

UNCLE SAM'S NEWEST SUBMARINE

U NCLE 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



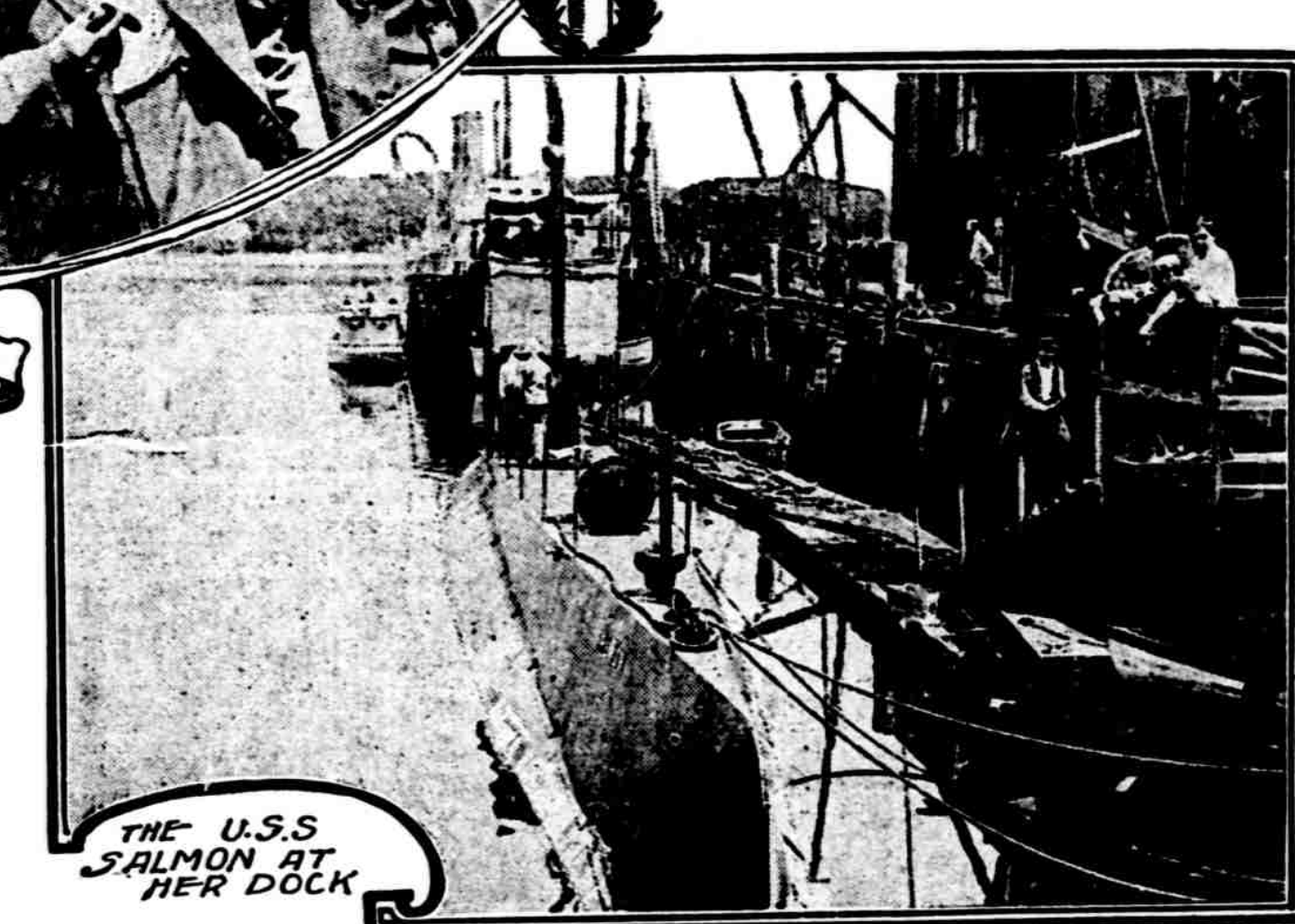
English submarines of about the same size as the Salmon, which made the coastwise run from Dover to Dundee, a distance of 512 miles, and the famous performance of the French submarine Papin, which on one occasion made a cruise of 1,200 miles. However, this French achievement is overshadowed by the Salmon's 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 220 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 horsepower 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 torpedoes—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 300 pounds of gun cotton. 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 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. Arturo Cuevas of the Chilean navy, who went for the purpose of reporting to his government on the behavior of the vessel.

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



Modern submarine boats are of two types, the submerged and the submergible. The submerged when in light cruising condition moves with only a small percentage of the hull above the water; the submergible 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. Submergible boats have two hulls, one inside the other. The outer hull resembles closely that of the ordinary torpedo boat, but has as 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 is first admitted to the space between the hulls, and this brings the boat to the "swash" 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 subsequent attacks of vessels was studied at least as early as the thirteenth or fourteenth century. M. Delpouch 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 on the ship,

water pressure, and the same fate befell Bauer's iron boat Plongeur-Marin at Kiel in 1850. In 1862 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 Howgaard, Goubet, Zede, Nordensfeldt, Tuck, Holland and others. The French navy began experimenting with submarine boats about 1855. The Gymnote was built in 1858 and the Gustave Zede in 1857. The Morse was commenced in 1854, but remained uncompleted until 1859, pending additional experiments with the Gyronote 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 skin 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 34 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.

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 the distant horizon. The attention is so taken up with the relaxing process that thinking soon ceases, and the imagination, instead of running riot

What to Do Before the Doctor Comes

By DR. W. H. BAILEY
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In general, poisons may be divided into two classes. (1) corrosive or irritant poisons, those which injure a person or cause death by their local action of destroying the tissues; (2) nervous or systemic poisons, those which produce their ill effects by their action on the nervous system at large.

Some of the more common irritant poisons are: 1. Arsenic, in its various forms as white arsenic, Paris green, rat-poisons, poison fly paper, and various vermifuge exterminators; 2. Carbolic acid (phenol) which, although probably among the most irritating of poisons and producing death after the most agonizing suffering, is, strange to say, very frequently selected for the purpose of committing suicide; 3. Phosphorus, which is found in various rat-poisons and in match heads; 4. Strong acids such as sulphuric, muriatic, and nitric acids; 5. Strong alkalies as caustic soda, caustic potash, lime, lye and strong ammonia.

Among the systemic poisons are: 1. Opium, in its various forms as morphine, codeine, laudanum, paregoric, and black drop; 2. strychnine; 3. belladonna; 4. alcohol, which although so commonly used, is nothing more or less than a poison, and in the quantities usually taken, produces its effects by really poisoning the system; 5. ptomaines, which are formed in spoiled or partially decayed foodstuffs.

The poisons produce their injurious and sometimes fatal results in various ways. The irritant poisons all have a destructive action on the tissues with which they come in contact. If left in the stomach or intestines for any length of time, they are very liable to perforate their walls and so set up a peritonitis, which is very frequently fatal. If perforation does not occur, the scar tissue which forms where the normal tissue has been destroyed, always contracts in time, and may do so to such an extent that an obstruction to the digestive tract may be the result. Some of the systemic poisons kill by over stimulation, others by de-

pressing the vital functions and others by paralyzing them. There are a few poisons which are at the same time both irritant and systemic in their actions.

The diagnosis of poisoning is sometimes very difficult, but at other times it is quite evident. If after taking something either as medicine or food the person suddenly begins to feel very much different from what he did a few minutes before, poisoning should be thought of. Sometimes there are pains in the abdomen, sometimes convulsions or spasms, sometimes an irritable dryness or unconscionableness. Irritant poisons often leave stains and burned places upon the lips and inside the mouth. Often the label upon the bottle or box, in the case of medicine, will show one what has been taken. The odor of the breath, or of vomited matter will sometimes help to make a diagnosis. Often the patient himself is able to inform you as to what he has taken.

Although poisons are usually taken into the body by way of the digestive tract, it must not be forgotten that they can be breathed into the lungs in the form of poisonous gases. It is also possible to be poisoned, in some cases, by absorbing the substance through the skin in large enough quantities to produce the injurious effects.

—William H. Bailey, A. B., M. D., Kansas University School of Medicine, Roessdale.

Priceless Relic Found.
The first original description of America ever written has just been discovered. It was penned by Dr. Diego Alvarez Chanca, physician to the second fleet of Columbus, and was dated at the Port of Isabella, Santo Domingo, in January, 1494. Dr. Fernandez de Ybarra, of the New York Academy of Sciences, with the Smithsonian Institution of Washington, aided in its discovery. The discovery of the original manuscript, uncovered the documents.

Antidotes for Some Poisons
Arsenic, when taken in poisonous doses, produces, in half an hour, pains in the abdomen, often vomiting, thirst, often purgation and sometimes nervous shock and unconsciousness. The antidotes are milk, eggs, or best of all freshly prepared ferric hydrate, a chemical which is made by mixing tincture of ferric chloride with ammonia (spirits of hartshorn) or calcinated magnesia. The resulting substance should be washed two or three times by placing in a cloth and running water through it. These two substances go under the official name of "ferric oxidum hydratum cum magnesia, and can be procured at most drug stores."

Carbolic acid, if taken in too large doses or in concentrated form, causes white burned places on the lips and inside the mouth, or any place that it touches the skin. It causes intense pain in the mouth, throat and abdomen. The odor is very characteristic and may lead one to a diagnosis. It is a heart depressant and if enough has been taken, the person soon goes into a stage of collapse and unconsciousness. The antidotes are alcohol in some form (whisky or wine or diluted alcohol) given in large quantities and then promptly vomited. In other words, wash out the stomach with alcohol. Lime water, magnesia and eggs are of some benefit and should be given if no alcohol is obtainable. Of course the general treatment of poisoning, as to stimulants, etc., must be carried out.

Phosphorus is a local irritant, causing burning of the throat and pains in the abdomen and sometimes vomiting. None of these symptoms may show until three or four hours after the poison has been taken. The odor of wet matchheads may be detected and the vomited material will sometimes give off a pale light (fluorescence) in the dark. The antidotes are crude turpentine and magnesia in milk, and hydrogen peroxide. Do not give oil of any kind as it forms a compound with the phosphorus that is more quickly absorbed.

The strong acids cause death by destroying the tissues, giving severe inflammation and swelling of the throat and perforating the stomach or intestines. The antidotes are dilute alkalies. Some kind of weak ammonia, soap-suds, magnesia, chalk, lime water, Raw eggs may also be given. The burning of the mouth and throat is slightly relieved by oily liquids, as small doses of sweet oil, olive oil, or castor oil. These can be taken in any case of poisoning where there is burning of the throat, except in phosphorus poisoning.

Defect in American Law.
In a letter published in the Syracuse Post-Standard, former Ambassador Andrew D. White speaks vigorously on the subject of "the chicanery, pettifoggery and folly in the defense of criminals." He says that "homicides have increased within fifteen years from two thousand a year to nearly ten thousand, placing us by far in the lead of all civilized nations in this respect," and that there were capital convictions in only about seventy cases last year. "The immediate cause of the whole of this state of things, with constantly increased respect of law, is, in my opinion," adds Mr. White, "a kind of sickly sentiment pervading the whole country on this subject."

With Bernard for a Guide
Six miles south of Dinard (Illet-Villane), on passing through the village of Pleurtuit, and descending into the deep valley of Fremur, the visitor finds Crochais a romantic spot, between wooded slopes whose dark verdure is reflected in the somber waters. The whole valley being private property, dependent upon the neighboring castle of Crochais, which dominates the hills, would-be visitors are directed to apply at the mill, whose great wheel is turned by the waters of the first pond. The miller pockets his gratuity, points out the intricate path that must be followed, then calls "Bernard," and indicating the visitors, tells Bernard to go with them. Bernard is the dog that acts as guide in order to save the miller the journey and explanations.

The dog trots quietly along in front of those entrusted to his care, and, if they take a by-path, he stops and waits till they rejoin him. The walk is about a mile as far as the second pond, where it terminates. Bernard

Popularity of Thais.
"Every other young actress is calling herself Thais," said Henry E. Dixey at a dinner at Mauguin'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.

How's This?
We offer One Hundred Dollars Reward for any person who can identify the man in the photograph who is the author of the "Catskill Cure."

F. J. CHENEY & CO., Toledo, O., have the honor to announce that they have for the last 15 years, and believe him perfectly trustworthy in all business transactions, and financially able to carry out any obligations made by him. WASHINGTON, KANSAS & ILLINOIS. R. O. DRISCOLL, Toledo, O. HARRINGTON'S CURE IS TAKEN INTERNALLY, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price 75 cents per bottle. Take HARRINGTON'S Family Pills for constipation.

Childlike Ignorance.
Laura Jean Libbey, discussing in Brooklyn her successful appearance on the stage, said:
"I talk in my monologue about love, marriage and the other interests of the heart. On these subjects women, especially young women, are strangely ignorant."
"They really make me think, you know, of the little girl who was asked by her teacher:
"What can you tell us about Solomon?"
"Solomon," replied the little girl, "was very fond of animals."
"And how, my dear," said the teacher, "do you make that out?"
"Because," answered the little girl, "the Bible says he had 500 porcu pines."

Prudent Bridegroom.
"The uncertainties of life in New York are reflected in wedding rings," said the jeweler. "Of all the wedding rings I have sold this season more than half were brought back after the ceremony to have the date put on. The rest of the inscription was engraved when the ring was purchased, but in order that the date might be correct it was cautiously omitted until after the knot was tied."

Force of Habit Too Strong.
Diner—How is it that most of the things on your bill of fare are struck out?
Waiter (confidingly)—Our new manager used to be an editor.

Toothsome Tid-Bits
Can be made of many ordinary "home" dishes by adding
Post Toasties
The little booklet, "GOOD THINGS MADE WITH TOASTIES," in plain, tells how.
Two doses or more simple inexpensive dainties that will delight the family.
"The Memory Lingers"
Postum Cereal Company, Ltd., Battle Creek, Mich.

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 of a 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. Arturo Cuevas of the Chilean navy, who went for the purpose of reporting to his government on the behavior of the vessel.

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

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

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 the distant horizon. The attention is so taken up with the relaxing process that thinking soon ceases, and the imagination, instead of running riot