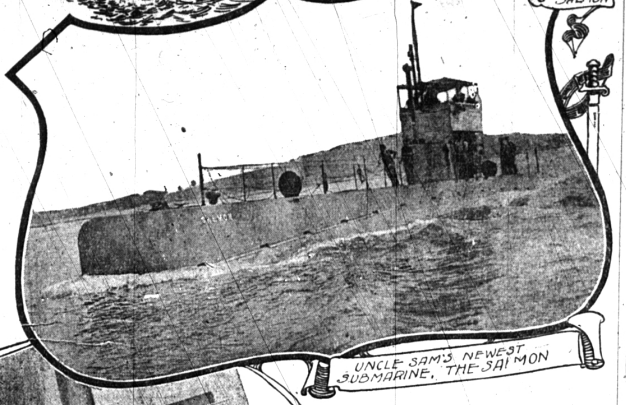
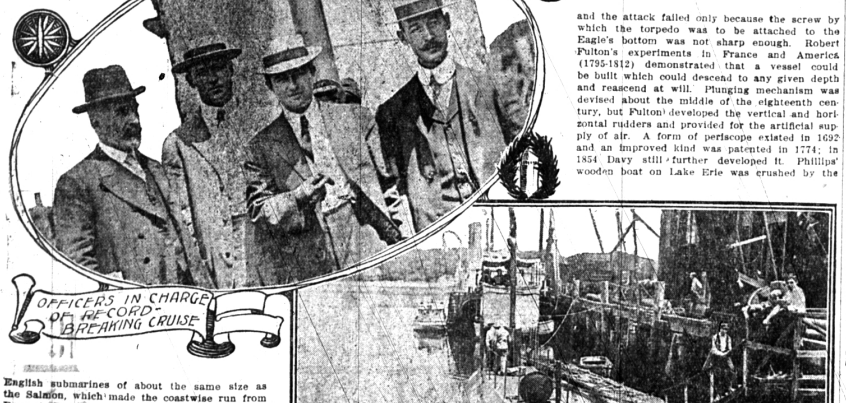
UNCLE SAM'S NEWEST SUBMARINE



UNCLE SAM'S newest and most interesting submarine boat, the Salmon, is an object of international interest just now and is hailed on both sides of the Atlantic as the most remarkable submarine boat in the world. This fame is due to the Salmon's recent record-breaking cruise from the Atlantic coast to Bermuda and return—a deep-sea voyage such as has had no parallel in the history of under-water craft. The cruise to Bermuda was not only the first cruise by a submarine to a foreign port or out of sight of land, but it was the longest virtually continuous run ever attempted by such a vessel. The total distance covered aggregated nearly 1,700 miles and, as it happened, the little vessel encountered very rough weather during a considerable part of the trip.

Not only did this nautical excursion establish a new record for vessels of the American navy, but it surpassed all foreign achievements. The best performances previously recorded by American vessels of this type was found in the run of the submarine Viper from Cape Lookout to Annapolis, Md., a distance of about 483 knots, and the cruise of a flotilla of submarines from New York to Annapolis, a distance of 385 knots. Among the foreign performances of such vessels there stands out the record of English submarines of about the same size as the Salmon, which made the coastwise run from Dover to Dundee, a distance of 512 miles, and the famous performance of the French submarine Papin, which on one occasion made a cruise of 1,200 miles. However, this French achievement is overshadowed by the Salmon's cruise because not only was the distance of the latter much greater, but it was an open sea performance, whereas the Papin cruised along the coast, and, finally, the French vessel is much larger than the new American record-breaker, the Papin being of 550 tons displacement, whereas the Salmon is of but 320 tons displacement.



The Salmon, alike to most of the submarines which have lately been added to the United States navy, is a development of the original Holland type of submarine which first gave the Americans the lead in this class of shipbuilding. The Salmon is 135 feet in length by 14 feet beam and is a twin-screw boat, being driven on the surface by two gasoline engines of 300 horse-power each and propelled when submerged by electrical power supplied from storage batteries.

By way of fulfilling her mission of destruction the little vessel has four torpedo tubes equipped to fire the latest type of torpedo—that is, a torpedo 17 feet in length and 18 inches in diameter, having a radius of 4,000 yards and carrying an explosive charge of 200 pounds of guncotton. On her cruise to Bermuda the Salmon carried a crew of 21 men, but it was demonstrated on this cruise that under actual service conditions such a submarine can be operated, in so far as navigation is concerned, by five men—two on the bridge and three in the engine room.

The Salmon is capable of a speed of 14 knots per hour when running awash or on the surface of the water and 12 knots per hour when running wholly submerged. Only three minutes is required to change from surface running by gasoline engines to submerged running by electrical power. The vessel has, on trial, dived to a depth of more than 200 feet without any sign of strain or leakage being manifest anywhere on her steel cigar-shaped body. A unique feature of the equipment of an up-to-date submarine such as the Salmon, is a double periscope whereby, when the vessel is wholly submerged the officers on board can observe all that is going on at the surface of the water. Electrical ranges are provided for cooking the meals of those on board, and there is a reserve supply of 4,800 cubic feet of air, contained in 28 tanks, so that if need be the vessel could be "sealed up" tight and remain under the surface of the water for one or two days and nights without those on board having any communication with the outside world or coming to the surface for fresh air. On the Salmon's Bermuda cruise there were on board, in addition to the officers of the American navy, Capt. Arture Cuevas of the Chilean navy, who went for the purpose of reporting to his government on the behavior of the vessel.

Modern submarine boats are of two types, the submerged and the submersible. The submerged when in light cruising condition moves with only a small percentage of the hull above the water; the submersible cruises on the surface much like an ordinary torpedo boat, which it resembles externally. The difference in principle between the two types is slight, but in construction details it is very marked. The submerged boats are usually nearly cylindrical with pointed ends, the general shape being much like that of a Whitehead torpedo. Submergence is effected by admitting water to the ballast tanks or by means of inclined rudders, or both. Submersible boats have two hulls, one inside the other. The outer hull resembles closely that of the ordinary torpedo boat, but has a few projections as possible rising from the general outline, in order to present a smooth surface when submerged. Inside this there is a second hull of nearly circular cross-section and as large as the shape of the outer boat permits. To effect submergence water first admitted to the space between the hulls, and this brings the boat to the "awash" condition. Further submergence is effected by permitting the ballast tanks to fill.

When or by whom was built the first submarine boat will probably never be known. It is said that Alexander the Great was interested in submarine navigation, while subaqueous attacks of vessels was studied at least as early as the thirteenth or fourteenth century. M. Delpeuch states that some English ships were destroyed in 1372 by fire carried under water. In the early part of the seventeenth century submarine boats were numerous, and in 1624 Cornelius Van Drebbel exhibited to King James I. on the Thames a submarine boat of his own design. By 1727 no less than fourteen types of submarines had been patented in England alone. In 1774 Day began experiments with a submarine boat at Plymouth, England, losing his life in the second submergence trial. In the following year David Bushnell built his first boat, with which Sergeant Lee attacked H. M. S. Eagle in New York harbor. Lee actually got under the ship, and the attack failed only because the screw by which the torpedo was to be attached to the Eagle's bottom was not sharp enough. Robert Fulton's experiments in France and America (1795-1812) demonstrated that a vessel could be built which could descend to any given depth and reascend at will. Plunging mechanism was devised about the middle of the eighteenth century, but Fulton developed the vertical and horizontal rudders and provided for the artificial supply of air. A form of periscope existed in 1692 and an improved kind was patented in 1774; in 1854 Davy still further developed it. Phillips' wooden boat on Lake Erie was crushed by the water pressure, and the same fate befell Bauer's iron boat Plongeur-Marin at Kiel in 1850. In 1863 McClintock and Howgate built a semi-submarine hand-propelled boat for the attack on the federal fleet, but it sank four times, each time drowning the entire crew of eight men. In the same year several larger boats propelled by engines were commenced in Europe, and—these at intervals were followed by others designed by Hovgaard, Goubet, Zede, Nordenfeldt, Tuck, Holland and others. The French navy began experimenting with submarine boats about 1885. The Gymnote was built in 1888 and the Gustave Zede in 1893. The Morse was commenced in 1894, but remained uncompleted until 1899, pending additional experiments with the Gymnote and the Zede. In that year the construction of submarines was actively commenced, ten being launched in 1901.

All London is talking about the startling exhibitions of speed given by a little boat on the Thames and at Bournemouth. The boat was seen racing up and down the river at what seemed a terrific speed, darting along by leaps and bounds, just as a shark chases a fish scudding between wind and water. The impression she left was not so much that of power, for she was such a mite of a thing, only 26 feet long, as of vicious and desperate energy. Crowds of people gathered along the embankment to watch her, wondering whence in her tiny body this overpowering energy could come.

It has since been divulged that she is the Miranda IV., the latest experiment in skim boats, or, as they are called technically, hydroplanes, by the veteran English inventor, Sir John Thornycroft. Compared with anything near her size, the Miranda IV. is certainly the fastest craft afloat. Her exact speed is not known, but she has several times done well over 24 knots an hour, and has decisively beaten the Columbine at Bournemouth, the only other craft which could lay claim to a record in her class. But it is not only for this terrific speed that the Miranda IV. is remarkable. She is the most seaworthy craft of her size that has been constructed.

When Sleep Will Not Come

Five absolutely sleepless nights are enough to cause death, and two may be enough to cause hallucinations, loss of memory, and all kinds of other troubles. The best advice for the treatment of insomnia, perhaps, was that of the Irishman, who said he knew the one and only cure—"Just go to sleep and forget all about it." Not easy, maybe, but sound advice, all the same; to worry about sleplessness is fatal.

Narcotics are, generally speaking, equally bad. To earn sound sleep, in fact, there is only one way, and that is to follow nature's system of destroying consciousness.

First, lie in the most comfortable position possible, and this is usually on the right side with the knees slightly flexed. Then, with the lips closed, but not compressed, drop the lower jaw and relax the tongue, gently shut the eyes, and draw the bedclothes over the exposed left ear. This shuts out light and sound, and relaxes some muscles which are usually forgotten.

Now proceed to relax more muscles, beginning at the feet, legs, thighs, and arms, imagining each in turn a heavy weight bearing down upon the bed; and, lastly, imagine that the eyes are looking far away to distant horizon. The attention is so taken up with the relaxing process that thinking soon ceases, and the imagination, instead of running riot at its sweet will, is set to play on something definitely soothing, and soon falls asleep.

At the same time it should not be forgotten that the bedroom should be flooded with pure air; and an important point to remember is that a higher temperature than 58 degrees Fahrenheit increases the action of the heart and warns sleep away; a temperature too low congests the heart, tending also to wakefulness. It is best to sleep on the right side, and in the morning to rest on the left side.

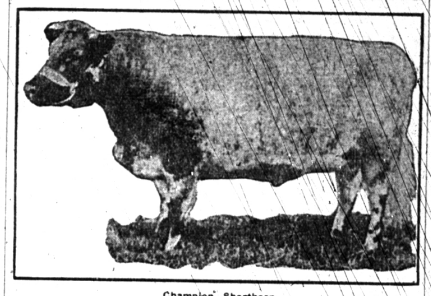
SHORTHORN, HOLSTEIN OR AYRSHIRE FOR DAIRYMAN

Where It Is Intended to Sell Calves to Butcher, Breeds Named Are Excellent—Some of Their Qualities.

The best bull for the milk farmer is the Holstein, Shorthorn or Ayrshire. If he intends to sell the calves to the butcher when two or three weeks old he should buy the Holstein or Shorthorn. A male of either breed, properly fed and bred to grade cows of any of the large milking breeds, will give large calves that will make rapid growth and sell for $8 to $10 each when at the age of 20 to 25 days.

A milk farmer should not have a Jersey bull, as they bring small, delicate calves that can seldom be sold for more than a few dollars. Any calf butcher will tell you what calf will bring the most money.

If the milk farmer desires to raise the female calves from his best cows he should buy an Ayrshire. The Ayrshire has been bred exclusively for milk, and will probably yield a greater quantity of milk for the food consumed than any other breed. Another excellent quality of the Ayrshire breed is their freedom from lung diseases; their hardy, rugged character and their ability to stand cold weather without injury. For cheese and milk at the lowest cost, the Ayrshire and the Ayrshire cross will give the largest returns.



Champion Shorthorn.

For cream and butter buy the Guernsey or the Milking Polls. The Guernsey is much larger than the Jersey, they give a larger flow of milk and the milk, being highly colored, can be sold at an advanced price. I know of dairymen keeping a few well-bred Guernseys for the express object of their milk being used to color and flavor the milk from their grade cows. Nearly all the dairy farmers that make a business of selling milk to the city want large cows. The cows preferred are the grade Shorthorns or the Holsteins, says a writer in the Baltimore American. Most of these cows come to the Baltimore market from Ohio and West Virginia. They are great eaters and usually give a large quantity of milk and when dry fatten quickly. The cows are fed liberally at all times, and as soon as fat disposed of to good advantage as beef. A herd of fat grade Shorthorn cows recently sold for $55 per head, which was within a few dollars of their purchase price when fresh.

The milk farmer should decide whether half a dozen or more fat cows sold every spring to the butcher will not pay better than keeping the cows over until they come fresh. Our own method, which we have found most economical, as we have the pasture and the feed, is to keep the best milkers over. We only raise the female calves from our choicest cows. Dairymen having high-priced land and carrying on an exclusive milk business should take the Shorthorn or Holstein cross. The dairyman living on his clay or rough mountain farm should take the Ayrshire bull and raise the choicest female calves to keep up his herd. This he can do much cheaper, as his expenses are much less.

American Hogs.

Five distinct breeds of hogs are credited to American skill, and every one of them is better adapted to American conditions than any foreign breed, barring the Berkshire. The Berkshire seems to be a good hog anywhere.

Fleas and Mites.

It is said that crude carbolic acid dissolved in boiling water and sprinkled about the barn or henhouse is sure death to fleas and mites. Use 15 cents' worth of the carbolic acid to a bucket of water.

SEEDS INJURED BY MOISTURE

Varieties Like Blue Grass Will Heat Quickly if Not Dried in Sun or With Artificial Heat of Some Kind.

(By CHAS. K. WEATHERSON.)

The drying of seeds affects their germinability to a considerable extent. Some seed, like blue grass seed, will quickly heat and spoil if not thoroughly dried in the sun or with artificial heat.

Much of the poor blue grass seed has been made poor by being too quickly put in large receptacles where it does not have an opportunity to thoroughly dry.

Even when piled in the field after it has been taken from the blue grass tops it has been known to heat sufficiently to spoil it.

It is unfortunate that when a man has a lot of blue grass seed that has been so spoiled that he cannot resist the temptation to sell it for good seed.

Many other seeds are injuriously affected by too great a moisture content, but few so much as the blue grass seed. The higher the starch content of the seed the more necessary does it appear to be to keep it from dampness.

Corn, being high in percentage of starchy matter, must be kept from dampness or its germinability will be destroyed. So readily does it heat under warm, moist conditions that it is regarded as very difficult to send a cargo of corn across the equator.

It may be accepted as a good rule that all seeds should be kept from dampness, most of all such seeds as corn. Just how the dampness affects the germinability we do not fully know.

In some cases doubtless the dampness with a fair degree of heat starts the germ to developing, which later, when the seed is again dried, is arrested and the soft cells harden, and the germ dies. Corn especially should be kept from dampness.

When the weather in the fall is such that the corn fully matures and the ears dry out before the frost comes, almost any amount of cold fails to injure it.

Not so the seed that has not thoroughly dried out. The heavy freezes destroy the germ life because of the moisture in the germ. It is probably that the minute particles of moisture are expanded in the freezing and burst the cells of which they form a part.

The drying of corn is therefore a necessity if good seed is to be had. The worst feature about this experience with corn is that it leaves no external mark to show what has taken place in the germ.

The farmer picks out the nicely appearing ears and shells the corn for seed. Not till it fails to come up the next year does he begin to suspect that its germinability had been injured before he selected it for seed.

French Market Poultry.

The French method of preparing poultry for market is acknowledged in some respects superior to others. The birds are made very fat and plump, and are manipulated to increase plumpness. A few feathers are left on the tail and neck. The skin is white and delicate. Each carcass is tied with a ribbon and is shown back uppermost, instead of breast up, according to American and English usage.

Keep Hay Loft Clean.

The floor of the hay loft should be seed and dust tight. Horses are often injured by seeds and dirt falling into their eyes and ears.

PROPER DEPTH FOR PLOWING

Excellent Method Is to Plow an Inch or Two Deeper Every Year, Bringing Bottom Soil to Surface Gradually.

(By C. M. MILLER.)

One of my neighbors started his fall plowing early this year. I saw him recently scuffling along behind his two little mustang ponies that were trying to drag a 14-inch plow. He was turning up the soil about three inches deep, and when he came to a particularly hard spot he boke down on the handles and let the plow point skim close to the surface. I don't believe that the soil four inches below the surface ever saw the light in any of his fields.

No wonder he is always complaining of poor crops. I once suggested that if he would use a ten-inch plow and set it to run even five or six inches deep he would get better results, but I simply got snubbed for my pains, which served me right for meddling. It takes a big 2,400-pound team to draw a 14-inch plow and get down to the proper depth. I am a firm believer in deep plowing.

The depth should be lowered gradually. I do not think it is a good plan to sink a subsoil plow deep into the furrow and turn up soil that has lain dormant for years. A better plan is to plow an inch or two deeper every year and in this way bring the bottom soil to the surface gradually. It will absorb plant food more readily and in the long run produce better crops.

Setting Strawberries in Spring.

Early spring is the most satisfactory time for setting out a strawberry bed. A crop may be expected the next spring. Raspberries may be set out either in the fall or spring, but the latter is usually to be preferred. Plant in rows six feet apart. Set the canes four to five feet apart. They do not bear the first year. Blackberries are grown much the same as raspberries and bear the second year. The third season a full crop is procurable.

LEFT TO A WORSE FATE

Dynamiter, Himself a Married Man, Knew What Awaited Forgetful Husband.

The business man was sitting in his office, thinking of starting for home, when a suspicious looking person came in with a leather bag in his hand.

"If you don't give me $25," said the visitor, coming at once to the point, "I will drop this on the floor."

The business man was cool. "What is in it?" he asked.

"Dynamite," was the brief reply.

"What will it do if you drop it?"

"Blow you up."

"Drop it!" was the instant command. "My wife told me when I left home this morning to be sure and send up a bag of flour and I forgot it. I guess it will take just about as much dynamite as you have there to prepare me for the blowing up I'll get when she sees me!"

He threw himself back in his chair and waited for the explosion, but it did not come.

"I'm a married man myself," said the dynamiter, and quietly slipped out.—Illustrated Bits.

History of Red Cross Seal.

"Charity stamps," first used in Boston in 1862 for the soldiers' relief funds during the Civil war, were the original forerunners of the Red Cross Christmas seal, which will be used this year to bring happiness and cheer to millions. The Delaware Anti-Tuberculosis society in 1907 for the first time in America made use of a stamp for the purpose of getting revenue to fight consumption. In a hastily organized campaign of only three weeks they realized $3,000. The next year, 1908, the American Red Cross conducted the first national tuberculosis stamp campaign. From this sale $135,000 was realized for the anti-tuberculosis movement. In 1909, under many adverse conditions, $250,000 was realized from these stamps. This year the slogan of the tuberculosis fighters and the Red Cross is "A Million for Tuberculosis From Red Cross Seals in 1910."

The Place of Honor.

Farmer Hodge was of the good, old-fashioned school, and he always gave a feast to his hands at harvest time.

It was harvest time and the feast was about to commence.

Giles was the oldest hand and the hostess, with beaming cordiality, mentioned him to the seat by her right hand. But Giles remained silently unresponsive.

"Come," said the hostess, "don't be bashful, Mr. Giles"—he was just Giles on ordinary occasions—"you've a right to the place of honor, you know."

Giles deliberated a moment, then spoke.

"Thank you kindly, Mrs. Hodge," he said, "but if it's all the same to you, I'd rather sit opposite this pudden'!"

Popularity of Thais.

"Every other young actress is calling herself Thais," said Henry E. Dixey at a dinner at Mauquin's. "Thais McGinnis, Thais Endicott, Thais Schmidt—the thing is universal."

"Universal and ridiculous, for they who have read Anatole France's story of Thais know that she was a very naughty little girl, indeed. I am quite sure that no real reader of 'Thais' would ever, under any circumstances, consent to be called such a name.

"It makes me think of a man who, taking his infant daughter to be baptized, told the clergyman to call her Venus.

"But I refuse to call her Venus," said the clergyman, indignantly. "Venus is the name of a pagan goddess."

"Well, how about your own girl, Diana?" said the man."

The Way It Looked.

Mrs. Benham—How do you like my hat?

Benham—You mean the one with the mayonnaise dressing?

Toothsome Tid-Bits

Can be made of many ordinary "home" dishes by adding

Post Toasties

The little booklet, "GOOD THINGS MADE WITH TOASTIES," in pkgs., tells how.

Two dozen or more simple inexpensive dainties that will delight the family.

"The Memory Lingers"

Postum Cereal Company, Ltd., Battle Creek, Mich.