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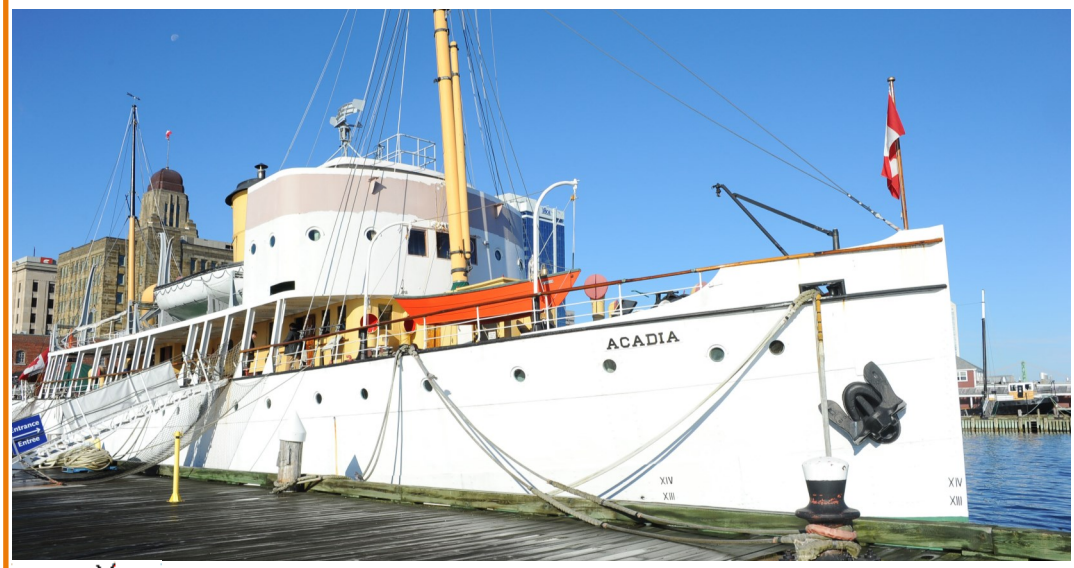
VOICEPIPE

Issue 76 February 2018

The Newsletter of the BIO-Oceans Association

Minister promises CSS *Acadia* will be "out of the water in 2018" for repairs



The CBC reported on 5 December 2017 that the Honourable Leo Glavine, Minister of Communities, Culture and Heritage, stated at a news conference that the CSS *Acadia* will be "out of the water in 2018 to start on the necessary repairs". The Minister's statement expands on his response to the BIO Oceans Association in his letter of 16 November 2017 where he stated "museum staff, along with our colleagues at the Department of Transportation and Infrastructure Renewal are working on next steps. Our combined efforts will ensure that the vessel can be showcased to new generations of museum visitors".

The Minister also stated at the news conference that he would ask the federal government to partner on fixing the *Acadia*. The availability of funding for ships of historical significance seems more likely with the announcement by the Government of Canada on 27 January 2018 of $3.5 million for repairs to the HMCS *Sackville* .

BIO-OA President, Claudia Currie, and your Vice Presidents, Andy Sherin and Borden Chapman visited the Member of Parliament for Dartmouth—Cole Harbour, Darren Fisher, in his office on 17 January 2018 to gain his assistance in identifying federal sources of funding, Mr. Fisher offered his support and promised to contact Minister Glavine to explore opportunities for federal funding.

ANNOUNCING
A Chronology of the Bedford Institute of Oceanography
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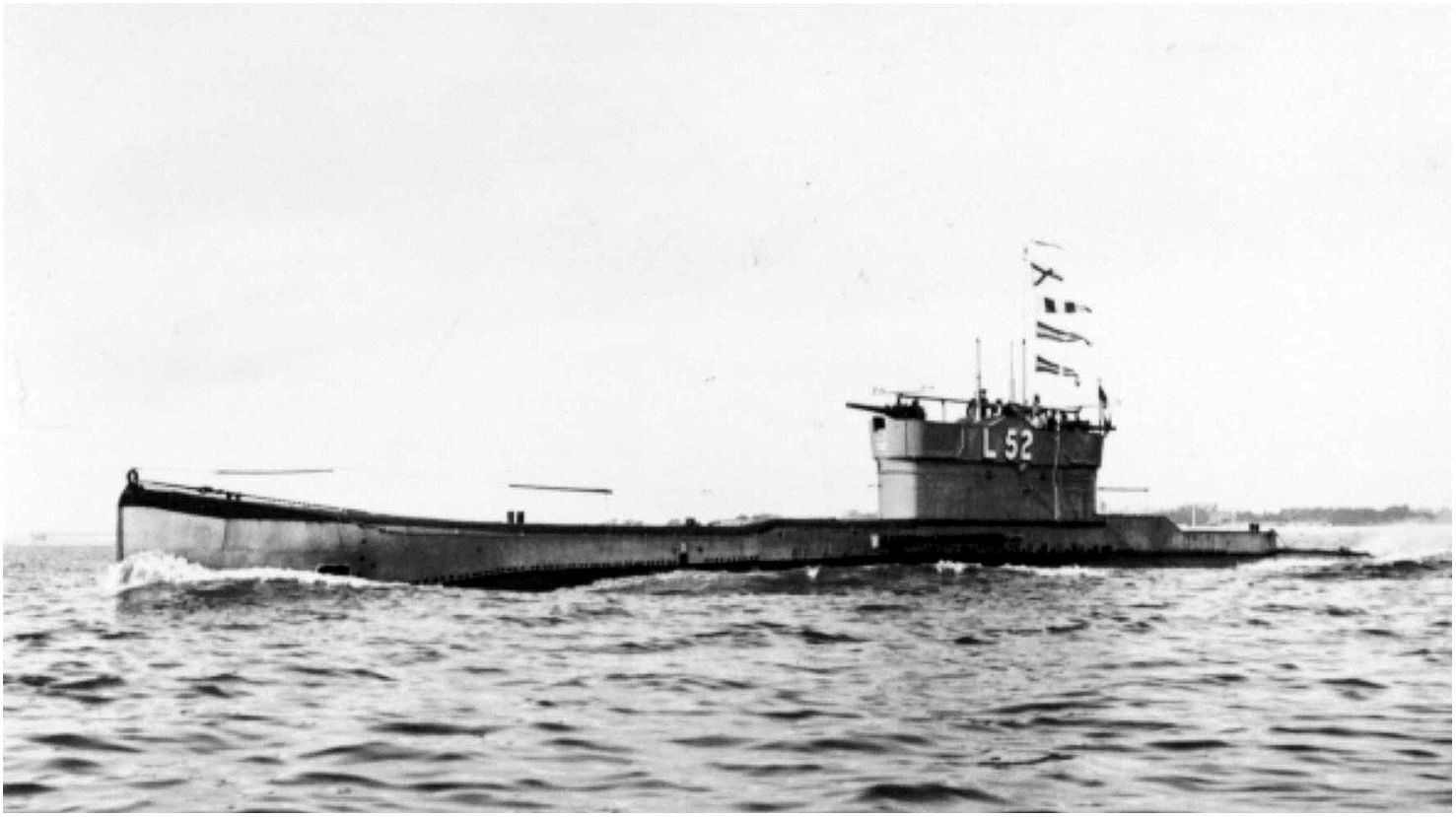


Figure 1: Photograph of another British submarine in the L class, *L52*. Photo credit: Terry Whalebone - originally posted to Flickr as *L52*, used in this issue of the *Voicepipe* under Creative Commons license CC BY 2.0, https://commons.wikimedia.org/w/index.php?curid=7287920 A copyrighted photograph of *L26* we could not use can be found at http://www.worldnavalships.com/l_class.htm

The Mystery Submarine

by D.L.McKeown and G.Fader

On the final day of CCGS *Hudson* cruise 2000-020 we carried out some planned investigations at the site of the Swiss Air 111 disaster off St. Margaret's Bay in collaboration with representatives of the Transport Safety Board and Department of National Defence. We employed our sidescan and Campod video systems to examine the crash site for seabed recovery after extensive dredging and explored a nearby wreck that was found during the 1998 search and recovery operation. Early in the search, this wreck was determined not to be related to Swissair 111 so no further investigation of it was conducted at that time. Our close examination of this wreck site was expected to reveal geological information about how the wreck affected seabed scour and we wished to assess rumours that it was a World War II German submarine. To quote from Don Gordon's cruise report in an activity summary written by Gordon Fader after the survey:

The sidescan data clearly show the wreck to be between 80 and 90 m in length and that it is resting upright on the seabed, although partially buried in the gravelly sediment. Numerous deck features on the wreck show in the sidescan shadows including three masts, near bow objects and other details. Following the sidescan survey, a Campod investigation was conducted at both ends of the wreck refraining from activity in the central area where the possibility of wires and protruding obstructions could occur. This was another impressive piece of ship-handling by Capt. Marsden. The imagery clearly defined the circular cigar-shape of a submarine. A film production crew from Eco-Nova was on board filming the sidescan and Campod activities. Follow up dives are planned to the wreck to determine its identity and to produce a documentary film."

At first glance, the sidescan image did not look like a submarine as it had many structures on the deck that are not normally seen on a sub (Figure 2). All of us on the *Hudson* were fixated on the video screen as we saw the first images appear from the Campod. It was not long before we realized it was indeed a sub and the whale-tail shape of the stern was impressive suggesting an old sub. The conning tower had fallen to the seabed and

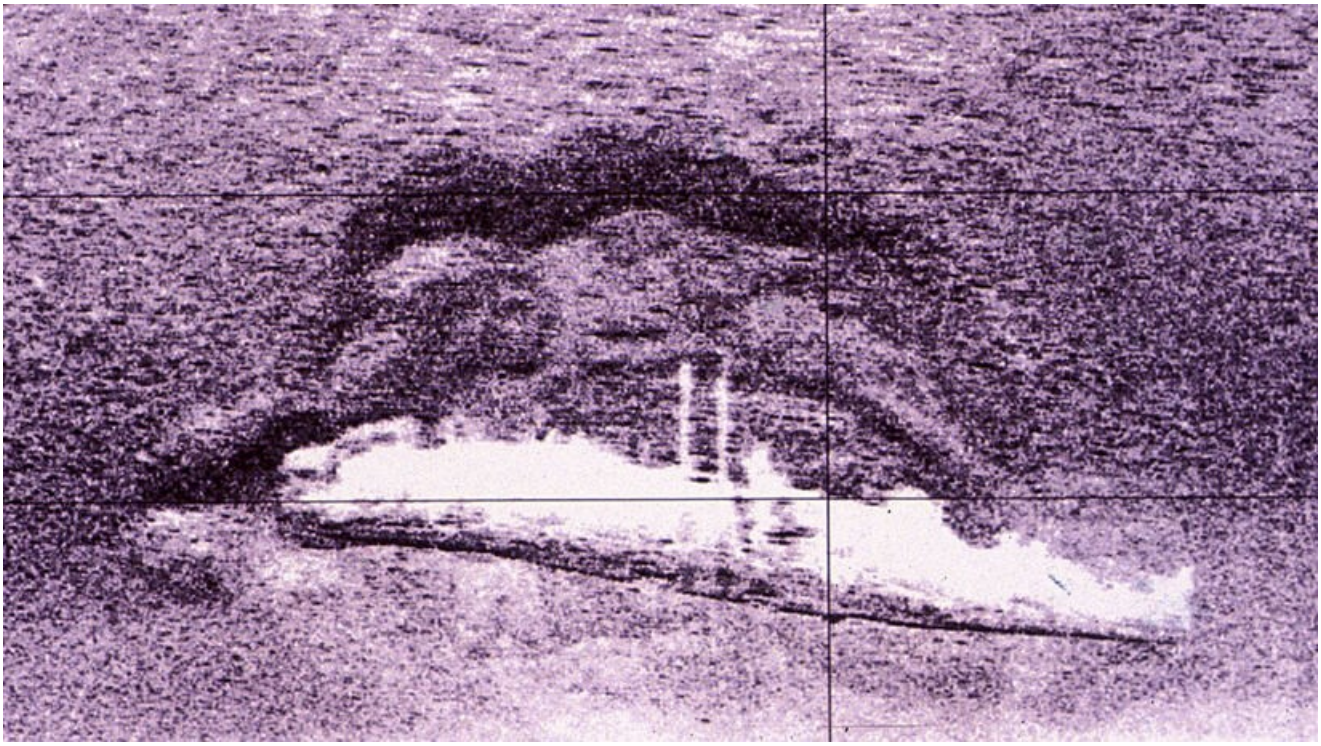


Figure 2: Sidescan sonar image of *L26* showing that the sub lies in a circular depression on the seabed and that there are many features on the deck that show in white in the acoustic shadow.

was in great shape with negligible marine growth in contrast to the hull.

Having been on board when the sidescan image of the wreck unfolded followed by the appearance of the ghostly video images from the Campod, and in light of the rumour that it was a sunken German submarine, our curiosity was aroused. A brief search of the internet revealed that it was the submarine *L26* and is described on the Province of Nova Scotia's *"On the Rocks"* website (http://www.novascotia.ca/museum/wrecks/wrecks/shipwrecks.asp?ID=2666).

It stated that the vessels dimensions were: tonnage 1080, length 237.5. feet, breadth 23.5 feet and had been built at Barrow-on-Furness, England in 1918. A Wikipedia web page (https://en.wikipedia.org/wiki/HMS_L26) offered some more detail and slightly different dimensions. *L26* was originally a member of a fleet of British submarines built immediately after World War I. A few were kept in reserve as they became outdated by a newer generation of submarines in the 1930s. Several of these L boats were transferred to the Royal Canadian Navy in 1943 to provide much-needed training targets for new crews of Canadian anti-submarine escorts. *L26* worked out of Digby at HMCS *Cornwallis* base and at Bermuda, attached to HMS *Somers Isle*. These L boats were replaced by newer British submarines in 1944 and were laid up at Halifax and Digby. In 1946 *L26* was deliberately sunk off St. Margaret's Bay as a sonar training target. Further details of its service with the Royal Canadian Navy, can be found in Julie H. Ferguson's history of the RCN submarine service, *'Through a Canadian Periscope'* available in the local Halifax library. The wreck has become a popular site for recreational divers. Mention is made of it on a number of web pages and there is some video footage of the wreck available www.efootage.com/stock-footage/23254/Sunken_Ww1_Submarine/

What still puzzles us is whether or not *L26* was ever a mystery wreck. As noted above, the Province of Nova Scotia *"On the Rocks"* website states that its location was only discovered during initial search operations at the Swiss Air 111 disaster site. Furthermore, to quote from an article by Jason Kennedy in the monthly internet journal *Narcosis Newsletter*:

"During the aftermath of the tragic crash of Swiss Air flight SR111 there was a large search pattern used in hopes to discover any large pieces of airplane wreckage and ultimately the cockpit voice recorder. High tech equipment including ROV's, mini submersibles, cameras, and divers was used to help in locating these items.

A Canadian Towed Array Sonar System (CANTASS) and an underwater remote vehicle with a camera recorded the presence of something on the ocean floor during the September 1998 search. Two shipwrecks were discovered in this search area. One was a smaller wooden vessel and was not investigated where it was obviously not a part of the airplane. The second wreck came upon the images as a cylindrical shaped object about 150 feet long. An investigation was done but when the rusty object appeared on the video screen they knew that this was also not a part of the airplane and documented the position for future investigation. Word got out that a possible submarine had been discovered. Rapidly it had turned into a World War II German U-boat. As the rumors got around, divers must have been thinking, 'Is this another U-WHO (U-869 of the coast of N.J.)?"At this point the investigators downplayed it. 'There's a 99.9 percent likelihood it's not a submarine," said Lieutenant-Commander Jim Bradford of BIO's Trinity Route Survey. 'That won't be determined until Navy divers investigate the scene."

Following the survey from the *Hudson* that confirmed it was a submarine, Eco-Nova undertook a diver survey of the sub and included the observations in one of its dive series documentaries. Diver Mike Fletcher dove into the submarine through an open hatch and observed the engines and control panels. Remarkably, the conning tower, including the periscope, lies on the adjacent seabed having fallen to the side. The tower was literally free of organic growth that we later learned was the result of its construction from a copper-based alloy that prevented marine growth. A note to remember is that submarines have a large amount of equipment mounted on the hull, but that it is covered with cowling for streamlined operation. However, when that corrodes and disintegrates, the winches and other deck equipment give oblique sidescan sonar imagery an impression that the wreck is a battleship (see sidescan image Figure 2).

The RCN originally knew its location because they sank it in 1946 and subsequently used it as a sonar training target. Did DND forget about the wreck over the years or did they prefer to keep it secret as such objects can serve as hiding places for enemy submarines during times of war? Perhaps that is the mystery of this wreck.

A Chronology of the Bedford Institute of Oceanography (1962-2012)

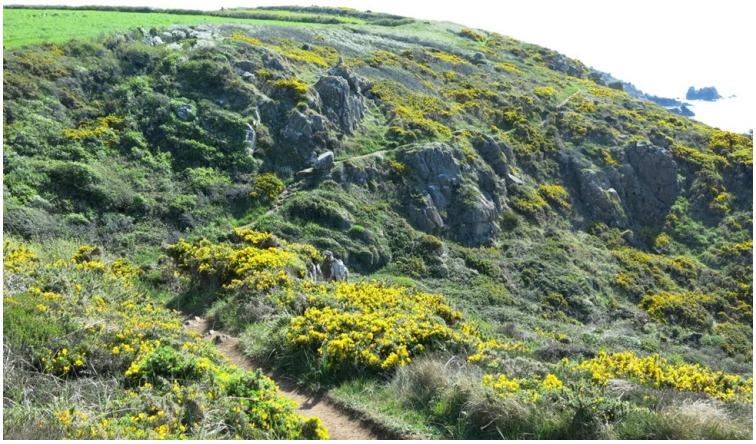
by Donald C. Gordon

The BIO Oceans Association has just published a chronology of BIO history and will be accessible on the BIO-OA website (http://www.bio-oa.ca). This 300-page document, which is seen as complimentary to ***Voyage of Discovery***, was compiled to provide a comprehensive and balanced overview of how BIO evolved as a federal oceanographic research laboratory over its first fifty years. It builds upon earlier chronologies developed by Dale Buckley of the BIO Oceans Association and Carol Broome of the BIO Library. The principal sources of information were the BIO Annual or Biennial Reviews that, with just a few gaps, were prepared between 1962 and 2009. Other sources of information included ***Voyage of Discovery***, published documents, internal reports, the Internet and personal contacts.

The chronology begins with a summary of some of the major events that took place in the development of marine science in Canada that helped set the stage for the establishment of BIO in 1962. This is followed by a year-by-year (1962-2012) listing of selected information under the headings of organization and staff, facilities, ships, program, technology, conferences and workshops, honours and awards, prominent visitors and external events. It concludes with a summary, conclusion and list of key references on BIO history.

It is hoped that this chronology will be of value and interest to past, current and future BIO staff, as well as others in the broader oceanographic community who are interested in learning about the rich history and many accomplishments of this remarkable institute.

Aerial photograph of the Bedford Institute of Oceanography in 1962.



Photos: Coastal paths and towns; clockwise from top left; nearing The Lizard, Cornwall; near Mawnan Smith, Cornwall; Sidmouth and the cliffs of Devon; and the rugged coastline east of Salcombe, Devon. Photo credits: Peter Wells

Coastal Coves and Headlands
Trekking the South-West Coast Path in England

by Peter Wells

Exploring distant lands by foot is a wonderful pastime, as notable trails and paths abound around the globe (see Baxter 2016 and Moor 2016). One trail "across the pond" from Nova Scotia is the historic South-West Coast Path that runs for 630 miles (1014 km) along the southern coastline of England. It officially starts at Minehead, Somerset, on the Bristol Channel, and ends at South Haven Point in Poole Harbor, Dorset, on the English Channel.

Some parts of the path date back hundreds, if not thousands of years, being trodden by local villagers, fishermen, farmers, smugglers, pirates, invaders, the military and coastal watchers. In the 19th century, parts of the path became popular with summer visitors coming south from the cities for the clean sea air. During WW II, many defensive positions such as bunkers and pill boxes, some still intact, were constructed along the coast. After the conflict, as England's economy and prosperity improved, the path's many sections were slowly connected, upgraded and clearly marked with an acorn symbol. Private lands were made publically accessible through enlightened national legislation. The Coast Path was officially designated as a National Trail in 1978.

The path has gained considerable fame due to its accessibility (day walking being very popular), easily found accommodation, numerous historic sites, a rugged and undulating nature, some quite remote sections, and the outstanding beauty of countless coves, cliffs, headlands, hills and beaches. Though never higher than 318 meters above the shore, it is said that to walk the whole hilly path is equivalent to ascending Mount Everest four times!

Photos: Walkers along the coastal path in Dorset; left, two new friends pointing the way; right, the author hopefully making the grade!
Photo credits: left, Peter Wells; right Graham Cogman, Brundall, Norfolk.

In mid-April, 2017, after a winter of planning and fitness walking, I embarked on the path's southern stretch, winding my way along the English Channel from Cornwall to Dorset. I backpacked the path over 27 days, starting at my cousin Clive's home near Hellston on a beautiful sunny day. I covered 80% of the path (285 miles, 460km), ending at Poole harbor. Occasionally to stay on schedule or to meet relatives, I took a bus or train. Carrying only essential clothing, water and key sundry items such as my IPad and toiletries, nights were spent in small hotels, pubs, and B and B's. Logistical support and encouragement were also provided by two other cousins and a friend. Fresh clothes, extra supplies, good company, home-cooked meals and extra rest were very welcome.

Other memories and impressions linger. Each day, I rose early, had a nutritious breakfast, purchased lunch, and hiked for 6-8 hours trying to average at least 20 km/day. It took a while at the start to adapt physically and mentally to the routine. But as I discovered, one does adapt and walking the English coastline for a few weeks is a wonderful way to embrace Spring and limber the muscles. The ocean air is salty and fresh, the spring flowers (bluebells, garlic, wild daffodils) and yellow gorse are in bloom, the landscapes are in multiple shades of green, and the ever present sea a continuously changing pattern of blues and greys. Going along from cove to cove, village to village, crossing estuaries by boat and hiking over the many headlands, often one after another, one had a sense of calm discovery and no worldly cares. I paid little attention to the wider world, despite having the IPad along to make nightly bookings. Primary concerns were my feet (they held up well in Italian Scarpa boots), the weather and being vigilant on the path that sometimes veered close to cliff edges and dramatic drops to the shores below. Fortunately for this trip, the weather was mostly sunny and warm. But when the path was wet, it was very wet and in Dorset, indescribably muddy and slippery. I was lucky having only three rainy days!

To record the walk, I kept a daily diary despite end-of-day tiredness and sometimes, one too many English ales! My jottings supplemented the many photos taken with a trusty Canon E15 camera. Surprisingly, I met only one "thru-walker" the whole time, a lanky and somewhat mysterious chap from east Europe. On most days I met numerous day trippers, all friendly, willing to stop and chat, and often quite curious as to why a Canadian, identified by five flags on my pack, would choose to walk in Britain! I assured them that the bearded stranger was not lost! Especially welcomed was meeting two walkers from Norfolk, with whom I had two wonderful days in Dorset along the geologically fascinating section called the Jurassic Coast. This coastline, from Exmouth (near Exeter) to Old Harry Rocks (near Poole), is known internationally for its rock formations containing many fossils (ammonites, trilobites, dinosaurs) and is now a UNESCO World Heritage Site.

Visiting this part of England and exploring on foot is highly recommended – it provides a coastal adventure of beautiful scenery, friendly people, great food and drink, and countless historic villages and harbors. I am planning to return in March this year to walk the northern sections, starting at Minehead and walking westwards to

Photos: A diversity of sights: clockwise from the top left: an old fortress in Dartmouth harbour, Devon; introduction to the Jurassic Coast; the famous arches of Durdle Door, near Lulworth Dorset; and an art installation on the waterfront at Seaton, Devon. Photo Credits: Peter Wells.

Cornwall. I am hoping for fine weather, given I'll be walking against the prevailing winds (and likely rain). Perhaps more tales will come of further coastal adventures, fueled in my retirement by restless feet and a desire to keep exploring from the mountains to the sea.

For further reading:

Baxter, S. 2016. A History of the World in 500 Walks. Thunder Bay Press, San Diego. 400p.

Moor, R. 2016. On Trails. An Exploration. Simon and Schuster, Inc., New York.340p.

National Trail Guides. n.d. South-West Coast Path. Aurum Press Ltd., London.

In Memoriam

Stephen Smith, died 19 December 2017, Research Scientist, DFO, BIO

Joan Guilderson, died 20 December 2017, Administrative Assistant, DFO, BIO

From the President

All:

Welcome to another very exciting version of the *Voicepipe*. This newsletter just keeps getting better each time. I am sure you will enjoy this issue.

2018 is bringing exciting things to the forefront for the Oceans Association. We are increasing our membership numbers. Our executive is working hard on several projects and our social calendar is beginning to fill up.

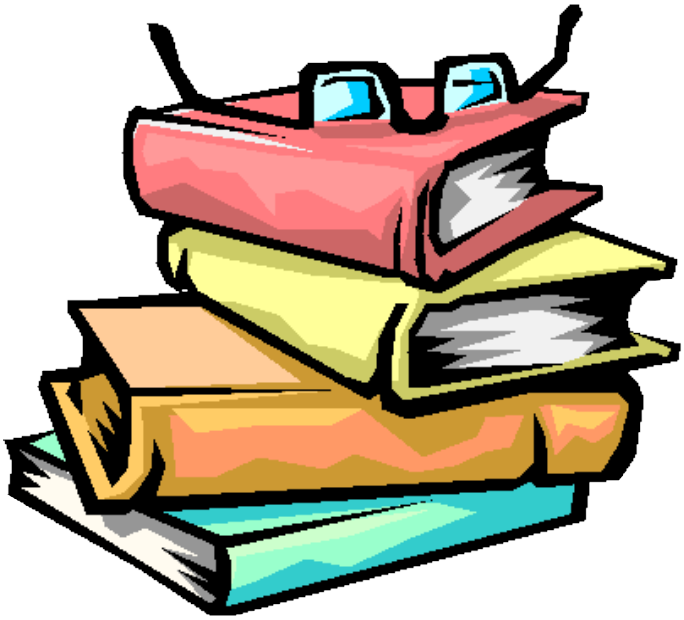
Oceans Association members' contributions to this edition of the newsletter include a CSS *Acadia* restoration update as well as articles by Dave McKeown and Gordon Fader, then off to England with Peter Wells, and Gordie Oakey, takes us to the seafloor in the Arctic Ocean. In addition, we bid farewell to the long-standing column '*Noteworthy Reads'*: David Nettleship has decided to redirect his talents in other directions after 16 years. The BIO Oceans Association is very grateful to David for his dedication to this column.

I am also excited and very pleased to let you know that Don Gordon has completed his *Chronology of the Bedford Institute of Oceanography (1962-2012),* an outstanding piece of work and if you love BIO and our history, this 300 page document is for you!

I too have some news: as of 16 February 2018, I officially join the ranks of federal retirees. I want to thank Jennifer Hackett, Helen Hayden, and Bruce Anderson for organizing a great send off on 7 February. In addition, I am very grateful for Gordon Fader and Patrick Potter for their gift of music. And many thanks to all those who took time out of their busy day to attend.

After 38 years fulltime at BIO, I can honestly say it was FUN. And now, onto the next phase, which hopefully includes seeing as many 'BIO'ers' as I can in the 'BIO after life!' Claudia

Pictures from Claudia's retirement party. Top: Claudia (left) with Natalie Shea, Subdivision Head, GSC Atlantic (right) holding congratulations from Justin!



'Farewell to Noteworthy Reads'

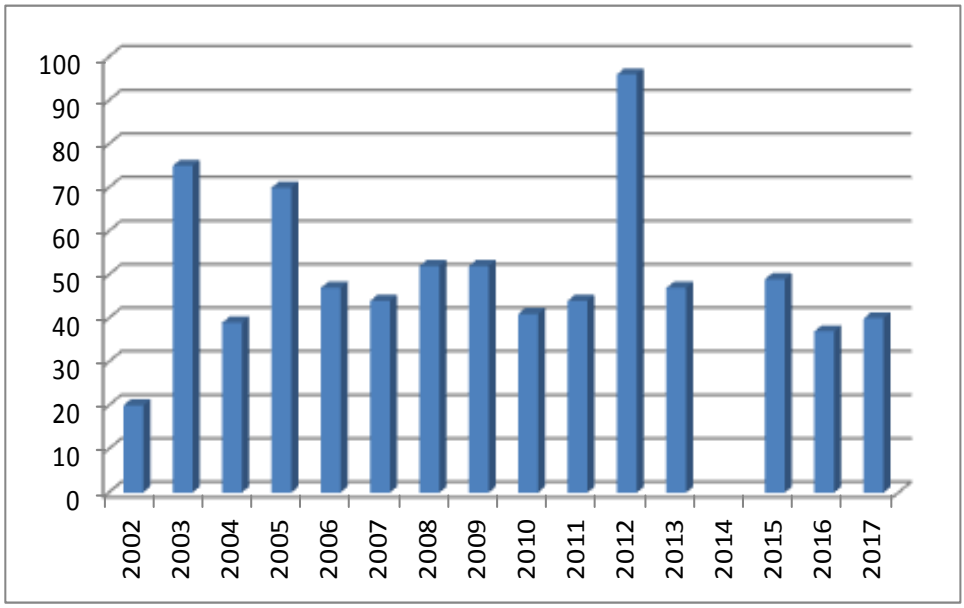
David N. Nettleship
Book Editor, Reviewer & Creator
'Noteworthy Reads: Book Reviews in Brief'

It is with considerable sadness that I announce my retirement as book reviewer and disappearance of my long-standing column "Noteworthy Reads: Book Reviews in Brief" in the BIO-Oceans Association's (BIO-OA) newsletter. Following 16 years (October 2002 to November 2017) since its first appearance and a grand total of 753 reviews of books deemed of some interest to members and friends, I've reluctantly decided to close the covers of "Noteworthy Reads" and put down my pen. It has been a fun and rewarding experience for me, and hopefully for readers as well, but the limits of time and age demand that my focus and energy be redirected to other pressing projects, both science and family orientated. But I shall always continue to scan the popular and academic science literature, the never ending source of knowledge and inspiration towards the future.

I hope you've enjoyed 'Noteworthy Reads' as much as I've enjoyed producing and delivering the book reviews to you. And before closing, I must thank both Michel Latremouille and Andrew Sherin, editors of the BIO-OA newsletter spanning the 15 years of the column (2014 omitted owing to editing the '*Voyage of Discovery*' volume), for their unwavering support of the 'Noteworthy Reads' column and always finding space for its appearance. I also thank those unnamed people that helped in various ways through the years, one or two that contributed reviews of books of special interest to them. Finally, and above all, I thank those men and women who have produced the living literature of science, the rich and unending books that have excited and challenged me for more years than I care to admit!

My best wishes to everyone within and external to the BIO-Oceans Association family, and keep reading and learning with the full awareness that knowledge is power to effect change.

David Nettleship
Head of St. Margaret's Bay, Nova Scotia
January 2018



The figure to the left illustrates David's remarkable achievement of book reviews in *Noteworthy Reads* from 2002 to 2017. *Noteworthy Reads* was absent from the newsletter in 2014 due to David's time spent on the editing of *Voyage of Discovery*.

Advertisement for T.C. Gorman Ltd., the contractors for the BIO jetty that appeared in the 25 October 1962 edition of The Chronicle-Herald on the page reporting that the Bedford Institute of Oceanography had "started functioning" with about a third of the full staff of 300 scientists and support staff.

Modern Research Vessels

Excerpts from the Chronicle-Herald, Thursday 25 October 1962

The Bedford Institute of Oceanography at Dartmouth will be serviced by a fleet of multipurpose vessels.

The fleet will comprise of east coast units of the Canadian Hydrographic Service; units used by the Atlantic Oceanographic Group of the Fisheries Research Board; and four new vessels, largest of which is the $6.5 million CGS (sic) *Hudson*.

The east coast fleet of the Canadian Hydrographic Service at present comprises the CGS *Baffin*, ..., the CGS *Acadia*, two chartered vessels, and two launches.

Units in use by the Atlantic Oceanographic Group are the CNAV *Sackville*, ... the CMS *A.T. Cameron*, ... and the 84 foot MV *Harengus*.

Of the four new vessels, the *Hudson* is in the final stages of construction .... It is expected to be ready for operation in the spring of 1963.

Two of the ships in the new fleet will be authorized replacements of the now obsolete *Acadia* and *Cartier*. Design of the two new vessels has been completed, but construction has been held up by the austerity program.

...The fourth new ship in the program, the CHS *Maxwell*, was launched in August 1961. The ship is 115 feet long with a 226-foot (sic) beam and is especially designed for inshore survey work, particularly along the more rugged and isolated regions of Canada's eastern seaboard. (Actually 22.6 foot beam)

Editor's Keyboard: Four special people are the highlight of this issue of the *Voicepipe*. First, I want to thank my Associate Editor David Nettleship for his commitment to the *'Noteworthy Reads'* column which has been a feature of this newsletter almost continuously since 2002. Up until recently, he was also my second set of eyes on drafts of the newsletter correcting and suggesting modifications to maintain a high quality publication for our readers. Don Gordon is to be congratulated for his tireless work on the '*Chronology of BIO'*, I look forward to leafing through it. Gordie Oakey is the focus of the article on the last page that highlights the work at BIO that has been going on for several years to collect evidence for the extension of Canadian jurisdiction in the offshore. I want to highlight current work at BIO in future issues and would welcome the contribution of articles from current staff. Finally, the retirement of our President Claudia Currie can't go unnoticed. Claudia has been an irresistible force at BIO for years. Notable in my mind was her work with others on *Hypatia* concerning women in science at BIO and of course her latest triumph, the BIO Expo. *Andy Sherin*

ABOUT THE BIO-OCEANS ASSOCIATION

The Bedford Institute of Oceanography Oceans Association (BIO-OA) was established in 1998 to foster the continued fellowship of its members; to help preserve, in cooperation with the Institute's managers and staff, BIO's history and spirit; and to support efforts to increase public understanding of the oceans and ocean science. Membership is open to all those who share our objectives. Most current members are present or past employees of BIO or of the federal departments of Environment, Fisheries and Oceans, and Natural Resources (or their predecessors) located in the Halifax Regional Municipality. Membership is $10.00 per year, $40.00 for five years, or $150.00 for a lifetime membership.

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Unless otherwise credited all photographs were taken by Andy Sherin

We had "samples of the moon before they had samples of the rocks from the Arctic seafloor"

Gordon Oakey, Research Scientist with GSC Atlantic at BIO was interviewed by the CBC on 9 December 2017 about the rock samples that were dredged from two underwater ridges in the Arctic Ocean — the Lomonosov Ridge and Alpha Ridge. The samples were collected on a joint Sweden-Canada icebreaker expedition between August and September 2016 on which Gordon was the lead scientist. The expedition was part of the research being conducted at BIO to collect evidence for Canada's submission to the United Nations Commission on the Limits of the Continental Shelf for the possible extension of Canadian jurisdiction in the Arctic Ocean.

Gordon is an avid rock collector and has donated a rock exhibit to BIO that has graced the lobby of BIO for many years. It is understandable then for Gordon to state in his interview "Professionally this is one of the most exciting things to happen to me in my career."

Due to the rarity of samples of the ocean floor basement material from the Arctic, the samples collected on this expedition are very valuable for understanding how the Arctic Ocean was built.

The criteria for the extension of national jurisdiction beyond the Exclusive Economic Zone according to the

Gordon points out the location of the Lomonosov Ridge and Alpha Ridge for CBC reporters. Photo credit: CBC

United Nations Convention on the Law of the Sea are complicated. The extension can be due to the foot of the continental slope, water depth, or the thickness of sedimentary rocks, but also contains criteria related to the geological continuity of a nation's landmass. The rocks collected by the expedition "provide some of the best fundamental pieces of evidence" for the geological extension of Canada's landmass into the Artic Ocean and thus the extension of Canada's jurisdiction further into the Arctic Ocean.

Gordon's interview can be watched at:

http://www.cbc.ca/player/play/1113067075866

Photos and samples of sedimentary rocks dredged from the Lomonosov Ridge by the joint Sweden-Canada icebreaker expedition to the Arctic Ocean in 2016. Photo credit: CBC