fleet would be crushed or drawn in another direction by German feet, and an opportunity to



Above is a Curious Old Print Published in London in 1801, When Napoleon Was Preparing to Invade England. This Shows the French Army Secretly Approaching England's Shores by a Tunnel Under the Channel, While Balloons and Warships Aid the Attack. The Author of This Old Print Had a Clever Idea of the Possibilities of Future Warfare.

On the Left is Another Old Print of Napoleon's Time, Published in 1798, Showing the French Army Carried on a Huge Raft Ingeniously Propelled by Windmills and Bearing a Great Fort. Is It Possible We Shall See a Battleship or Floating Fort as Large as This?

On the Right is a Cartoon of To-day in the London Bystander, Fantastically Imagining the German Army Marching to England Under the Sea in Divers' Suits and Protected by Submarines. Some Features of This Scheme Are Not Incredible.



Emperor William's Submarine Infantry—From London Bystander.

clever idea, as steam was not then understood and wind was the best power known.

Another print shows Napoleon's army marching to Dover through a submarine tunnel, which they have constructed unknown to the English.

Sixty years later progress in engineering made a tunnel between England and France quite possible. The British military authorities then vetoed the plan, on the ground that it would destroy the security which the sea gave the country.

Today the tunnel is being built, and the authorities know that if it were completed it would be of immense value to England in co-operating with France.

The truth seems to be that the English authorities believe that the Germans have planned out a compre-

hensive method of invading England and they, the English, have made their arrangements to deal with it.

The only logical alternative is to dispatch an army of infantry with the lightest type of field guns in big sea-going lighters, towed by powerful but shallow draught tugs, under escort of a powerful composite squadron of warships, and to fling the flotilla, at high tide, if possible, straight upon the shore.

Such an expedition could be prepared in absolute secrecy by turning to account the natural features of the German coast. No great port was to be concerned in any way. All that was required was sufficient depth of water to float the lighters and tugs; and this is supplied by seven insignificant streams issuing from the Frisian littoral, and already furnished

with small harbors and sluice gates. All of these streams would have to be improved, deepened and generally canalized, ostensibly with a commercial end, for purposes of traffic with the islands, which are growing health resorts during a limited summer season.

Seaward the whole of the coast is yelied by the fringe of islands and the zone of shoals. Landward the loop of railway round the Frisian Peninsula would form the line of communication in the rear of the seven streams. Esens was to be the local centre of administration when the scheme grew to maturity, but not till then. Every detail for the movement of troops was to be arranged with secrecy and exactitude many months in advance and from headquarters at Berlin.

It is said that the publication of this book led to a complete change in British naval policy. The British fleet was concentrated in home waters instead of being scattered over the world, and two naval bases on the North Sea, one on the River Humber and the other at Rosyth, in Scotland, were constructed especially to watch Germany.

One oddly ingenious scheme of invading England has been announced during the present war. A dispatch from Copenhagen declared that the Germans were building a fleet of huge submarines, carrying one thousand men apiece.

The idea of a fleet of submarines unexpectedly popping out on the shore and landing an army is a striking one, but experts say that it is impracticable.

On the left is another old print of Napoleon's time, published in 1798, showing the French army carried on a huge raft ingeniously propelled by windmills and bearing a great fort. Is it possible we shall see a battleship or floating fort as large as this?

On the right is a cartoon of today in the London Bystander, fantastically imagining the German army marching to England under the sea in divers' suits and protected by submarines. Some features of this scheme are not incredible.

use of various heavy metals in the manufacture of nursing nipples and small rubber toys affords an instance of a possible unsuspected danger to the health of infants, who tend to extract soluble products from such articles in the mouth or by the gastric juice when small pieces of the rubber are accidentally swallowed. Obviously they should be free from soluble toxic substances.

The government chemists state that the occurrence of antimony in black rubber can be explained only on the hypothesis that rubber scrap or recovered rubber has been used in the compounding. We are told that the use of miscellaneous scrap, and especially of recovered rubber or shoddy, is objectionable because of its unknown chemical composition. The use of lead compounds in rubber preparations is common, and salts of mercury are

used to some extent. Either of these metals would be highly objectionable in a compound to be used for nipples or children's toys.

A study of the solubility of the antimony found in rubber nipples—particularly of the red variety—was made under conditions approximating what might exist with infants. They showed an extraction of quantities of antimony of 20 per cent of an emetic dose in normal saliva of an acidity commonly found in an infant's mouth. It is apparent, therefore, without further discussion of the possibilities of a cumulative action of slight dosings resulting from the absorption of small amounts of antimony over a considerable period of time, that the use of antimony rubber in nursing nipples, teeth rings and other rubber materials used by young infants is at least undesirable.

How Rubber Nipples Can Poison Babies and False Gums Growups

There is no substance that enters into such intimate relations with the human body as does rubber. The average baby not only derives his early nourishment through a rubber nipple but exercises his coming teeth upon a rubber ring. Old enough to play, he often chews his rubber toys. The surgeon uses it in his explorations of our body during operations and the dentist completes the cycle begun with the nipple by setting our new porcelain teeth into rubber gums. The discovery, therefore, that rubber is a frequent source of acute and sometimes fatal poisoning is disconcerting.

The Journal of the American Medical Association, taking up the danger, says that the surgeons' experience teaches the unlike qualities of different types or brands of rubber.

The time is arriving when the purchaser of rubber will demand some reliable information as to the quality of the product which he is paying for, continues the Journal. Rare, indeed, is the person at the present time who has any idea whatever of the make-up of rubber. Pure India rubber, or caoutchouc, in its natural

state is entirely unsuited for commercial use. It is soft and sticky and readily undergoes spontaneous oxidation to a hard, brittle, resinous substance. By vulcanization, a process in which mixtures of the crude gum with sulphur, or metallic sulphides or oxides, are heated, a rubber is formed which is more permanently elastic and less subject to spontaneous change.

The simplest type of vulcanized rubber, such as would be obtained from a properly heated mixture of sulphur and pure gum, is quite soft and offers little resistance to ordinary rough usage.

Rubber of tougher qualities, but with lower elastic limits, is produced by the addition of metallic oxides, such as those of lead and of zinc, to the other ingredients before vulcanization. Among other constituents added to give required characteristics are the various pigments which furnish the color. Venetian red, iron oxide, ultramarine, lampblack and various organic dyes are some of the other ingredients which are employed.

A recent Government report upon "The Chemical Composition of Rubber Used in Nur-

ing Nipples and Some Rubber Toys" calls attention to the fact that a large number of additional materials are used in rubber compounding simply to reduce the cost of the product. Among these may be mentioned whiting (calcium carbonate), barytes (barium sulphate), clay and various rubber substitutes, such as artificial rubber, oils and tar products. Finally, so-called recovered rubber, or shoddy, is used to a large extent in rubber compounds, resulting in a varying and generally unknown composition of the mineral constituents of the finished product.

Despite the fact that even better wearing qualities can now be obtained by the use of other metallic compounds, especially zinc oxide, red rubber is still popularly regarded as a superior product. This in turn has led to the artificial coloring of ordinary rubber by the use of other compounds, such as iron oxide and organic coloring matter, so that one may find on the market many varieties of red rubber that are free from antimony.

In the case of most articles of rubber the existence of filling materials, pigments, etc., has no hygienic import. Cost and durability are the chief concern of the purchaser. The