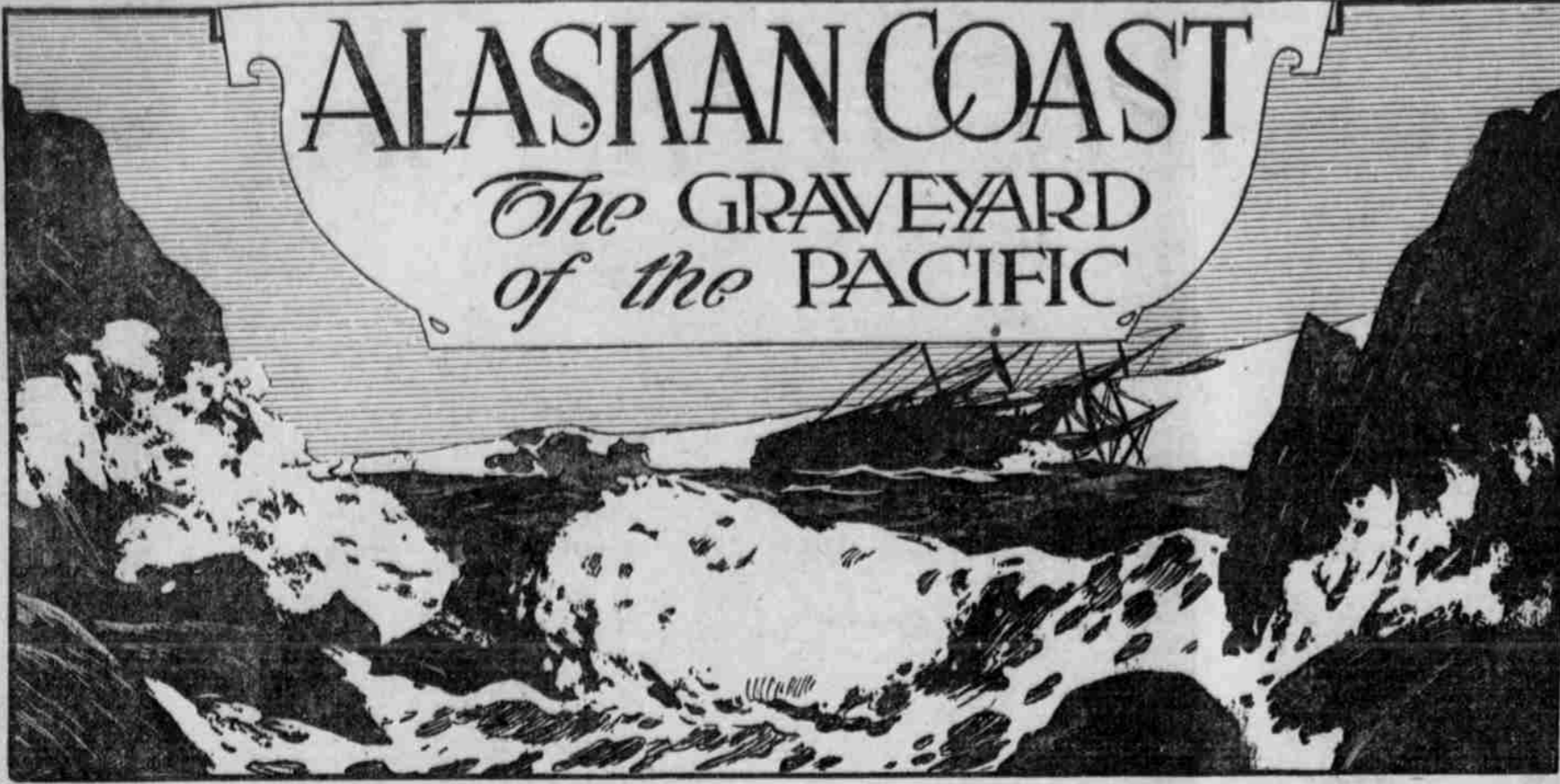


ALASKAN COAST

The GRAVEYARD of the PACIFIC



HE weather was clear, unusually clear for Alaska. On August 17, 1913, the steamer State of California was steaming through Gambier bay. She was in the regular steamer course. The chart showed clear water on all sides of her. Suddenly there was a terrific shock. The vessel's bow rose in air. So sudden was her check that men were thrown flat on her decks. In fifteen minutes she had gone down, taking 31 humans and a cargo worth \$300,000 with her. She had struck, right in the customary steamer course, an uncharted pinnacle of rock.

When word of the fate of the State of California reached Washington it added energy to a movement which Secretary Redfield of the department of commerce and labor had been agitating for some time. This movement was to prevail upon congress to increase the appropriation for the work of the department of geodetic and coast survey, the department that has charge of blazing the ocean trails.

At the present time there are three vessels employed in coast survey work in Alaska. One was a Confederate gunboat during the war. She had a one-cylinder engine. She is capable of eight knots in still weather, six knots against a breeze, and nothing at all in a blow.

The other two were not Confederate gunboats, but in other respects they are fully as antiquated as the first. Secretary Redfield has termed them unseaworthy, dangerous, inefficient old tubs. And to these craft alone is allotted the job of guarding the safety of 43,339 passengers who traveled Alaskan waters last year, in addition to \$30,000,000 worth of cargo and ships.

And the government records show that the State of California is but one of many wrecks that occur on uncharted rocks along the Alaskan coast yearly. The peculiar formation of the region is responsible for narrow spires of rock that rise out of the sea floor to within a few feet of the surface in localities where all around them the water is navigable. Soundings of the ordinary sort seldom reveal these instruments of death in the way of ships. To locate them properly the coast survey has designed an apparatus known as a "wire drag." This is a wire sunk below the surface save at both ends, where it is buoyed with floats. The coast survey ships drag this device along, and cover great sweeps of sea at a time, the rock spires being detected when the wire catches on them. They are then either buoyed or destroyed by dynamite.

"Alaska," the man in the East is apt to say, "why, who ever goes up on the Alaska coast except gold hunters and explorers? What's the use of spending money up there?"

There is but one answer to this. The Alaskan coast is equal in extent to the distance between Charleston on the Atlantic coast and San Diego on the Pacific coast. And then, as mentioned before, more than 43,000 persons traversed it in ships last year. Have those 43,000 citizens not a right to protection? asks the hydrographic office.

President Wilson realizes what inefficiency in charting the Alaskan coast means. For on that subject he wrote:

"There is another matter of which I must make special mention, if I am to discharge my conscience, lest it should escape your attention. It may seem a very small thing. It affects only a single item of appropriation. But many human lives and many great enterprises hang upon it.

"It is the matter of making adequate provision for the survey and charting of our oceans. It is immediately pressing and exigent in connection with the immense coast line of Alaska, a coast line greater than that of the United States themselves, though it is also very important, indeed, with regard to the older coasts of the continent. We cannot use our great Alaskan domain, ships will not ply thither, if those coasts and their many hidden dangers are not thoroughly surveyed and charted.

"The work is incomplete at almost every point. Ships and lives have been lost in threading what were supposed to be well-known main channels. We have not provided adequate vessels or adequate machinery for the survey and charting. We have used old vessels that were not big enough or strong enough and which were so nearly unseaworthy that our inspectors would not have allowed private owners to send them to sea. This is a matter which, as I have said, seems small, but is in reality very great. Its importance has only to be looked into to be appreciated."

Perhaps those best qualified to know the perils of this great extent of coast are the sailors who ply it. Charles T. Moritz, mate of the steamship Spokane, writes:

"Since I am going to make the business of piloting vessels through the waters of southeastern Alaska my life's work I take more than an ordinary interest in locating hidden dangers.

"The men who have gone before me have pointed out all the dangers on the surface and many that are beneath; the cost of locating some of the latter has been many human lives and many good ships.

"Must I lose the lives of a shipload of passengers to discover some hidden danger? Others have done so, and until we know just where all the dangers are located more will do the same.

"That such dangers exist, and that there is a very easy means of locating them, I hope to show by the Notice to Mariners, issued by the United

States coast and geodetic survey, that I will append.

"If some of the persons who have it in their power to vote funds for this work saw this notice, perhaps it would move them to keep the good work going. Could you bring this to their notice?"

R. D. McGillivray, pilot of the steamship City of Seattle, writes:

"I would like to add that I was pilot of the steamship Cottage City when the party of congressmen and their families, headed by Speaker Cannon, made an excursion to Alaska. Fortunately we had a successful trip. Little did they think of the dangerous waters they were traveling. If we had hit one of these pinnacles then they would have looked out a little better for our protection and the ship owners' interests, as well as the lives of the citizens of the country.

"I must say that I have sailed all over the world, and Alaska has the poorest surveyed waters that I have ever navigated."

And now what of the men who have been laboring for years against tremendous odds to do the charting of these coasts with hopeless equipment in Secretary Redfield's "unseaworthy old tubs." To push into those northern seas with their fogs and gales for long cruises in stanch vessels would be risky enough; but to go into them in single-cylinder, leaky, antiquated little junk heaps of steamers for a work that is far more perilous than the layman conceives requires real grit. And it is this sort of grit which stands out prominently in the makeup of the men of the coast survey, who have for so long been grappling with the fog and ice and gales of Alaskan regions.

The endlessness of the coast surveyors' work may be gathered when it is considered that never does a shore line or a channel remain precisely the same. New sand bars are made; old ones obliterated. Volcanic activity casts up new pinnacles of rock under the sea and lowers old ones. Between 1835 and 1908 Rockaway beach grew to the westward at the rate of eight inches a day. In 73 years Coney Island's western end has shoved itself westward fully 1,000 feet.

"It is a risky game," said an officer who had served on one of the three old-fashioned survey ships on the Alaskan coast. "Three times during eight months of service on her we were carried 70 miles out of our course by only moderate gales, and this despite the fact that we did our best with full steam to hold the craft up to the wind. But she wouldn't hold; she was too old. She should have carried 110 pounds of steam, but we could not hold more than 80. The engine was one of the old type single cylinders in use in Civil War times, and in anything more than a full sail breeze our limit of speed to windward was two knots. With favorable winds and no sea we could sometimes churn along seven knots.

"Once we lay to a mile off shore for four days in a gale, expecting every minute to be washed in on a lee shore and ground to pulp, but lacking the power to claw off to clear water.

"Most of the time we had our men at the pumps. For the old thing leaked badly, and we were always having to put back to have her calked. In any sea we were all awash, for we had no freeboard, and did have open gangways, and the sea just sliced across us as though we were a sunken log.

"And it was mighty uncomfortable. We had an open wardroom—everyone slept, ate and lived in a single room, and we had no bathroom on that old ark. So you can imagine that we had a tough time of it on an eight-month cruise. It's just as tough for the fellows there now—they have the same boat, and her accommodations aren't any better. But we did the best we could. It was difficult getting correct soundings and first-class work out of a rig such as that, but we did pretty well. When we missed a rock it wasn't our fault. We never knew it, anyway, until some steamer with a few hundred passengers aboard went into it and sank. Then, if we were around, we'd help rescue those in the water, if we could, and the government would put up a light or a buoy on the rock that the sunken ship had located.

"It's just the same up there now. As Secretary Redfield said, rocks were being located regularly by vessels striking them and going down."

The work of probing ocean trails is interesting. In ascertaining the depth of the water and locating all the under-water obstructions to navigation, a careful record of the fluctuations of the tide while the soundings are being made must be kept. It would not suffice to measure the depth of the water if its height above mean low sea level were unknown for the moment of measurement. To determine this a registering tide gauge is used—a sort of float attached to a mechanism in which a pen traces the rise and fall of the water on a roll of paper which a clock causes to revolve under the pen.

Two methods of sounding are used, the one employing the lead line and the other the wire sweep. In lead-line soundings the process is about as follows: A party goes out in a rowboat or launch, among its members being two observers with sextants and a map showing the shore line and the objects whose positions have been determined by triangulation; a recorder with a clock and record book; a leadman and a steersman. The officer in charge directs the recorder to make a note of the position of the boat, which is determined by the observers, and the leadman casts his line and calls out the depth in feet or fathoms as he draws it up. The recorder makes a note of this and also of the course along which the boat

is headed. At intervals of a minute or more the leadman casts his lead, while every three or four minutes the observers take observations until the end of the course is reached, where a final set of observations locate the end of the line. The boat then runs other lines in the same way until the entire bottom of the surveyed area has been sounded.

The lead-line method of sounding suffices to record the lay of the bottom with sufficient accuracy where there are no extraordinary obstructions; but in regions like the coast of Maine and that of Alaska, where there are many isolated pinnacle rocks and ledges under water, or along shores like those of Florida, Porto Rico and the Philippines, where coral reefs abound and coral heads fringe the coast, special investigations have to be made. The lead line might be cast all around a pinnable rock—might even strike it a glancing blow—and still fail to discover it.

An instance of this kind occurred in Buzzard's bay, Massachusetts, in 1902. Although more than 91,000 soundings had been made, more than 16,000 angles observed and 1,462 miles of sounding lines run, a rock whose head was 18 feet below the surface was run upon by the cruiser Brooklyn during the naval maneuvers of that year.

In order to discover such obstructions in much frequented waters a new instrument, the wire drag, has been devised. It consists of a long wire, sometimes more than a mile long, weighted down at intervals with sinkers and supported at any desired depth by surface buoys. Power boats are hitched to it, usually one at each end and one in the middle, and with these it is drawn around a harbor much as a farmer drives his binder around his field of standing wheat. If it strikes no obstruction the hydrographers know that the harbor bottom is clear to the depth of the drag.

Another line of information the mariner must have is about the movement of currents, so that his ship may not be carried around by currents whose presence he does not suspect. Information concerning them is gathered by means of current rods, as a rule. A current rod is an instrument made to float vertically beneath the water, with only its tip showing above the surface, so that it is not disturbed by the wind. Its movement is observed, and the observations give definite information concerning the currents.

HIGH COST OF ARMY FEEDING

Comparisons That Illustrate Germany's Bills for Feeding Her Army.

The question of subsistence is a vital one to an army, and many battles have been lost from the failure of food supplies. The commissary department of armies in all civilized countries is in the hands of men who are in reality dietetic specialists on a large scale. The present war is the supreme test for the quartermaster's department.

"Rations," as the daily food supply of the soldiers is known, vary in each country according to racial tests or climatic conditions. Thus the meat ration of France is quite different from that of Germany. For the purpose of comparison we have taken the daily field ration of the German army, which is as follows:

Seven hundred and fifty grams of fresh bread, or 500 grams of biscuit.

Three hundred and fifty grams of raw meat (fresh or salted), or 200 grams of smoked beef, pork, mutton, bacon or meat sausage.

One hundred and twenty-five grams of rice (groats), or 250 grams of pulse or flour, or 1,500 grams of potatoes.

Twenty-five grams of salt.

Twenty-five grams of coffee (roasted), or 30 grams of coffee (green), or 3 grams of tea and 17 grams of sugar.

This supply for a week compared with the huge mass of Cologne cathedral shows results very surprising, for we have a loaf of bread weighing 60,130,000 pounds and 393 feet high, which bulks well alongside the lofty edifice. Meat is represented by a side of bacon, but in practice this might be varied by sausage, smoked beef, fresh beef, salt meat, or mutton. The bacon is 180 feet long and would weigh 16,030,000 pounds. Potatoes are the heaviest item, weighing 120,330,000 pounds. The bag would be two feet less in length, while the sugar bag would measure 38 feet high and would weigh 1,365,000 pounds. Such amounts of food seem almost incredible.—Scientific American.

TEST OF HIS THEORY.

"Wombat used to argue that it cost no more for two to live than one."

"Well?"

"Retribution overtook him all right. The stork brought twice as a starter."

HARD TO SUIT.

"How did you like the comedian's song without a chorus?"

"Why, when I heard it I fancied I would have preferred the chorus without the song."

IN THE SANCTUM.

Reporter—How much of an obituary do you want about the man with a rubber neck?
City Editor—Stretch it to half a column.

OUT-OF-ORDINARY PEOPLE

HE FEEDS THE SOLDIERS



Adjutant Netter, a French-American from New York, has been proposed for the military medal and promotion to rank of lieutenant. He has been on duty day and night for several months at Noisy, one of the most important military supply and ammunition stations in France, assisting Colonel Bellenger, the military commissioner of the station at Noisy. His functions are numerous, but he accomplishes all with a smile that won't wear off. He has been astonishing several thousand employees, civilians and soldiers by his wonderful stamina and hustling for more than three months.

Adjutant Netter is well known in the states as former secretary of the Geneva White Cross society and assistant to Dr. Harvey W. Wiley in the international pure food agitation. The first thing he did on arriving at Noisy was to build kitchens for the purpose of supplying hot soup and nourishing food to all troops passing through. More than 100,000 soldiers of France have been fed by these kitchens, which are working day and night. English troops passing through Noisy get special attention from Adjutant Netter. He always has tea, toast and crackers ready for them, also English tobacco and cigarettes, and even English and American newspapers. Those who met Adjutant Netter in New York—he was a well-known figure there—will not be surprised at the success of his hustling powers, but how he has managed to do twenty hours' work a day for three months is a mystery to all in Paris. He does not expect to get a rest until the war is over.

COLONEL HODGES' NEW JOB

In accordance with orders issued by General Kingman, chief of engineers, Col. Harry F. Hodges, for several years engineer of maintenance of the Panama canal, has assumed charge of the District of Columbia water supply system and all river and harbor works in that vicinity, including the reclamation of the Anacostia river and flats.

Colonel Hodges was born in Massachusetts February 25, 1860, and is a graduate of the United States Military academy, class of June, 1881, standing fourth in his class. After serving on staff duties and at Willets point, to May, 1885, he was inspector of rifle practice for the battalion of engineers, and was on duty at Creedmoor during a part of the time.

Among other duties he was employed at the United States Military academy as assistant professor of civil and military engineering, and on various works of river and harbor improvement, surveys, etc. He reached the grade of captain in 1893, and during the war with Spain served as lieutenant colonel and colonel of the First United States volunteer engineers.

In Porto Rico that regiment was engaged in making roads and surveys, constructing defensive works, a reservoir and refrigerating plants, repairing masonry, timber bridges, etc. Colonel Hodges subsequently was in charge of certain river improvements in Ohio, West Virginia and Kentucky. He also was, among other duties, chief engineer officer, department of Cuba, in 1901-02; was in charge of the purchasing department, Isthmian canal commission, and also general purchasing officer in 1907.



HEAD OF THE JESUITS



Very Rev. Wlodimir Ledochowski, who has just been elected general of the Society of Jesus, comes of an illustrious Polish family, which gave to the Catholic church in the past century the courageous Miecislav Halka Cardinal Ledochowski, who suffered imprisonment during the Bismarckian persecution in Germany, because he refused to side with the iron chancellor in his treatment of the inhabitants of Poland.

Wlodimir, in Polish Wlodzimierz, is the eldest son of the late Anthony Halka von Ledochow Count Ledochowski, a famous cavalry officer in the Austrian army, and of the Countess Josephina zu Salls-Zizers.

He was born on the family estates near Cracow in 1866, received a fine education and entered the Society of Jesus at the age of twenty-three. His progress was steady, and in 1901, on the day when he pronounced the last vows of the society, he was made vice-provincial of Poland. Less than a year later he was installed as full provincial. In 1906, when Francis Xavier Wernz was elected general of the society, Ledochowski was given a place in his cabinet as assistant for Germany.

GREAT TRADE EXPERT

Sir Richard Crawford, whom Great Britain has sent to America as commercial adviser to its embassy in Washington, has been for a long time in the government service as one of its most trusted and able representatives, ranking as a minister. He was made a knight commander of St. Michael and St. George in 1911. He was a commissioner of customs for seven years before that, and since then he has been adviser to the Turkish minister of finance. He was born in 1863, and was married in 1894 to Augusta, the only daughter of the late Col. A. D. D. Lestrangle.

Being considered one of England's most accomplished trade experts, Sir Richard was the natural choice of his government when it was found desirable to send to Washington a man who could handle skillfully and tactfully the many problems of commerce and shipping which are arising in connection with the war and the attempts of Great Britain and Germany to isolate each other. Sir Richard is acting in co-operation with Sir Cecil Spring-Rice, the British ambassador, to whose suggestions his appointment is due.

