

The M.V. *Calanus*

One night in Hudson Strait the *Calanus* lay in the midst of an ice field. It was dark, the ice floes swirled and ground together, and open water was nowhere to be seen. Some hours after the vessel was caught and rendered largely powerless by the ice, an immense floe with a high overhang struck; it pressed against the port quarter, hooked itself over the gunwale, and forced the boat downward. At the same time, another floe moved against the starboard bow near the water line and lifted that side of the vessel. As the starboard bow rose and the *Calanus* heeled farther and farther to port, there appeared to be no way to prevent her loss. But just at that moment a patch of open water appeared directly astern. Reverse power slipped the vessel back off the starboard ice and out from under the port ice to the open water, where she again floated and regained her stability. She traversed the rest of the ice field by daylight the next morning.

Most vessels would not have survived that 1953 night in Hudson Strait. The *Calanus*, however, is no ordinary vessel; had it been, the story above might have had a different ending. The tough, sturdy hull of the *Calanus* is constructed of wood, yellow birch below the water and oak above, supported by stout and closely spaced white oak ribs. Her hull, developed from a Scandinavian model, is tub-shaped: her beam of 4.5 m is nearly one-third of her length. With a rounded bottom and a shallow keel, she is designed to be lifted by heavy lateral ice pressure.

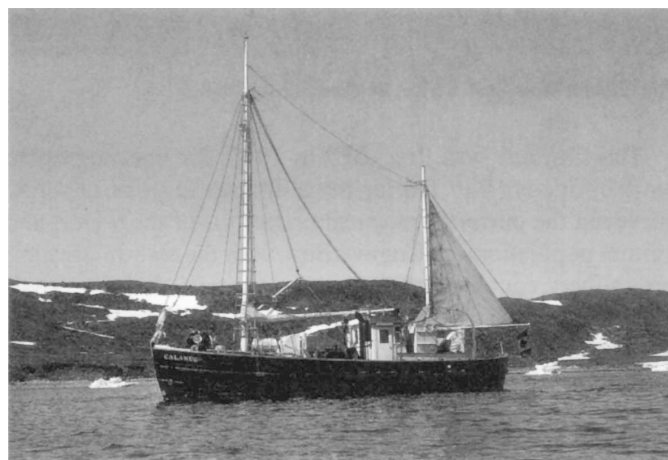
Inevitably, the history of data-collecting at sea has been closely linked to a series of such sturdy ships. Among those active in the Canadian Arctic, the *Neptune*, first Canadian vessel to observe oceanographic conditions in our Arctic, was sailed to Hudson Strait in 1884. She was soon followed by the *Alert* and the *Diana*. In 1914 the *Burleigh* investigated fisheries in Hudson Bay, and between 1929 and 1931, the *Acadia* made oceanographic observations in Hudson Bay and Hudson Strait. In 1930 the Hudson Bay Fisheries Expedition was put in the field using the chartered steam trawler *Loubyrne*.

In Canada, interest in the Arctic began to increase after World War II. It became clear that in spite of the fine pre-war efforts expended from the vessels mentioned above, we knew sadly little about our arctic waters and their plant and animal content. In recognition of this, the Eastern Arctic Investigations (later to become the Arctic Unit, then the Arctic Biological Station), a laboratory of the Fisheries Research Board of Canada, was set up in 1947. The initial laboratory, under the direction of Professor Max Dunbar, was located at McGill University in Montreal.

It was obvious from the beginning that there was need of a full-time vessel equipped to carry heavy trawling gear and plankton nets, to provide laboratory space, and to accommodate a small crew on cruises lasting up to several weeks. The building of such a vessel was quickly authorized. A basic plan devised by Max Dunbar was developed into a ketch-rigged schooner equipped with a 77 hp diesel engine. She was named *Calanus* after a tiny copepod crustacean found in immense

numbers in polar and near-polar seas the world around, which is an important source of food for many marine fish.

The design of the *Calanus* was of necessity a compromise because of the need on the one hand to sail in shallow, near-shore waters and to haul the vessel out of the water for the winter, and on the other to have as seaworthy and versatile a craft as possible. To meet these requirements, she was built smaller than she might otherwise have been, approximately 15 m overall.



The M.V. *Calanus* in Frobisher Bay in 1965.

Beaching facilities were few in the Canadian Arctic 50 years ago, and hauling some 50 tonnes of vessel and cradle up a rough beach using wooden rollers on a moveable track of heavy timbers required a major effort each season.

In the earlier years the wooden cradle, with rollers and timber track lashed to its lower surface, was pulled down the beach far enough to float at high tide, towed away from the shore to a predetermined point, then allowed to settle with the falling tide. At low water, the cradle was loaded with rocks to prevent flotation as the tide rose again. At the height of the tide, the *Calanus* was moved to lie directly over the cradle, and as the tide fell, the vessel was manoeuvred until it settled properly on the cradle. The rocks were then hurriedly removed from the cradle, and the vessel and cradle started on their halting journey back up the beach. It was of the greatest importance to move far enough during the first low tide period to prevent refloating on the next tide.

Of course the whole operation could be accomplished only if the wind remained reasonably calm, a phenomenon not readily to be relied upon in the Canadian Subarctic in the autumn. There was also need of a substantial tide range in order to float the vessel onto the cradle. Fortunately this was found in many parts of the eastern Subarctic. Beaching under the circumstances took many days and a considerable outlay of hard work. Happily, during the later years of beaching at Iqaluit, vastly improved conditions prevailed, highlighted by a cradle with wheels and unlimited bulldozer power.



The *Calanus* in summer sea ice, Belcher Islands, 1959.

The *Calanus* was first used in 1949, for oceanographic work in Ungava Bay. During three summer seasons, her crew surveyed the currents, physical properties of the water, and animal populations of Ungava Bay, with the now interesting preliminary conclusions that marine fin fish, with the possible exception of the Atlantic cod, were likely to be of little importance in the bay, and that shrimp appeared to warrant more extensive examination.

The study moved northward into Frobisher Bay and on to Hudson Bay in 1952, and continued in northern Hudson Bay, where the walrus was a major interest, until 1954. Late that season the first long voyage south, to Montreal, was carried out for a refit. The *Calanus* was sailed back to the Arctic in 1955, as far as Igloolik in northern Foxe Basin, where she wintered in the ice of Turton Bay, not far from where Parry's vessels *Fury* and *Hecla* passed the winter of 1822–23.

During the period at Igloolik, the *Calanus* served as the base of operations for the first year-round studies of water properties and the plankton cycle and of the walrus to be carried out in the Canadian Arctic. For this undertaking, the vessel was placed in a small, moderately sheltered bay and held in position while the sea froze around her. For the next nine months, the *Calanus* served as home and laboratory for her winter crew of two. Over the course of the winter, the approximately two metres of ice that developed around the vessel caused no significant problems, and in August an orderly breakup of the winter ice left her in open water and ready for another summer season. During the winter, collecting was done not directly from the *Calanus*, but at various distant sites. The researchers travelled to and fro by dogsled and worked through holes made in the ice. This was the only time the vessel was occupied during the winter; later, winter work was carried out from land-based accommodation.

After being beached for her second winter in Foxe Basin, the *Calanus* was sailed straight south to James Bay, to be used for the next two years in studies of James Bay and southeastern Hudson Bay. She then moved to northwestern Hudson Bay and, in 1962, sailed once again to Montreal for her second refit. This stay in the south lasted nearly three years because of problems with budget and bureaucracy.



The *Calanus* being hauled to the sea.

After this delayed renewal, the *Calanus* was sailed again to the north, this time to Iqaluit, where a base was established and used for the remainder of the vessel's active life. During the 1970s, government funding became gradually more difficult to obtain, and the *Calanus* was left unused for longer and longer periods. It is worth noting, not without irony, that the last active season of the *Calanus* was funded not by government, but by an oil company interested in environmental conditions off the east coast of Baffin Island.

In the 1980s, the municipality of Iqaluit (formerly Frobisher Bay) purchased the *Calanus*, reportedly to use the vessel in conjunction with a presentation of the history of Frobisher Bay. This plan was not carried out, and the vessel next moved into the hands of a private citizen of Iqaluit. Through all this the vessel has lain inactive on the beach at Iqaluit since the summer of 1979. Weathered paint and rust show the effects of time; and breakage, the consequences of vandalism.

The *Calanus* is a surviving descendant of the few small craft which pioneered the study of oceanography in northern Canada during the first few decades of this century. She was the first vessel designed and built specifically for arctic oceanography; the first used in perennial programs, those of an oceanographic laboratory devoted to arctic research; and the first to include a wide range of physical, chemical and biological observations in oceanographic studies in the Canadian Arctic.

The present condition of this important little vessel reveals a sad and unworthy conclusion to a unique career of three decades. She represents a phase of Canadian activity now largely past: the period of transition from mainly geographic to scientific exploration in our Arctic. Little time remains to take action if we are to prevent the irretrievable loss of this historic ship.

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