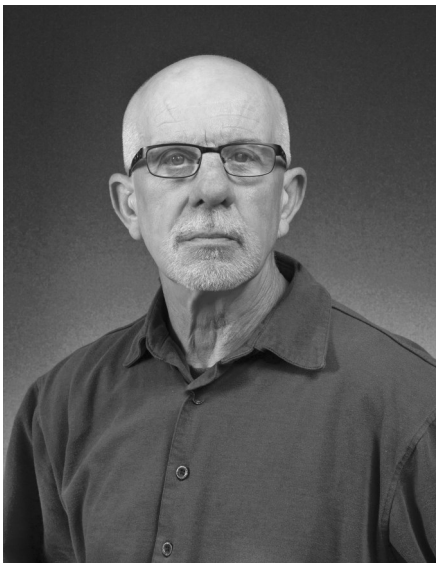
VOICEPIPE

Issue 92 April 2023

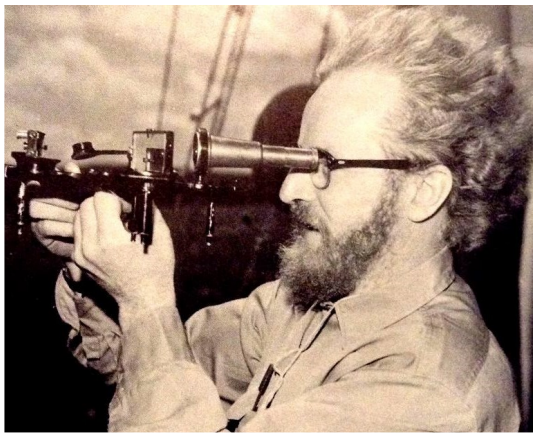
The Newsletter of the BIO-Oceans Association

Awarding three, yes three! Belugas on 24 May

Shawn Roach, 2020



Kelly Bentham, 2022



Dale Eliot Buckley
May 1936 - April 2020
Creator of the Beluga Award

Beluga Award Ceremony and BIO-OA AGM
Wednesday 24 May
Ford Auditorium
BIO

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Dale Eliot Buckley

The BIO-OA Executive decided in 2020 that Dale Buckley would be honoured with a special Beluga Award in recognition of his work at BIO, the spirit he exhibited carrying out that work, and his role in establishing both the Oceans Association and the Beluga Award. He was most pleased when informed of this recognition, and looked forward to accepting the award at our usual ceremony, what was to be the 20th anniversary of the Beluga Award. Because of the restrictions to combat Covid-19, our annual meeting and the award ceremony were postponed. Most unfortunately, Dale passed away in early April 2020.

His obituary stated "his proudest achievement was the creation and sponsorship of the Beluga Award at BIO".

Peters Wells said about Dale "During my early career at BIO in the 1970s, I would sometimes meet Dale in the halls and over lunch, always finding him willing to chat about his research and inquire about mine, despite our different specialties. He exemplified the exciting research atmosphere that existed at BIO in its early years, so important to new and younger investigators".

Lisa O'Neill said "Dale's kindness and support were always genuine and he encouraged me to become far more. His humour was always of great delight to me. Dale and I had years of back and forth practical jokes, always trying to outdo one another, and they became hilarious battles of creativity. I think, though, it was his generosity that was truly his trade-mark. I watched from the sidelines for a decade as he took students, colleagues, admin staff, mail room staff and cleaners under his wing and gave everyone a chance".

Dale's special Beluga Award will be accepted by his wife Betty.

Shawn Roach

The 2020 recipient of the Beluga Award is Shawn Roach, a Benthic Systems Technician in the Habitat Ecology Section of DFO.

In one of the many letters of support for Shawn's nomination, He was labelled a Super Tech, denoting a person who "provides the highest level of support through expertise and perhaps most importantly through dedication and commitment. These people act responsibly, work very efficiently, regularly exceed expectations, deliver on time, and never make excuses. These people are rare, but Shawn Roach is such a person."

The following excerpt from a letter of support is a fitting summary for his nomination: "Shawn has always been one of the hardest working individuals I've ever met. He continually goes out of his way to be helpful, often going above and beyond what you would expect of anyone. He is diligent, conscientious, and thorough and his work reflects this. One of his greatest qualities is how industrious he is, earning his nickname as the "MacGyver" of our section. On a personal level, I've learned a lot from Shawn on how to treat others; he is one of the kindest, most thoughtful, and considerate people I've ever met. He brings a sense of camaraderie and fun to any team he works with; qualities that are invaluable in the success of a project.

Kelly Bentham

Kelly's decades of service are exemplary of the spirit of teamwork that the Beluga Award recognizes. As a photographer and caretaker of the BIO photo archives, Kelly straddled the film to digital transition, contributing to programs and initiatives in the field and the office, leading and supporting technological advancements in underwater photography and acting as a valuable resource for audio/visual aids in the Ford Auditorium and throughout the BIO Campus. He has been a fixture at countless Open Houses and a strong supporter of Oceans Association work documenting the visual history of BIO.

Kelly has always been very approachable and somehow has been able to find time and energy for unscheduled tasks that folks wander in with. Professional, focussed (pun intended) and trustworthy, Kelly is a most deserving recipient of the Beluga Award.

PRESIDENT'S MESSAGE

First, I want to thank Andy Sherin for once again stepping in as interim editor and putting this issue of the *Voicepipe* together.

As Spring begins to take hold we can enjoy longer days, warmer temperatures and green shoots of new growth everywhere. The members of BIO Oceans Association can also (finally) look forward to gathering at an in-person Annual General Meeting at the BIO Ford Auditorium on 24 May beginning at 9:30 am.

Immediately following the AGM, we will present three Beluga Awards to Kelly Bentham, Shawn Roach and to Dale Buckley's family in honour of his contributions to Oceans Association and his role in creating the Beluga Award.

The Oceans Association has many achievements to celebrate during this 25th anniversary year. Don Gordon's article in this edition of the *Voicepipe* outlines OA accomplishments in detail: this newsletter, our website, the Beluga Award, instrument archives, the Fossil Forest, participating in BIO's 50th anniversary in 2012, including the BIO Science Expo, anniversary gala and Crystal Awards and of course producing many publications, most notably, the *Voyage of Discovery*. The latest effort, spearheaded by Don Gordon, but supported by many others, is a history of the CSS / CCGS *Hudson*.

It's a time to look back with pride on what has been accomplished and to acknowledge the efforts of many OA members. But it's also a time reflect on the goals of the Association and to look ahead to chart our course for the next 25 years. We've seen many changes at BIO over the last quarter century as the face and role of the institute continue to evolve. If Oceans Association wants to remain viable and relevant we must also evolve.

As Don indicates, the three main objectives of the BIO-OA are:

• Preserving BIO's history, culture and community spirit

• Increasing public awareness and understanding of the oceans and ocean science

• Holding social events to foster the continued fellowship of its members

Do these objectives this still resonate with the membership? Are we being effective? Are we relevant (or even known) to current BIO staff? Anniversaries such as this are an opportunity to celebrate achievements, of course, but also to take stock.

As Don says at the end of his article: membership in the BIO-OA has started to gradually decline and it has become increasingly more difficult to find members to serve in leadership positions. Please consider sitting on the OA executive as a member at large or in some other capacity. You will have an opportunity to step up at the AGM in just a few weeks.

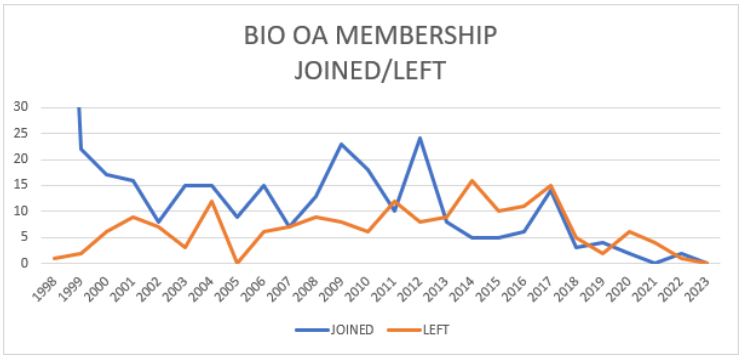
Wednesday 24 May

Beluga Award Ceremony and Annual General Meeting

BIO Ford Auditorium

0930 AGM
1030 Coffee and Cookies
1100 Beluga Award Ceremony

Regarding membership, the chart below that shows the number of members joining and leaving in each year. In 1998 there were 126 founding members (literally off the chart!), but in the last decade we've lost more members that we've attracted. We need to fix this if we want to be around for another 25 years.



The pandemic kept many of us out of BIO and didn't help to keep Oceans Association on the radar of current BIO staff, our most important source of new members. The Beluga Awards presentations are a great opportunity to make the case for folks to join up. I hope to see you there!

Patrick

Celebrating Twenty-Five Years!

The Bedford Institute of Oceanography Oceans Association (BIO-OA)

by Don Gordon

This year marks the 25th anniversary of the Bedford Institute of Oceanography Oceans Association (BIO-OA). This unique organization was established in 1998 by a group of retired BIO scientists who felt a strong sense of community and collective pride in BIO's many scientific accomplishments. They realized that BIO was more than just a place to work but a wonderful community of talented and dedicated people who enjoyed working and socializing together and they wanted to help carry on this tradition for the benefit of all staff regardless of departmental affiliation.

The three main objectives of the BIO-OA have been:

- Preserving BIO's history, culture and community spirit
- Increasing public awareness and understanding of the oceans and ocean science
- Holding social events to foster the continued fellowship of its members

The BIO-OA is a registered society with its own Memorandum of Association and By-Laws. While it works closely with BIO managers and is well integrated into BIO activities, it is an independent organization. It is run by a Board of Directors and Officers elected each year at an Annual General Meeting. Current membership is about 200 with most being current or retired employees of BIO. However, membership is open to all those who share the BIO-OA objectives, and links have been established with several non-BIO organizations such as the Nova Scotian Institute of Science and the Titanic Society. Income is generated solely by membership fees and all activities are carried out by volunteers.

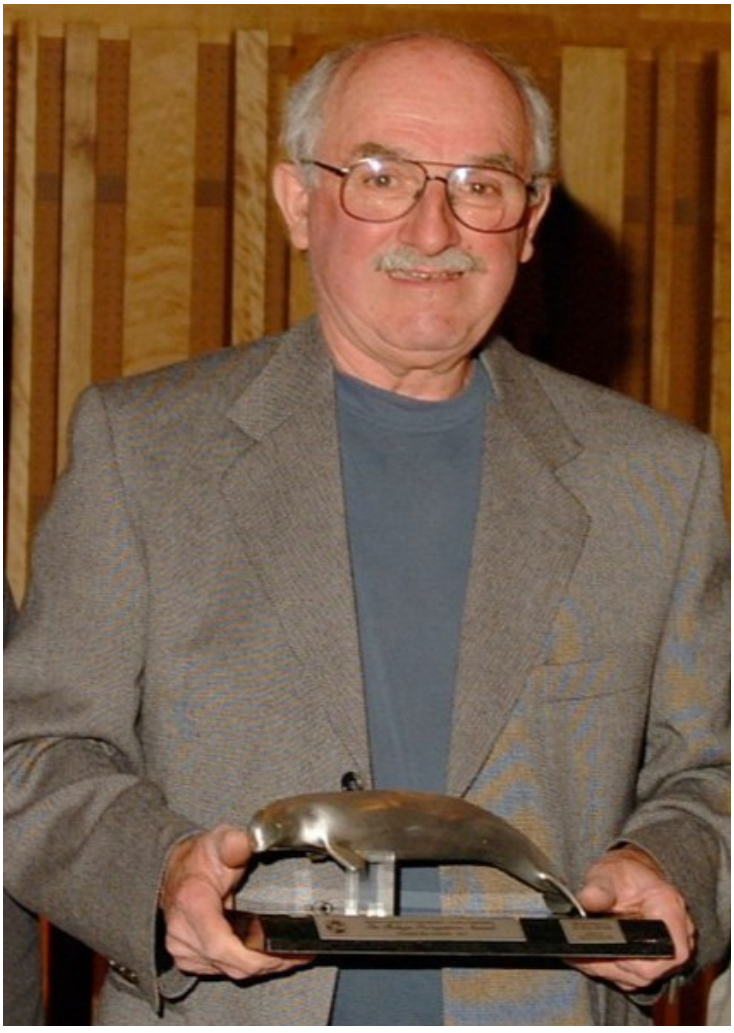
Here is a summary of the major accomplishments that the BIO-OA has achieved:

Voicepipe Newsletter

Under the lead of a series of editors, this well-illustrated newsletter is produced approximately four times a year and distributed to all members either electronically or in hard copy. Copies are also made available to the BIO community-at-large in the Library and Cafeteria. Articles are contributed by members and cover a wide range of topics including announcements, various reports, BIO history, book reviews, obituaries, tributes, stories and travel accounts. A total of 91 issues have been produced to date.

Website

A website (bio-oa.ca) has been created and is managed by a webmaster. This site contains a wealth of information on the BIO-OA and its many activities. Included are upcoming events, all the past newsletters and the numerous publications produced by the BIO-OA. In addition, an active BIO-OA Facebook Group has been created.



Roger Bélanger, the first recipient of the Beluga Award.

Beluga Award

This award, established in 1991, is given annually to recognize BIO employees in any professional or technical field from any department who have made exceptional contributions to the success of BIO programs which ex-

emplify unselfish support of the teamwork approach of BIO. All present and past BIO employees in any field or specialization are eligible. BIO staff are invited to submit nominations which are adjudicated by an independent Selection Committee. The award, a pewter sculpture of a beluga whale mounted on a base of black granite, is presented each May at a ceremony in the Ford Auditorium. Twenty Awards have been presented to date.

Crystal Awards

These one-time awards were created and presented in 2012 to commemorate outstanding and innovative accomplishments made by teams of scientific and technical staff during the first 50 years of BIO.

Fossil Garden

The Bernard Pelletier Arctic Fossil Forest was established in 2018. Located in the inner courtyard of BIO, species of trees that once grew in the Canadian Arctic at earlier times have been planted and dedicated to prominent BIO scientists. Bernard Pelletier, a geologist, was one of the original group of scientists who founded BIO and who later became a pioneer in Arctic scientific research.

Archives

In collaboration with BIO managers, the BIO-OA has collected numerous artifacts such as equipment developed at BIO, equipment developed under contract and some of the 'tools-of-the-trade' used in the past by BIO staff both ashore and in the field. An electronic equipment archives has been developed which includes photos and short descriptive notes about most of the entries. In addition, a presentation of physical oceanographic tools of the 20th century was created. The BIO-OA also organized and catalogued the extensive collection of black and white negatives and colour slides taken by the BIO Photoshop in the early days before the advent of digital cameras.

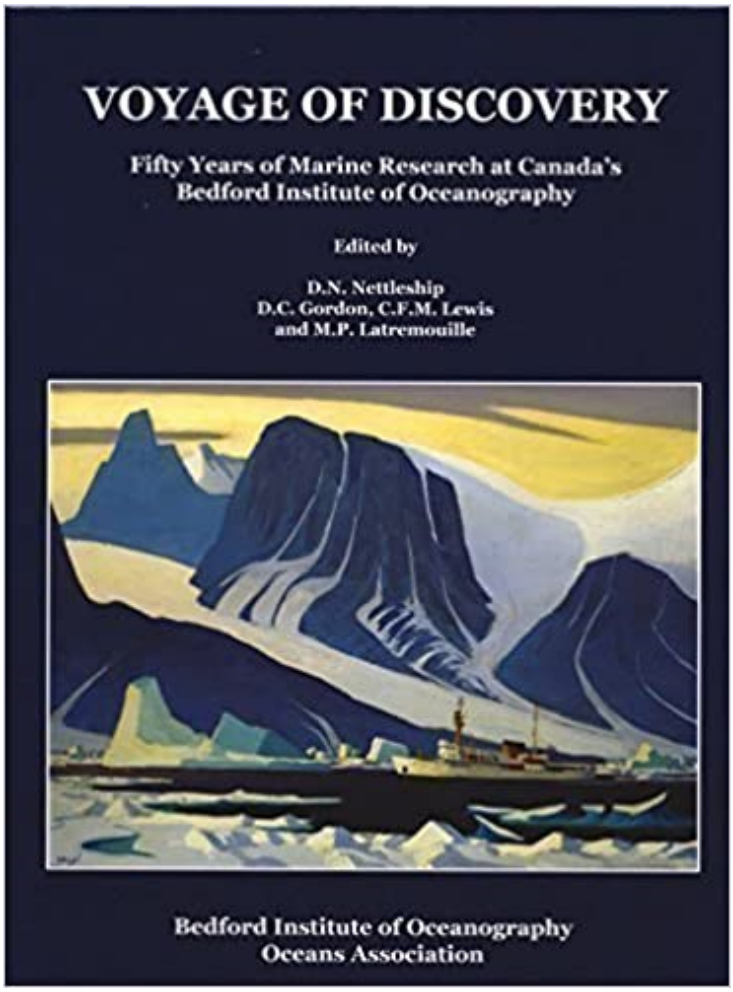
Publications

The major publication produced by the BIO-OA to date has been *Voyage of Discovery* which was developed over a four-year period to commemorate the 50th anniversary of BIO. It consists of 48 chapters which review historical background and the highlights of BIO research covering all oceanographic disciplines as well as an epilogue and numerous appendices. This hard copy, 460 page and extensively illustrated book was developed entirely in-house by a team of almost 100 authors, editors and technical staff. It was then printed by Friesens in Altona, MB and printing costs were more than covered by subsequent sales. Copies are still available at no charge at the BIO Library Information Desk. This huge initiative helped ensure the preservation of the BIO legacy and raised the international profile of BIO.

Additional publications include:

- A Chronology of the Bedford Institute of Oceanography (1962-2012)
- A History of the Marine Ecology Laboratory, Bedford Institute Oceanography (1965-1987)
- The Early Days of Oceanography at Dalhousie University (1959-1986)

These are posted on the BIO-OA website. In addition, the BIO-OA is currently engaged in compiling a history of the CSS/CCGS *Hudson*.



Displays

Over the years, the BIO-OA has prepared numerous ex-

hibits which have been displayed around BIO. These have included artifacts, PowerPoint presentations and the Crystal Awards. The BIO-OA has also actively participated in BIO Open Houses and successfully advocated for the restoration of the CSS *Acadia* which is on display at the Maritime Museum of the Atlantic.

Lectures

The BIO-OA has also organized a large number of lectures at BIO for both staff and the public which have covered a wide range of marine topics. Members have also contributed to the various regular BIO seminar series.

Special Events

In addition, the BIO-OA has organized numerous events at BIO to commemorate special occasions. Examples include the fortieth anniversary in 2009 of the departure of *Hudson* on the Hudson 70 expedition and the book launching for *Voyage of Discovery* in 2014. The BIO-OA also assisted the Coast Guard in planning the *Hudson* decommissioning ceremony in 2022.

The band at the BIO-OA 20th Anniversary Reception at Brightwood Golf Club.

Social Events

The numerous social events over the years have included annual picnics, field trips to interesting places around the province and receptions to commemorate noteworthy occasions. The BIO-OA had also contributed financially to the annual BIO Christmas party.

BIO Today

The BIO community has evolved significantly over the twenty-five years that the BIO-OA has been in existence. When it was founded in 1998, BIO was primarily a research organization and many of the programs were

BIO Christmas party 2018.

multidisciplinary in nature and involved different laboratories working together cooperatively. Also, fieldwork played a major role in many programs. Today, however, the balance has shifted with fewer than half of the staff involved in science programs while others look after the operational, regulatory, policy and administrative responsibilities of the federal departments of Fisheries and Oceans, Natural Resources Canada and Environment and Climate Change Canada.

BIO-OA at a Crossroads

In recent years, membership in the BIO-OA has started to gradually decline and it has become increasingly more difficult to find members to serve in leadership positions. Nevertheless, the dedicated Board and Officers have continued working together to keep the ball rolling but they are all getting older. For the BIO-OA to survive in the long term, it needs to recognize how BIO has changed in order to appeal to potential new and younger members, especially those who will be willing to replace the current 'elders' and take on leadership roles.

Conclusion

BIO has been a most successful experiment in the organization of federal marine science. We salute the vision of our founders and the efforts of the many volunteers over the past twenty-five years who have ensured that the BIO-OA has successfully fulfilled its mandate of preserving and celebrating the unique history and culture of BIO. Let us hope that it can continue to do so well into the future.

The CSS / CGCS *Hudson* enters Halifax Harbour for the last time under her own power.

The *Hudson* Project

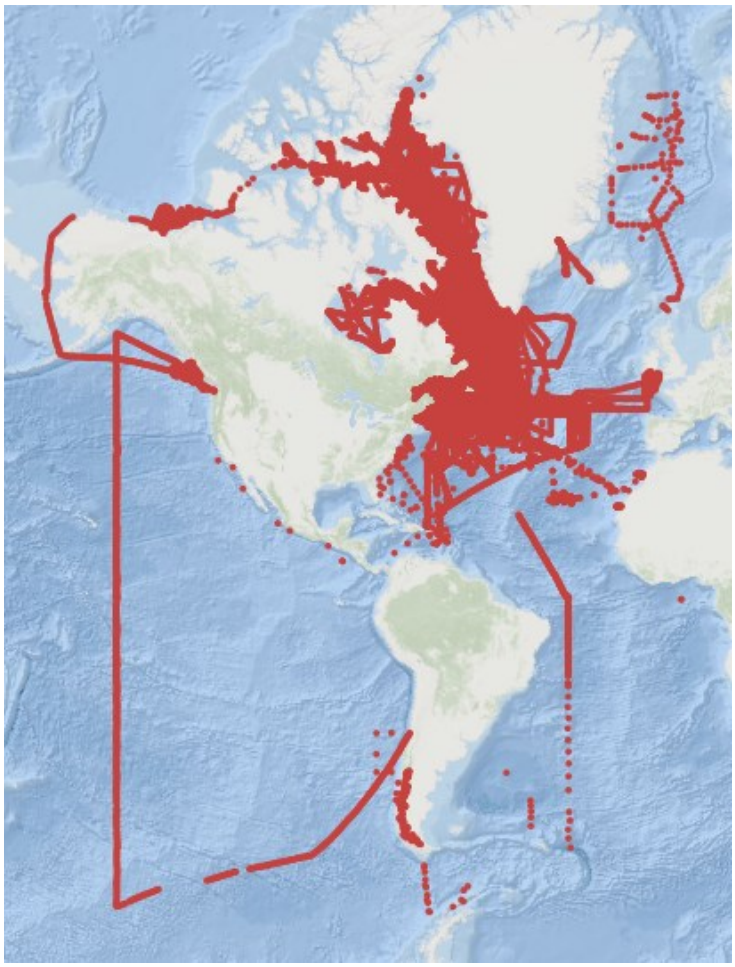
'A sneak peek'

Don Gordon has been busy compiling the history of CSS / CCGS *Hudson.* Two documents are in their final stages; the Table of All Cruises from 1964 (Cruise 0464 an hydrographic cruise on the Tail of the Bank) to 2021 (Cruise 2020077 to the Gulf of St. Lawrence and St. Lawrence Estuary) and the Ship's Log with highlights in *Hudson*'s long career for each year of service. These include such things as changes to the ship, refits, details of individual cruises including foreign ports visited, equipment used, mishaps, search and rescue operations as well as other key happenings. Don is now working on the Scientific Accomplishments.

Below are some excerpts from Don's Ship's Log.

1964

The first scientific assignment for *Hudson* was a hydrographic survey of the Tail of the Banks off Newfoundland in April and May (L. Murdock, CHS). This general charting survey extended previous Canadian Hydrographic Service (CHS) surveys in this area conducted by *Kapuskasking* in 1957 and *Baffin* in 1965. The two-range Decca Lambda system was used for navigation. On the way to Newfoundland a stop was made at Sable Island to offload equipment. Before the survey began, two slave stations were established along the Newfoundland coast using a helicopter. Heavy weather was encountered but the hydrographers found *Hudson* to be extremely seaworthy and comfortable. Unfortunately, as expected with



Plot of all available cruise tracks from 1964 to 2022. Prepared by Pierre Clement.

a new ship, quite a number of malfunctions developed in her equipment. As a result of these and adverse weather conditions it was not possible to complete all the intended survey lines. Nevertheless, the time at sea served as an excellent evaluation period during which many of her shortcomings came to light.

In June, *Hudson* sailed to Charlottetown, PEI with CSS *Acadia* to represent BIO at the annual meeting of the Royal Society of Canada and celebrations commemorating the 100th Anniversary of the Charlottetown Conference (Bernie Pelletier, MSB). Four scientific papers were presented to the Royal Society and the decorated vessel was open to visitors for three days. While in transit to and from Charlottetown, the first geophysical investigations on *Hudson* were carried out. These included sub-bottom profiling and gravity measurements. The results indicated the presence of a large negative gravity anomaly off Cape Breton Island.

1969

In mid November, *Hudson* departed on Hudson 70, the most ambitious oceanographic cruise ever mounted by Canada. Encircling both North and South America, it took 330 days and traversed 104,000 km in the Atlantic, Pacific and Arctic oceans. There were 128 participating scientists from five countries (Canada, US, UK, Argentina and Chile), most of whom were from BIO and Dalhousie University. Research programs were carried out in an extensive list of scientific disciplines including physical oceanography, chemical oceanography, biological oceanography, marine geology, geophysics, geodesy, hydrography and underwater acoustics. *Hudson* was ideally suited for such an ambitious venture. The cruise was divided into nine legs.

1970

On 16 October, *Hudson*, accompanied by *Baffin*, returned to BIO escorted by a fireboat and other watercraft while coming up the harbour. It was a most fitting welcome home after an absence of almost a year. A large crowd gathered on the jetty and welcoming speeches were made by Bill Ford and the Honourable Joseph Greene. The Honourable Joseph Greene also presented Captain David Butler with a commemorative plaque celebrating the successful completion of the expedition. All Hudson 70 participates were later presented with commemorative medallions.

2021

The [second] cruise was a return visit to the Scotian Shelf and Slope, Gulf of Maine and Georges Bank in support of the whale research and monitoring program (Hilary Moors-Murphy, OESD). The main purpose of this mission was to support ongoing passive acoustic monitoring (PAM) mooring efforts to record biological, ambient and anthropogenic sounds throughout the year. Secondary objectives included servicing a current meter mooring in support of Atlantic Zone Monitoring Program (AZMP), deploying two tag receiver moorings outside the Gully MPA and a linear array of 15 tag receiver and 3 range testing moorings spanning 15 km within and just outside the Gully MPA to track tagged juvenile Atlantic halibut as part of the Ocean Tracking Network (OTN), and conducting marine mammal and seabird surveys. In addition, drifting buoys equipped with PAM recorders were deployed to test the effectiveness of the buoy components and configuration, drift patterns and their capabilities for detecting endangered North Atlantic right whales. CTD casts were conducted at each station as time permitted. All objectives were successfully achieved. There were 222 sightings of whales, dolphins and porpoises including species at risk such as northern bottlenose, Sowerby's beaked, blue, fin and North Atlantic right whales.

2022

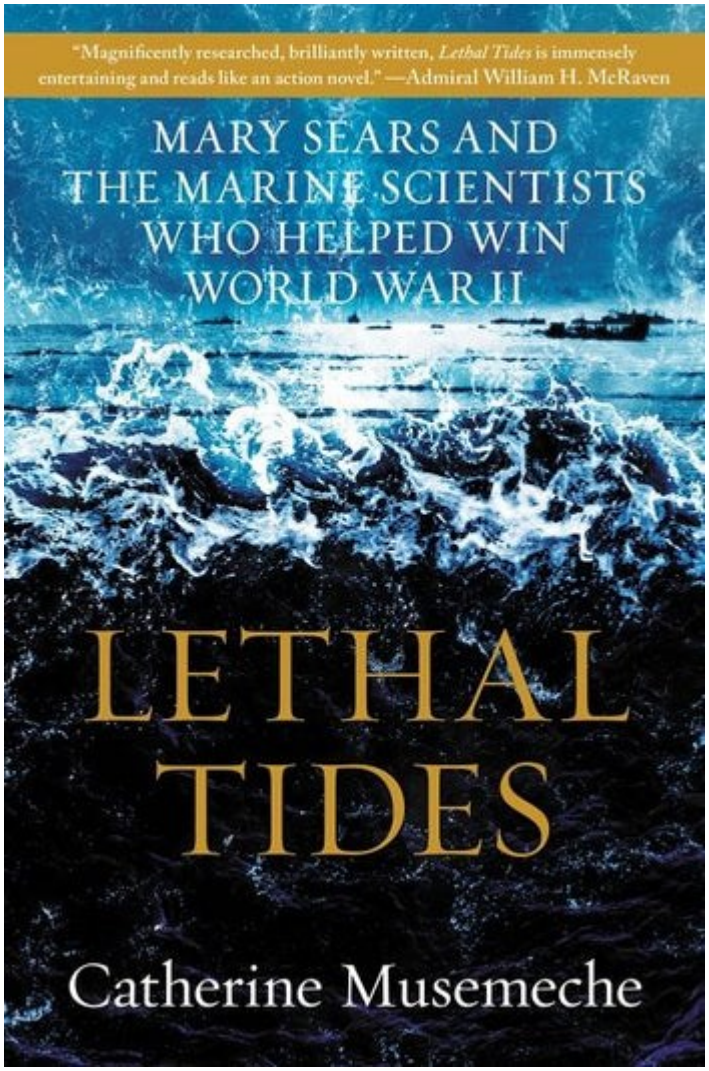
On January 19, the Coast Guard formally announced that the *Hudson* had reached the end its service and would be decommissioned. While not unexpected, this caused quite a shock to the oceanographic community. Shortly after, she steamed back to BIO and arrived 24 January. She was escorted up the harbour by another Coast Guard vessel while many watched her final arrival from shore with fond memories. This was the last time she tied up at BIO.

In May, Captain Fergus Francey organized a three-day open house on board *Hudson* for those wishing to walk the decks and alleyways one more time and say farewell to a faithful friend. This event was well attended and many fond memories and stories were rekindled and exchanged.

Book Review

by Don Gordon

Lethal Tides
Mary Sears and the Marine Scientists who helped win World War II
by Catherine Musemeche
(William Morrow, 2022)



This is a fascinating book about the marine scientists who helped win World War II with focus on Mary Sears. She was a student of Henry Bigelow and worked on zooplankton for her doctoral research. After completing her degree at Radcliffe, she was the first woman scientist hired at the Woods Hole Oceanographic Institution (WHOI) when it opened in 1930. Unfortunately at that time women were not allowed to go to sea on *Atlantis* so she was forced against her will to stay in the lab and work up plankton samples collected by her male colleagues. When the war broke, out she enlisted in the US Navy and was assigned to the Hydrographic Office where she built a team of marine scientists who made wave and tide predictions, analyzed currents, mapped ocean layers where submarines could hide and gathered information about amphibious landing conditions for in key Pacific Islands. This critical information played an important role in the series of subsequent victories by the US military and the feat of Japan. At the end of the war, she returned to WHOI to resume her research career and with time became a noted editor, in particular for the scientific journal *Deep Sea Research*. In recognition of her outstanding contributions to the war effort, in 2000 the US Navy named a new oceanographic survey ship after her. The book is well written and contains a lot of history in the early days of US oceanography as well many details of the amphibious landings on Pacific Islands. A copy is now available in the BIO Library.

My First Cruise on *Hudson*

by Don Gordon

I grew up on the banks of the Hudson River in upstate New York but never realized at that time that a ship, named after the same arctic explorer, would one day play such an important role in my life. My first ventures to sea were on *Atlantis* at the Woods Hole Oceanographic Institution and *Trident* at the Graduate School of Oceanography at the University of Rhode Island while pursuing my master's degree. At that time, I heard rumours that a major oceanographic laboratory had just opened in Nova Scotia and was about to receive a brand new research vessel but I paid them little attention since I had no intention to move to Nova Scotia. However, this changed rapidly a few years later when Gordon Riley announced that he was moving from the Bingham Oceanographic Laboratory at Yale University to Halifax to become the new director of the Dalhousie Institute of Oceanography and encouraged me to come along as his graduate student. This fortuitous move changed my life enormously.

When I arrive at Dalhousie in September 1965, the Institute of Oceanography had just completed its second cruise on the almost brand new *Hudson*. The scientific party had included four Dalhousie students who were the first women to sail on *Hudson* and one, Joleen Aldous, later became my bride. The following spring, I took my first cruise on *Hudson* along with two other Dalhousie oceanography graduate students, Roger Pocklington and Edward Batoosingh. Also joining us was Dick Brown, a PDF in the Psychology Department who came along to observe seabirds.

I shall never forget the first time I saw *Hudson*. She was tied up at the Halifax Dockyard and we drove down in the oceanography van to load our gear. We arrived in the midst of a heavy snow squall which momentarily hid her from our view. However, a few moments later the squall dissipated and low and behold there was a beautiful white yacht with varnished bright work and a graceful shear! I could not believe my eyes. It was indeed love at first sight. She was huge compared to the *Atlantis* and *Trident*. As soon as we reached the top of the gangway, several crewmembers appeared to help load and stow our gear. I was most impressed.

Hudson departed BIO in mid March with John Lazier as chief scientist. This cruise marked the beginning of the long-standing Labrador Sea program. The principle operation was to collect physical oceanographic data throughout the water column at stations along transects radiating out from Cape Farewell, the southern tip of Greenland. This was before the days of CTDs and such data were obtained by hydrocasts using Knudsen bottles fitted with reversing thermometers and fired with messengers.

Due to course requirements, Roger and I were not able to join the cruise until mid April when *Hudson* came into St. John's for a port call. At that time Capt. Jack Vieau left the ship and was replaced by Moran Wagner. It was a fine day when we streamed out the Narrows and headed out to sea. As usual, I was seasick the first day but quickly got my sea legs and before long we settled into our working routine. Roger and I needed to collect large volumes of seawater for our studies of dissolved and particulate organic matter using 30 L Niskin bottles. Fortunately we were able to add these to the standard hydrographic bottle casts being carried out by the BIO physical oceanographers so we did not require any additional wire time. All the bottle casts sampled the entire water column so stations could take up to three hours to complete. There was no room in the winch lab to store our Niskin bottles so we installed their racks in the forward lab one deck below and had to carry the full Niskin bottles down the stairs in a special carrier. After filtering and drawing samples, we carried out further processing of our samples aft in GP lab. The samples we collected formed an important part of our respective doctoral theses.

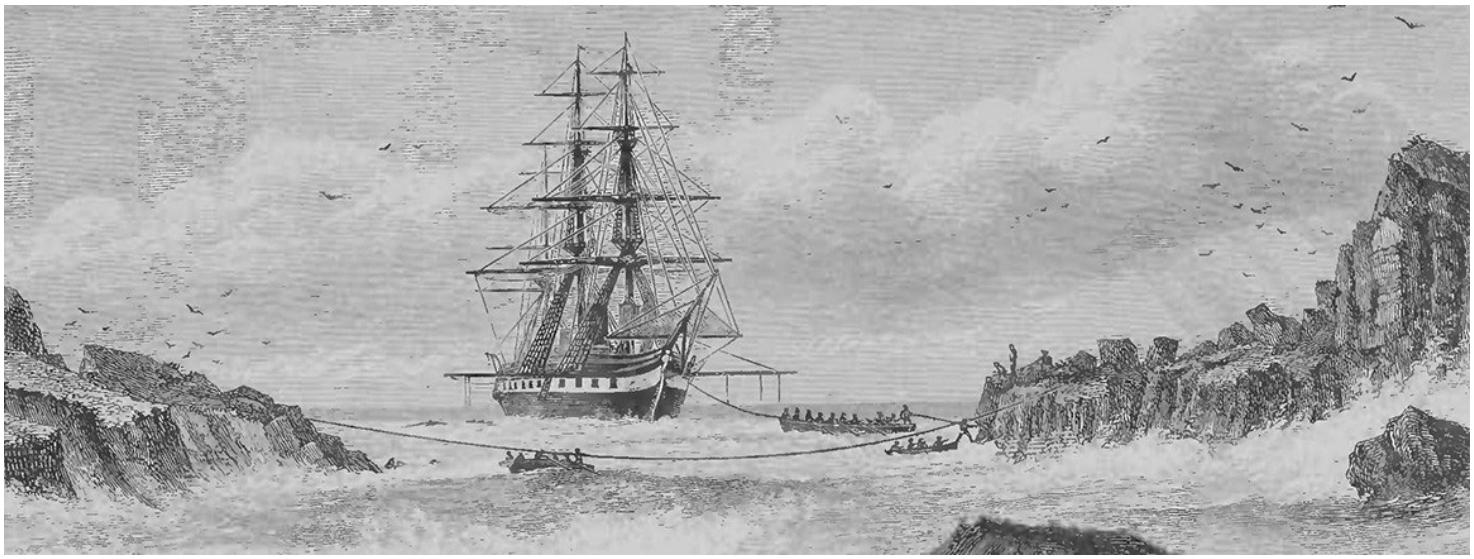
We had heavy weather for most of the cruise with frequent storms and high seas. The ship was dependent on celestial navigation and with mainly overcast skies the sextant fixes were infrequent. I was very impressed with the stability of *Hudson* in the rough conditions we experienced and her ability to carry out deep bottle casts in winds up to 60 knots with her stern into the wind. Having the chains 10 m above sea level improved the safety of hanging and removing bottles on the hydrowire.

Life on board was most pleasant, especially for graduate students like us. The accommodations were most comfortable and cabins were serviced daily by a steward. The food was excellent with several choices on the menu. Coffee and tea were served three times a day in the ship's library and the night lunch often featured lobster sandwiches. The officer's lounge below the bridge was a popular place to relax, play cards and enjoy the duty free liquor. On some evenings, movies were shown in the hanger. However, I was somewhat surprised by the degree of formality on board. There was a clear separation between the officers and the crew which carried over to the scientific staff. We were required to wear jackets and ties for meals and discouraged from fraternizing with the crew. This was in stark contrast to the much more informal conditions I had experienced on the smaller *Atlantis* and *Trident* where officers, crew and scientists all worked and ate together.

Overall, my first cruise on *Hudson* was a marvellous experience for a graduate student. I was most impressed with her capabilities and realized that she was indeed a superb world-class oceanographic research vessel with many important scientific contributions to come on future cruises. She was indeed a feather in the cap of BIO and Canada. Little did I know at the time that Roger and I would later become BIO research scientists and serve as chief scientist on numerous future *Hudson* cruises.

NSIS REPORT

The Nova Scotia Institute of Science (NSIS) has had another successful year of talks. The website has been renewed. (https://nsis1862.ca) The AGM and annual dinner are coming up soon, 29 May 2023, at Saint Mary's University. The PROCEEDINGS, PNSIS, volume 53, part one, is well underway, with a wide range of articles. All proceedings are on the website and open access. Members of the BIO Oceans Association are encouraged to join the society and attend the next year of talks, location to be announced, and to contribute articles for the Proceedings.



The Challenger at St. Paul's rocks (image is in the public domain)

May marks the 150th Anniversary of the visit of the HMS *Challenger* to Halifax

The Challenger expedition, the first worldwide oceanographic expedition, voyaged 127,663 km in the Atlantic, Southern, Indian and Pacific oceans between December 1872 and May 1876. The voyage of HMS *Challenger*, a 69 m corvette specially modified for research in oceanography, was intended to investigate the distribution of animals in the deep sea (particularly representatives of ancient groups) and to solve the problem of how the oceans circulate.

The voyage was organized by Charles Wyville Thomson and W.B. Carpenter with the financial support of the British government and the patronage of the Royal Society. The scientific work of *Challenger* was directed by Thomson aided by a small staff, notably John Murray, a Scot born in Cobourg, Ontario, who later completed the 50-volume report of the expedition. *Challenger*'s captain was George S. Nares, later famed for arctic exploration.

The Challenger expedition provided large amounts of new information about the oceans. Hundreds of previously unknown animal species were described. But although animals were found at the greatest depths sampled (5500 m), showing that the oceans were inhabited at all depths, there were no "living fossils," as Wyville Thomson had expected.

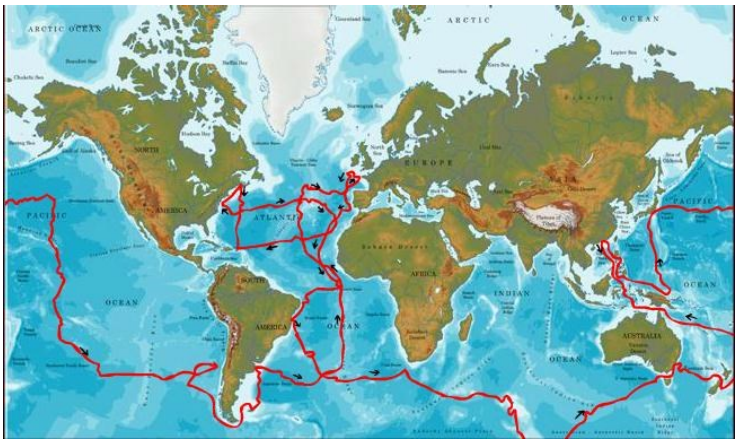
Carpenter's hope that the mechanism by which the oceans circulated could be discovered was not realized, although abundant information on the temperature, salinity and specific gravity of seawater was collected during the 3½-year cruise.

The composition of seawater was well established by William Dittmar of Glasgow University; and Murray and Alphonse Renard mapped ocean sediments, which proved to be quite different from terrestrial ones. The lengthy reports of the expedition contain information still useful to oceanographers.

Challenger visited Halifax for 10 days in May 1873 before leaving for Africa and South America. Its visit was celebrated by the Nova Scotian Institute of Science and aroused a brief interest in deep-sea animals, particularly on the part of the institute's secretary, Provincial Geologist David Honeyman. A small collection of animals from the voyage is found in the Nova Scotia Museum of Natural History, and some original volumes of the results are in Dalhousie University Library.

The Challenger expedition's effect on Canadian science was short-lived, but the voyage stimulated worldwide explorations by many western European nations later in the century.

Author: Eric Mills in the Canadian Encyclopedia



Map published in the *Bernews* 29 March 2013

Editor's Keyboard returns

We are sort of returning to normal, the newspaper today (14 April) reported that there were no Covid-19 deaths that week. We are celebrating the Association's 25th anniversary and to mark this Jennifer Mudge suggested we put all the past newsletters up on the website. So the hardcopies have been scanned and our webmistress Jazmine Hayden will put them up on the website. The image below is from Issue 1 asking members to share their hobbies. This is still a great idea so send me an article for a future newsletter on how you spend your free time. Please don't call Gordon Bowdridge! Of course thank you goes to Don Gordon for his contributions to this issue. *Andy Sherin,* Interim Editor

HOBBIES

BIO-OA Newsletter Issue 1

Interested in getting together to share and exchange information and ideas about your hobbies: gardening; woodworking; painting; tole painting; decorating; collecting model building/ship; wine/beer making etc. etc? Please call Gordon Bowdridge at 865-7530. Let's get organized and explore our untapped/hidden talents!

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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