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THE BATTLE OF BUNKER HILL

ON a hill eighty-seven feet high, once called Breed's Hill, but now known as Bunker Hill, on the peninsula of Charlestown, north of Boston, Massachusetts, rises a granite obelisk 220 feet in height, built to commemorate the first important battle in the American War of Independence.

Three distinguished generals, Howe, Clinton, and Burgoyne, with 12,000 veteran British troops, and a formidable fleet, occupied Boston. They were besieged by an undisciplined crowd of colonists, without arms, ammunition, supplies, or organization. On the morning of the 17th of June 1775, the British officers in Boston, and on the ships in the harbor, saw to their astonishment a breastwork on Bunker Hill, which had been thrown up in the night, and was every moment growing stronger, so as to threaten their position in a serious manner. This was the work of about fifteen hundred Yankees, under Colonel Prescott.

No time was to be lost. The ships in the harbor and a battery on Copp's Hill opened fire; but those were not the days of Armstrong artillery. General Howe took 3000 infantry, and crossed over to Charlestown in boats to storm the works. It was a fine summer day, and the hills, spires, and roofs of the city were covered with spectators. Soon a fire, bursting from the wooden houses of the village of Charlestown, added to the grandeur of the spectacle.

General Howe was too proud of British valour to turn the works, but, forming his troops in two columns, marched to the assault. The Americans, who had little artillery, and no ammunition to waste, waited in silence until the British were within ten rods, and preparing to charge when a sheet of fire broke out along their breastworks with such deadly aim, that whole ranks were cut down, and those not killed or wounded fled precipitately to the water-side. They were rallied, and advanced a second time with a like result. General Clinton, who had watched the progress of the battle from the heights of Boston, now came with reinforcements, some gunboats enfiladed the works, and a third attack, aided by a flank diversion, and the fact that the Americans had expended their small store of ammunition, was successful. The rebels were driven from their works at the point of the bayonet. Having no bayonets themselves, they fell sullenly back, fighting with the butts of their muskets. The British loss was about 1000 killed and wounded, out of a force of 3000; that of the Americans, 400 or 500. It was a British victory which gave hope and confidence to the Americans, and has been celebrated by them as one of the most glorious events of their War of Independence.—*Chambers' Book of Days.*

FISHERIES RESEARCH IN THE GULF OF ST. LAWRENCE IN 1917

By A. G. HUNTSMAN,
Biologist to the Biological Board of Canada

IN the spring of 1917 an expedition was planned to investigate the region at the northern end of Cape Breton Island, where the waters of the Gulf of St. Lawrence flow out into the Atlantic on the south side of Cabot Strait. In the middle of May the motor-boat "Prince," named after Professor E. E. Prince, Commissioner of Fisheries for the Dominion, and Chairman of the Biological Board of Canada, was taken from the Atlantic Biological Station at St. Andrews, New Brunswick, in the Bay of Fundy, around Nova Scotia to Cape Breton Island. Mr. Arthur Calder and Captain Elmer Rigby were in charge of the boat, and carried out the various fishing operations and experiments most efficiently. Eastern Harbor, on the western side of Cape Breton Island, served as our headquarters for the summer, and proved to be most suitable as a base from which to study the neighbouring waters. We were much indebted to Mr. Clifford Le Couteur, the capable local manager for the firm of Robin, Jones & Whitman for many courtesies extended to us during the course of the summer.

A commodious house that happened to be vacant, was placed at our disposal and proved to be an excellent laboratory for the carrying on of the microscopic and other detailed examinations of the material that was collected. Each month from May to September the condition of the waters between our base and the Magdalen Islands was determined by making observations at a series of selected stations; additional trips being made up and down the coast of Cape Breton to examine other localities. In particular an examination was made of Anse Bay just east of Cape North and of the water at different depths out into Cabot Strait, where we were successful in operating

both our net trawl and fish fry trawl at a depth of 200 fathoms in spite of the small size of our boat (60 feet). Many rare and curious forms were obtained in that deep channel, which deserves to be more thoroughly investigated.

A great variety of methods and gear must be used to discover what kinds of animals there are in the water, where they remain, and how they live. First and foremost come the usual fishing implements.—The drag seine, which is a net that is run out into the water in the form of a semi-circle with the open side towards the shore and is then hauled up on the beach by means of a line at each end, gave us the shore fishes such as trout, young salmon, alewives, small herring, capelin, cunners, white perch, sculpin, tomcod, young hake, flounders, dab, window-panes, smelt, mummichogs, sticklebacks, pipe fish, sand lance, and butterfish, anchor and buoy at each end, and left a variable length of time before hauling. It catches a variety of fishes depending upon the place where it is set, but we may mention the following: Cod, haddock, hake, pollock, flounder, plaice, halibut, mutton-fish, sculpin, skate, and grey-fish. The gill-net, of which we used various meshes, is a net set vertically at any depth in the water, into which the fishes run during the night and become entangled. Herring, mackerel, smelt, and grey-fish are caught in this way, and also many others such as cunner, hake, sculpin, and cod, when the net is in the right locality. The net trawl, which is towed through the water, is a long net bag with a broad mouth and a funnel about half way along on the inside, which permits the fish readily to reach the small "cod" end, but keeps them from getting out again. The mouth is kept open, either by a stout beam, or, as is more usual now, by means of "otter" boards, one at the end of each of the two "wings" of the trawl, to which the wire cables for hauling are attached. These "otter" boards act in the same way as a kite, for just as a kite tends to rise when hauled through the air, so do these boards tend to go one to one side and the other to the other, when hauled through the water. The net trawl is operated in mid-water or on bottom and takes whatever fish there are at that level, supposing that it is of the right size and mesh, and is towed rapidly enough through the water. We obtained with it cod, plaice, sole, hake, flounder, smelt, cunner, butterfish, dab, skate, sculpin, grenadier, lobster, and spider crab, as well as many of the small bottom animals.

Our trawl was small, being designed for catching shrimp, of which we obtained various kinds, but it was quite successful in taking the large fishes as well, for we have brought up in it after one hour's hauling as much as five hundred pounds of fish, including one that weighed fifty pounds. The fish-fry trawl is a similar trawl, but small and made of sacking and without any funnel. It takes the smaller animals in the water, including the young fishes, and occasionally even quite large ones. For the fish eggs and the very small animals and plants that swarm in the water, what are called "plankton" nets are used. Plankton is a name given to the floating organisms of the water, which are legion. The nets are made of the silk bolting cloth, used by millers for sifting flour, the coarsest of which will stop anything as large as one-sixteenth of an inch in diameter, while the finest will permit only those less than one two-hundredths of an inch in diameter to pass out. These nets are of various sizes and are towed through the water at various depths, and by their means we were able to trace the spawning and development of the fishes with floating eggs, as well as to determine the distribution of the numerous animals and minute plants that serve as food for the fry of the fishes and even for some of the adults, such as the herring and mackerel. The dredge, which is merely a rectangular iron frame to which a bag of net or sacking is attached, was used for dragging on bottom to get samples of the varied animals and seaweeds that populate the ocean floor so densely and form the food of the many bottom-living fishes. It also gave us some of the bottom material—stones, sand, mud, etc., in which or on the surface of which the animals live. Small traps or pots made of laths are ordinarily used for catching crawling animals like the lobster, but for this purpose we used simple hoop traps, which were under the direction of Captain Rigby. Each of these consisted of an old wagon tire to which was attached a short bag of fine-meshed net. The trap was baited with dead fish and lowered to the bottom, a buoy being left attached to the line. Although there was nothing to prevent the animals that gathered around the bait from leaving the trap at any time, we found that this apparatus was as effective in capturing lobsters and crabs, as the ordinary lobster pot and had the advantage of taking animals of any size from the largest of them to the smallest that failed to go through the net. Fish also were taken,

cunners being captured in it regularly when it was placed near shore where they lived. By means of these traps we discovered that a barren zone existed off the Cape Breton shore, comprising the part of the sloping bottom between the depths of 10 and 20 fathoms. In this zone the temperature at the bottom underwent violent fluctuations often in the course of a day or so, at one time being as high as 65° F., and at another as low as 39° F. This was caused by the winds, for when the wind was blowing on shore it drove the surface water against the coast and heaped it up, forcing the deeper, colder water down, then when it changed and blew off-shore the warm surface water was driven away from the coast and the cold water welled up from below to take its place and so flooded the zone. The effect of this on the slow moving bottom animals may be imagined. Few of them would be able to stand such changes, but the active fishes are able to move up and down the slope and avoid these changes, and in fact we caught the cold-loving cod and haddock in large numbers in this zone, when the temperature was low. The importance, to any one who is fishing, of knowing what the temperature at the bottom is in such cases, is obvious, for when the cold water up-wells and comes nearer shore, the fishes will follow it and may be caught without the fisherman having to go as far from land as at other times.

Head-lines for catching fish with baited hooks and jigs of lead with many hooks, we used only occasionally.

Another important part of the work was the determining of the physical conditions in the water. Most important of these is the temperature, which was taken regularly during the whole summer at definite depths from the surface to the bottom at the stations between Cape Breton and the Magdalen Islands. For this purpose special thermometers were used, which were lowered to the desired depths, left a few nights and then turned over by letting slide down the line a weight, which released the upper end of the thermometer case. The thermometer on being turned over, registered the temperature at the moment in just the same way that a clinical thermometer registers one's temperature on being removed from the mouth. Samples of the water were obtained from the same depths by using brass water bottle, which automatically closed on turning over and so imprisoned water from the desired depth. The many samples of water, that were collected, are being examined chemically by Professor Vachon, of Laval University, in order to determine how much salt they contain. In this way we learn how the physical conditions in those waters changed during the course of the summer, and that gives us the explanation of the movements of the fishes.

INVESTIGATION

The primary object of the expedition was to obtain as much information as possible concerning the undeveloped fishery resources of the region. Particular attention was paid to the lump-fish by Professor Cox, to the cunner by Mr. Johnson, and to the plaice by myself. The many facts learned concerning their abundance, edibility, life histories, etc., will be dealt with in special accounts and need not be detailed here. In the utilization of each fish special problems are presented, which require careful consideration before any very definite statement can be made as to the prospects of their proving of importance.

Another object we had in view in going to that part of the Gulf was to determine the fate of the vast quantities of herring eggs spawned at the Magdalen Islands. We were able to study this question, only incidentally, on the trips made monthly to the Magdalen Islands. The spring spawning takes place during May and is practically confined to the shores of Pleasant Bay. The hatching of the eggs was virtually completed by the middle of June, and the very small fry were found on the 19th and 20th of that month to form a vast unbroken swarm, extending from Pleasant Bay to the south and east for 25 miles on the route to Eastern Harbor. They were undoubtedly being dispersed through the water by the tidal and wind currents, and also being carried to the eastward by the general set of the currents toward Cape North. The enormous numbers of these fry may be imagined from the fact that a 20-minute tow with our fine meshed plankton net gave over one hundred of them even at a distance of 17 miles from the Magdalen Islands. In July, a month later, they had largely disappeared as far as our researches showed, for we obtained them only in Pleasant Bay at night depths, and they were twice as large as in June. Probably by that time they had collected into schools, and would be missed unless one happened to strike a school. In the fall the fry of the fall spawning herring were found both on the Cape Breton shore and at the Magdalen Islands. They were not very abundant except locally, and were

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AN ACCOUNT OF MELBOURNE STORR'S DEATH

Somewhere in France
10-5-18

My Dear Mrs. Storr:

I am writing to tell you what particulars I know of poor Mell's death. Mell volunteered to go over on a raid to the German lines on the night of the 18th, going over he was hit by either a



R.E. MELBOURNE STORR.
Killed in Action, May 7, 1918.

rifle or machine gun bullet in the left shoulder.

A sergeant who went over beside him said Mell was one of the first to get across. After the raid was over Mell was going back to the dressing station with the German prisoners, when a shell exploded very close to him, several pieces striking him in the breast, penetrating his heart killing him instantly, he suffered no pain whatever.

Mell was well-known and liked by the whole company.

Please accept my sympathy on your great loss of a true son, while we have lost a true pal who always played the game.

If there is anything further I can do, please advise me as I would only be too glad to find out anything you wish to know.

Believe me,
Very Sincerely Yours,
CHESTER W. MALLOCH
No. 742079

NEWS OF THE SEA

—Washington, June 6.—Sinking of the British steamship *Harpathian*, one hundred miles off the Virginia Capes at 9 o'clock yesterday by a German submarine was announced to-night at the Navy Department. The entire crew was rescued by the steamer *Palmer*, which arrived late to-day in Chesapeake Bay. The submarine fired a torpedo. One of the British crew was injured. The *Harpathian* was a freighter of 2,800 net tons.

—Washington, June 7.—A navy statement today, says that details show that the submarine that sunk the steamer *Harpathian* off the Virginia Cape Wednesday carried at least thirty-seven men, for that many were counted on her deck by the *Harpathian's* crew. She mounted two 6-inch guns.

—An Atlantic Port, June 6.—Captain R. R. Coudreau, and the crew of the schooner *Edward R. Baird*, Jacksonville to New York, sunk by a German submarine, eighteen miles off Cape Charles, Tuesday morning, were landed here today.

—A Cuban Port, June 6.—A steamer arriving here to-day reports that at 5 o'clock Sunday afternoon nineteen persons had been picked up about thirty-eight miles south of New York, near where two American schooners were sunk by gunfire from a German submarine. The people were in a small gasoline launch when found. The next day the vessel halted a steamer bound for an American port and transferred the submarine victims to her.

The steamer to which survivors of two schooners were transferred, referred to in the foregoing dispatch from a Cuban port, reached New York Tuesday. The steamer brought in members of the crews of the schooners, believed *Wiley* and *Hattie Dunn*, torpedoed Sunday.

—London, June 7.—It was announced today that the members of the British delegation to the Anglo-German peace conference at The Hague were not, as reported yesterday, on board the hospital ship *Koningin Regentes* when that vessel struck a mine and sank in the North Sea. Instead, the delegates were

aboard the hospital ship *Sindora*, which rescued the survivors of the *Koningin Regentes*.

Among the hospital ship's company rescued were nineteen returning German civilian prisoners.

—London, June 6.—Several persons were killed by explosions or drowned in the capsizing of a lifeboat from the steamship *Kenilworth Castle*, which reached a British port in a crippled condition as a result of a collision. Late reports are to the effect that eight members of the crew of the *Kenilworth Castle* are missing and that three passengers have not been accounted for.

The *Kenilworth Castle* is a steamer of 12,975 tons. She was built in Belfast in 1904, and is owned by the Union Castle Mail Steamship Company.

—Washington, June 7.—Sinking of the Norwegian steamship *Vindland* by a German submarine sixty-five miles off the Virginia Capes at 6 p. m., Wednesday, June 5, was announced to-night by the war department. The crew was rescued and landed to-day at Cape May, N. J.

The *Vindland* was sent down nine hours after the British steamer *Harpathian* was torpedoed thirty-five miles farther from the Virginia coast. Until word of her came from Cape May to-day nothing had been heard of the operations of the enemy raiders since the landing of the *Harpathian's* crew yesterday. The *Vindland* was a steamer of 1,191 tons.

—An Atlantic Port, June 7.—A French armed merchant ship came into port here to-day and reported an encounter with a German submarine off the Virginia Capes. Details of the battle are lacking, but it is said the fight occurred a short distance outside the Capes. The extent of the damage to the merchantman is unknown.

—Washington, June 9.—The American steamer *Pinar Del Rio*, was sunk by a German submarine seventy miles off the coast of Maryland yesterday morning. One of her boats, with the captain and seventeen members of the crew, is missing; another with sixteen men has landed on the Virginian coast.

New York, June 9.—The *Pinar Del Rio*, owned by the American and Cuban Steamship Line, Inc., was built at South Shields, England, in 1905 by J. R. Heath & Son. She had a net tonnage of 1,607 and a length of 806 feet. She was last listed as leaving an American Atlantic port on May 11 and arriving at Havana on May 18. She was commanded by Captain J. MacKenzie.

—Pacific Port, June 9.—A burned vessel was seen about 400 miles off shore on Tuesday night by a steamship which has arrived at this port to-day. When the steamer had arrived alongside, the vessel had burned to the water's edge. There was no sign of life from the floating wreckage. The name of the ship had been burned away, and no trace of lifeboats was discovered.

—An Atlantic Port, June 10.—Captain J. MacKenzie and 16 members of the crew of the American steamer *Pinar del Rio*, who have been missing since the vessel was sunk by a German submarine off the coast of Maryland on June 8, reached here to-day on a Norwegian steamer which rescued them from a small lifeboat about 70 miles off the coast of New Jersey.

All the members of the crew are thus accounted for, as the chief mate and fifteen men were landed early this morning at a life saving station on the North Carolina coast.

—New York, June 10.—News of the sinking of the American steamer *Mauban* off the coast of Italy late in May was brought here to-day by 26 members of her crew who arrived on a freight steamer.

The *Mauban*, of 1,233 tons gross register, was built in 1900. The steamship that brought the crew of the *Mauban* on board also, 12 members of the crew of the auxiliary schooner *City of Ponticola*, sunk by a submarine in May near Genoa, and 80 members of the crew of the steamship *City of Wilmington*, which was destroyed by fire after leaving an American port with a cargo of cotton.

—New York, June 12.—The British transport *Argonia*, owned by the Cunard Steamship Company, has been torpedoed and sunk by a German submarine several hundred miles from the British coast while on her way westward, according to private cable messages received here Tuesday. Ninety members of her crew were picked up by another steamer eastward bound, and landed on the English coast, the message said. Search is being made for forty more of her crew who are reported to be missing.

The *Argonia* was a steel four-masted steamship of 8,153 gross tons, built at Newcastle, England, in 1907, for the cabin and immigrant trade between London and Canada.

—New York, June 12.—Two Norwegian steamships, the *Vindland* and *Henrik*

Lund, were sunk by a German submarine when about 200 miles east of Cape Charles, Va., on last Saturday and Monday respectively. This brings the total of vessels sunk by U-boats since they began their campaign in these waters to eighteen.

Their crews, totalling sixty-eight men, were brought here to-day by a Danish steamship which picked them up at sea after they had been set adrift in their small boats. Eighty tons of copper ingots part of the cargo of the *Vindland*, were taken aboard the U-boat before the steamship was sunk by means of bombs. The vessel was stopped by the submarine on June 8, and the crew were obliged to unload the copper into the ship's small boats and transfer it to the U-boat. Then the small boats were taken in tow until the *Henrik Lund* was sighted on June 10.

—A Canadian Atlantic Port, June 12.—The American 2,000-ton steel steamer, which went ashore last night at a point on the Nova Scotia coast in an exposed position but, according to advices from the scene of the stranding, there is a possibility of re-floating her if the weather continues fine. The steamer, which was recently built at an United States lake port, was on her maiden voyage from there to a New England port with a cargo of coal loaded at a Cape Breton port.

When the ship struck, wireless calls for help were sent out and at midnight life-savers and fishing boats went out in search of the wreck. It was not until daybreak that the ship was located, when the crew of thirty-four were rescued and landed at a Nova Scotia port. Latest reports from the wreck state that the ship rests firmly on a ledge and is heavily listed to port.

—Rome, June 11.—An official statement issued by the Italian Admiralty today says: "At dawn on Monday near the Dalmatian Islands two small Italian torpedo boats under command of Commander Rizzo Luigi De Milazzo, attacked an Austrian naval division, consisting of two large battleships of the *Viribus Unitis* class, assisted by ten destroyers. Our units, having broken through the line of destroyers, hit the leading battleship with two torpedoes and the other with one, and returned to their base unscathed. One of the destroyers pursued them and was damaged seriously."

Statistics of the *Viribus Unitis* type are four in number and are the largest in the Austrian navy. They displace 20,000 tons and carry a thousand men each.

Paris, June 12.—The loss of the Austrian battleship *Szent Istvan*, torpedoed in the Adriatic, is officially announced in Vienna, according to Havas dispatch from Basel, Switzerland.

NORWAY'S SHIP LOSSES

Washington, June 6.—Norway's shipping losses through German submarine warfare and other war causes continues heavy, despite the Norwegian Government's protests against the U-boat warfare. During May, said a cablegram to the Norwegian Delegation to-day, fourteen vessels of 11,791 tons were sunk. Two seamen lost their lives and four are missing.

Norway's losses since the war began now number 769 vessels, totalling 1,127,310 tons, with the loss of life of 1,008 of her seamen in addition to 704 men and 53 vessels missing.

SHIPPING LOSSES CUT IN HALF

Washington, June 7.—Senator Swanson, acting chairman of the naval committee after a conference with navy heads, today declared that the Allied naval forces have destroyed sixty per cent. of all German submarines constructed, and that they have cut shipping losses in half. Senator Swanson said his information was obtained from highest navy department authorities.

The German submarines recently operating off the Atlantic coast, Senator Swanson said, are believed to have been driven from the coast and also from the main American shipping routes. None of the American war craft stationed abroad, Senator Swanson said, has been or will be withdrawn to this side because of the German raids.

MORE CANADIAN TROOPS ARRIVE IN ENGLAND

Ottawa, June 6.—It is officially announced through the chief press censor's office that the following troops have arrived in England:

Engineer Training Depot draft, St. Johns

Que. Infantry—1st Battalion, 1st Quebec Regiment, draft No. 38, Montreal; 2nd Battalion 2nd Quebec Regiment, draft No. 39, Montreal; 2nd Battalion, Eastern Ontario Regiment, draft No. 8, Ottawa.

Army Service Corps, Army Medical Corps.