

More Facts About The Gulf Stream Are Now Known

Scientists Are Making Careful Study of This Wonder of the Ocean.

The Gulf Stream has long been a fascinating mystery. As a result of the investigations made aboard the Atlantis the floating research laboratory of the Woods Hole Oceanographic Institution, which recently arrived at Miami from a cruise of several months in tropical waters, more facts are at hand.

The popular notion that the stream is a current flowing merely from the Gulf of Mexico through the straits, up the Florida coast, out into the Atlantic and past the British Isles to the far northern seas is erroneous. In reality it is a vast dynamic current which, after sweeping the Spitzbergen, circles back through the North Sea, the British Channel and the Atlantic to the west coast of Africa. There trade winds between Cape Verde and the equator cause the current to take a westward path that finally leads to the Caribbean thence to the Gulf of Mexico and back along the circuit. As the current flows into the Caribbean, waters from the Amazon and South Atlantic join it. The waters that pass Miami are therefore commingled currents of an ocean that touches four continents.

The work done by the scientists who made up the Atlantic expedition was a continuation of the research made some three years ago aboard the same vessel by which the exact flow in the Caribbean was established definitely for the first time.

The belief that the Gulf Stream causes the mildness of the British and Norwegian climate is still general, though the stream itself has very little to do with this phenomenon.

NEW ROAD LAMP HAILED AS GREAT CURB TO ACCIDENTS

Two new sodium vapor lamps recently cast rays of hope that nocturnal automobile accidents—now causing about 18,000 deaths a year in the United States—may be drastically reduced.

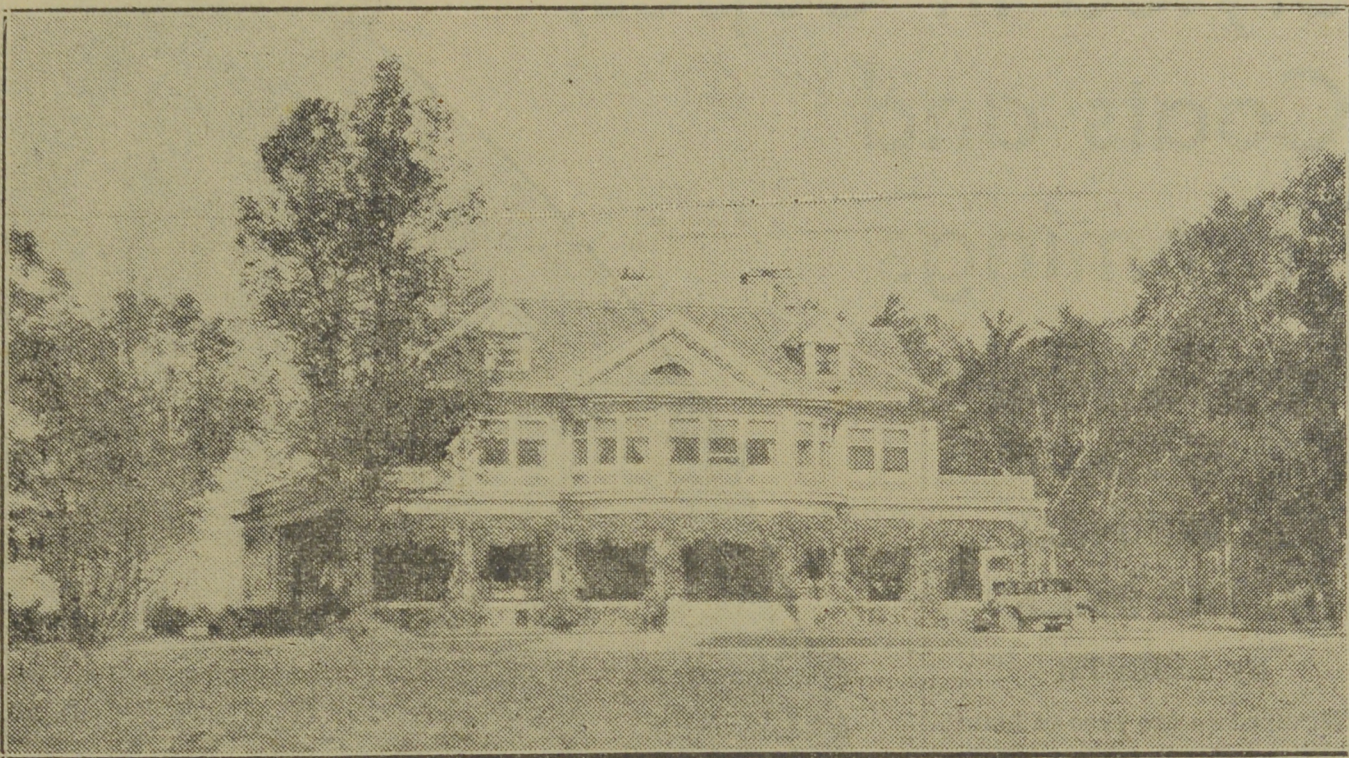
The lamps were placed above two important intersections by the Chicago Motor Club as an experiment. They shed an orange light, uniform, shielded, soft and plentiful, over the road and neutralized the glare of approaching headlights.

George W. Barton, the club's head engineer, declared: "Such lighting is the next move toward motoring safety. Night driving accounts for half of the automobile fatalities, although the traffic volume after sundown is only one-fifth of that of daytime hours."

"Pedestrians are easily seen 600 feet ahead. The strain is largely removed from night driving." If deemed practical, the lamps could be strung above highways at intervals of 125 feet or 250 feet.

"A loving heart encloses within itself an unfading and eternal Eden."—Richter.

Historic Tradition Behind Ottawa House Bought For U. S. Legation



BEAUTIFUL NEW RESIDENCE OF THE UNITED STATES LEGATION IN OTTAWA

Ottawa.—The romance of a \$10 a week telegraph operator who died a multi-millionaire, the hazardous first journey of Champlain into the interior of Canada and the growing international status of the Dominion's capital are interwoven in the purchase of the Rockcliffe home of the late Warren Y. Soper as an official residence for the United States Minister to Canada. Extensive alterations will shortly be started by the American authorities on the property.

For some years the Washington Government has been on the lookout to purchase a suitable legation residence or a site on which to build one. When it was announced that the Soper deal had been consummated involving an expenditure close to \$325,000 everyone interested felt that the action taken was particularly gratifying and satisfactory.

The purchase of one of Ottawa's most magnificent private homes, perched on a high hill above the great river and commanding a splendid view of the Laurentians, the oldest mountains in the world, is another indica-

tion of Washington's greater "awareness" of her northern neighbor and her intention to deal generously with the great republic's envoy to the Dominion.

Of the sum of \$325,000 appropriated by the American Government something in the neighborhood of \$200,000 was paid for the residence and ten acres of land adjoining it. The balance of the money is being used to create a beautiful park and driveways and make necessary changes in the house itself. A feature of these changes is expected to be a magnificent ballroom where the elite of official society will be entertained during the season.

Warren Y. Soper, with Hon. Thomas Ahearn, controller of the Ottawa Electric Railway and allied traction interests, was a man of vision, a collector of great pictures and a lover of the classics. When in 1908 he built this magnificent home at Rockcliffe, almost immediately adjacent to the grounds of Rideau Hall, the official residence of the Governor General, he chose a location from which was obtained an unexcelled view of the Laurentians up the

Gatineau Valley. He set up at the foot of the main staircase a stained glass window depicting Champlain on the shore of the Ottawa and on it placed these words from Parkman:

"In these ancient wilds, to whose ever-verdant antiquity the pyramids are young and Nineveh a mushroom of yesterday, Champlain was planting on shores and islands, the emblems of his faith."

By the stream that the valiant Champlain followed Mr. Soper built his house and no home in the capital has had closer associations with the community's vital past. The land purchased from the heirs of Hon. Thomas McKay, whose home is now incorporated in Government House, was originally deeded from the Crown and thus the property has been owned but by two families, both of whom have contributed notably to the development of Ottawa.

The preservation of the building is assured, as is the case of "Earncliffe," former home of Sir John A. Macdonald, now the residence of the high commissioners for Great Britain in Canada.

High Pressures Are Real Boon To Chemical World

Nitrogen Compounds and Synthetic Alcohols Are Produced By It.

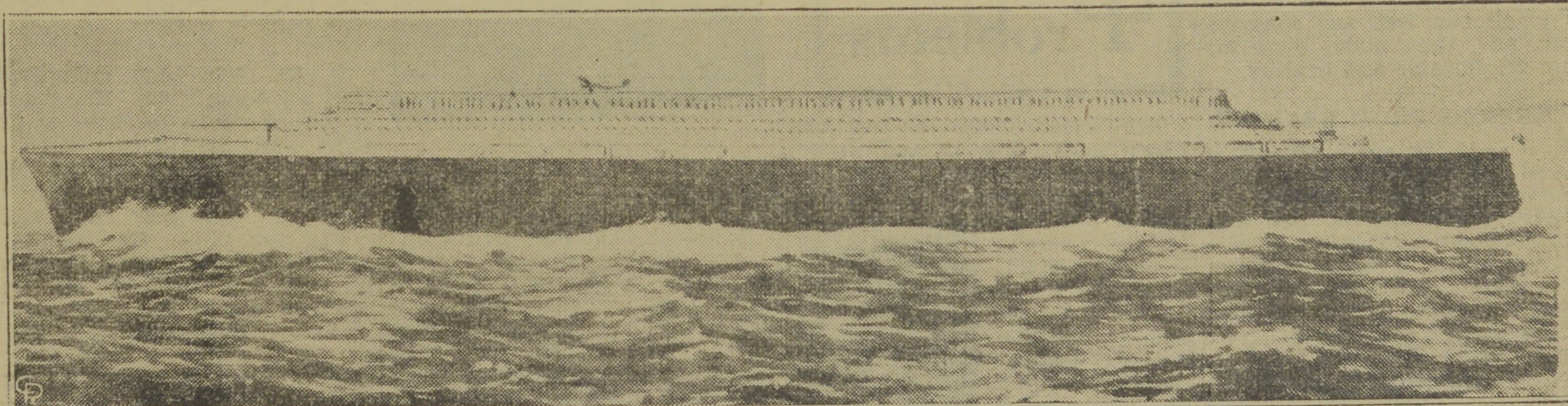
How man has succeeded in producing synthetic nitrogen compounds and synthetic alcohols at low cost and in sufficient quantity to supply the world's needs was described at a recent meeting of the Franklin Institute of Philadelphia by F. A. Wardenburg, general manager of the ammonia department, du Pont Company, Wilmington, Del., reports Science Service.

High-pressure synthesis is the technique by which these results have been accomplished. Mr. Wardenburg said that pressures as high as 15,000 pounds a square inch are employed, such a pressure being equivalent to a column of water 30 times as high as the Empire State Building. At this pressure the gaseous raw materials used in the process have a density about one-third that of water, whereas ordinarily the same gases are much lighter than air.

Most of the high-pressure synthesis plants in America and abroad are designed to "fix" atmospheric nitrogen in the form of ammonia, which in turn can be converted to nitric acid and nitrates, materials essential to peace-time industry and agriculture as well as to national defense. During the peak year of the Great War, Mr. Wardenburg pointed out, when practically all of the explosives required by the Allies were made in America, no less than 50 ships were required to transport nitrate of soda from Chile to Atlantic ports. In the event of another similar emergency the country would be entirely independent of Chile.

Of further significance is the fact that through the new high-pressure synthesis technique cheaper nitrogen fertilizers have been made available throughout the world. Also, by a similar technique, gases can be combined to produce alcohols and other chemicals at a cost far below that achieved previously.

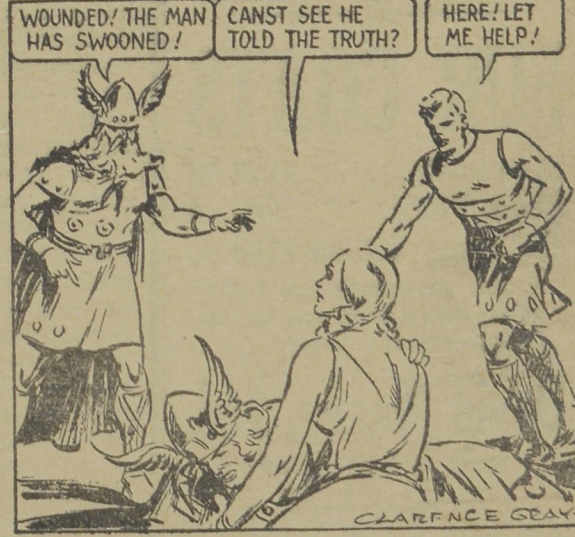
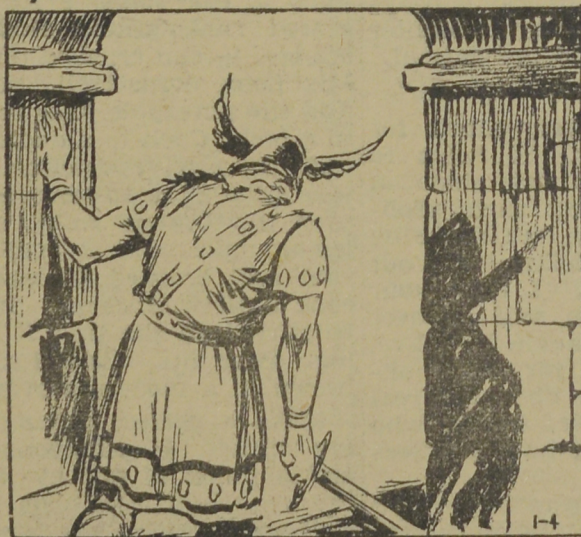
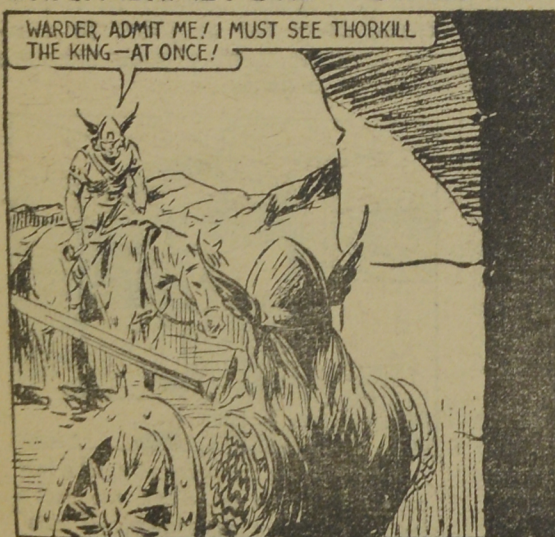
U. S. MAY BUILD GIANT AEROPLANE CARRIER OCEAN LINERS



Here is an architect's drawing of one of the two giant transatlantic passenger liners which may be built for the United States. Paul W. Chapman, former president of the U. S. lines, discloses that he was seeking government aid for construction of the "super-cabin liners." Each ship, he said, would have a 100,000-ton displacement, a length of 1,250 feet,

a 144-foot beam, a cruising speed of 34 knots, and accommodations for 10,000 passengers, exclusively cabin class. Each craft would cost about \$50,000,000 to construct. In the above drawing we show how the vessel could be used as an aeroplane base. By pressing a button, the funnels would be lowered and the radio masts swung down.

BRICK BRADFORD—On the Isles Beyond the Ice



by WILLIAM RITT and CLARENCE GRAY

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