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FISHERIES RESEARCH BOARD OF CANADA

Pacific Oceanographic Group
Nanaimo, B. C.

Cruise Report

Inspection Trip to Daily Seawater Observations Lightstations
August 8 to 18, 1963

(File N6-4(1), August 28, 1963)

To: Dr. J.P. Tully, Oceanographer in Charge
From: Mr. H.J. Hollister, Technician

Purpose: To visit the lightstations to inspect the water sampling equipment, and to discuss the details of the observational program with the lightkeeper-observers.

Personnel: H.J. Hollister

Ship: C.S.S. "Ehkoli", Mr. Vic Dale-Johnson, Master

Summary of log (P.D.T.):

Thursday, August 8

- 1100 Arrived alongside C.S.S. "Ehkoli" at the Canadian Hydrographic Survey wharf. Captain Vic Dale-Johnson said that the steamship inspector had approved the trips to Langara Island and the West Coast, with certain route restrictions. The crew were busy replacing an anchor cable that was lost yesterday. The Captain later informed me that he had been instructed to proceed to Vancouver to pick up a new anchor cable.
- 1305 Slipped wharf and proceeded to Juan de Fuca Strait; light westerly wind, rippled sea, sunny.
- 1425 Arrived off RACE ROCKS light; low water slack. Went ashore in 14-foot Davidson lifeboat powered by 10 h.p. outboard, with mate, Mr. "Red" Russell, and bos'n, Mr. Joe Clark. Met assistant lightkeeper, Mr. Kurt Cehak and Mrs. Cehak and 12-year son Kurt, Jr. Mr. Bruce Rogers, the principal lightkeeper, was absent on annual leave. Mr. Cehak has been a temporary observer for us on past occasions. They use the regular three-foot sampling rod; has two thermometers, both checked O.K. I instructed him to change the water sampling time to the time of turning to ebb (H.W. slack) as listed for Juan de Fuca Strait entrance.
- 1530 Returned to the ship; tide beginning to flood, causing strong eddies. Proceeded east to Discovery Island, through Haro Strait to Boundary Passage.
- 2000 Off EAST POINT light; calm seas, fine, warm evening; no fishing boats in sight. Went ashore and met the assistant, Mr. Peter Fletcher, and Mrs. June Fletcher, who is the observer. They have two children, Denny - 3 years, and Sharon - $1\frac{1}{2}$ years; have a tame crow, but no more budgies. Uses a sampling rod extended by a 7-foot sapling. Has two thermometers, both checked O.K. They have noted that the frequency

of whale and porpoise sightings has dropped considerably in the month of July. They use Fulford Harbour tide tables for observation times. Chatted briefly with Mr. and Mrs. P.H. Quinney, principal lightkeeper.

2100 Returned to ship and proceeded north to Strait of Georgia.

Friday, August 9

0230 Berthed at Immigration wharf, Vancouver

0830 Ship's crew installed new anchor cable

1100 Slipped Immigration wharf for Strait of Georgia; wind, SW, fresh breeze

1430 Arrived off ENTRANCE ISLAND light. Went ashore with the Captain. Met Mr. Harold Whalen, principal lightkeeper, and his wife, Jean. He has two 16-foot aluminum sampling rods, 1 1/4" O.D, 1" I.D., both equipped with thermometer inserts. Mr. Whalen was busy packing, as they will be transferred to Active Pass station, on Mayne Island, about September 15. His assistant, Mr. Don de Roussie, is to be transferred to McInnes Island. Mr. Emrich, from Pine Island, will be the new lightkeeper and D.S.W. observer.

1600 Returned to ship and proceeded north; wind, NNW, fresh breeze, overcast

2200 Off Comox; beautiful evening, calm sea.

Saturday, August 10

0700 Proceeding through Johnstone Strait; weather, calm, low mist, cool.

0900 Passing Alert Bay; fog has increased to visibility $\frac{1}{2}$ mile. Pulteney Point fog horn blowing.

1145 Put in to Port Hardy to pick up mail for lightkeeper at Pine Island.

1200 Slipped wharf and proceeded to Queen Charlotte Strait. Dense fog bank just outside Port Hardy, but soon sailed into clear, sunny weather; sea - calm.

1430 Swells had increased considerably. Put the small boat overside and proceeded ashore to PINE ISLAND, accompanied by the Captain. Landing in the cove was not too difficult. Met Mr. and Mrs. Pen Brown, senior lightkeeper, and children, Marion (5) and Rex (3). Water sampling equipment consists of 16-foot aluminum pole with bottle clips attached; I.D. 1", O.D. 1 5/16". Two thermometers checked O.K. A new radio beacon tower has been erected. The Brown's have a wonderful vegetable garden which keeps them well supplied. Also met Mr. and Mrs. Ralph Emrich, the assistant lightkeeper, who will be transferred to Entrance Island as the senior lightkeeper. They have a son Pat, 12 years, who is in the sixth grade.

1600 Returned to the ship and proceeded across Queen Charlotte Sound and into Fitz Hugh Sound. Moderate swell, cool weather.

Sunday, August 11

0700 Entering Tolmie Channel. Proceeded to Graham Reach; weather - sunny, calm.

0930 Secured at Butedale wharf to take on water.

1030 Departed Butedale, proceeded through Princess Royal Channel.

1215 Entering Grenville Channel; wind NW-10.

1700 Proceeding through northern end of Grenville Channel, opposite Kxngael Inlet; brown water, probably from Skeena River. Wind is NW-15; clear sky, cool.

2000 Entering Malacca Passage. The Captain decided to proceed directly to Langara Island instead of to Prince Rupert, as he had just received a message from the "Wm. J. Stewart", anchored in Egira

Bay, that the weather was flat calm and showed no signs of changing. Numerous gillnetters fishing in Chatham Sound. Proceeded across Hecate Strait to Rose Spit and through Dixon Entrance.

Monday, August 12

- 0730 Dropped anchor in Egira Bay; "Wm. J. Stewart" nearby. Fog, vis. 300 yds., westerly wind - 10, sea - choppy. Chief engineer reports some engine trouble requiring several hours to repair.
- 0900 Visited Captain Howie Matheson on "Stewart". Weather report is for fog to clear.
- 1145 Departed in small boat for LANGARA ISLAND light, accompanied by Captain Dale-Johnson and 2 crew members.
- 1230 Arrived at lighthouse landing cove. Met Mr. Robert Smith, assistant lightkeeper, and interim daily seawater observer, since July 16. A tide gauge is being installed by hydrographers from the "Stewart". Checked the three water temperature thermometers, all O.K. Observations are taken with a bucket on a rope. Drove over the plank road in the station jeep to the lightstation. Met Mrs. Dorothy Smith. Helicopter will be calling tomorrow to pick up a radio technician who has been repairing equipment. The helicopter calls once a month with supplies.
- 1430 Departed Langara Island and returned to ship. Weather - sunny; sea - calm; porpoises playing around the small boat. A tide gauge will be installed in the bay opposite Langara Rocks.
- 1830 "Ehkoli" secured alongside "Stewart" to see movie, Bing Crosby and Grace Kelly in "Country Girl"!!
- 2230 Departed for westward trip through Dixon Entrance; clear night, light seas.

Tuesday, August 13

- 0630 Crossing northern Hecate Strait; light sea, overcast, heavy clouds, thunder and lightning to the south.
- 0745 Ship stopped off TRIPLE ISLAND lightstation; raining, calm sea. Went ashore and met Mr. Doug Franklin, lightkeeper and D.S.W. observer. He was staying on 2 weeks longer than usual so that the alternate lightkeeper, Mr. L.M. Clifford, could take his leave. Mrs. Marjorie Franklin and 3 daughters had been visiting since Thursday, but were hoping the helicopter would come today to take them back to Prince Rupert. Has three thermometers, all old 5° ones, which checked perfectly. He uses a bucket for sampling.
- 0900 Returned to ship and proceeded to Prince Rupert for fuel. Raining heavily.
- 1130 Secured wharf Prince Rupert; raining heavily; the roof leaks!!
- 1300 Visited Captain Ormsby, District Marine Agent. We discussed the possibility of getting a ride with the helicopter to Cape St. James or Bonilla or McInnes. He was quite willing but on checking with the Stores department, it was determined that these trips were loaded to capacity. We agreed that I should send a request early in April next year for a scheduled trip to the 5 northern agency stations via helicopter. Captain Ormsby said it could be arranged that the meteorological inspector, the radio branch inspector, and myself could make a combined trip. Also met Mr. Ed Harris, superintendent of lights.

Wednesday, August 14

- 0500 Slipped wharf at Prince Rupert and proceeded south through Arthur Passage and Ogden Channel; light rain, calm sea.
- 1100 Passing north end of Banks Island entering Hecate Strait; southerly wind-force 1, light chop, partly cloudy, cool.
- 1145 Anchored off BONILLA ISLAND lightstation; went ashore with Captain; sea - choppy. Met Mr. and Mrs. Henry MacArthur, the senior lightkeeper and D.S.W. observer, Mr. Gordon Cantwell, assistant, and Mr. and Mrs. Fred Pratt, assistant. Uses a 16-foot aluminum sampling rod, 1" I.D., has 2 rod-insert thermometers and one side-clip thermometer - all checked O.K. There is a Decca range station crew camped nearby the lightstation buildings. They are associated with oil exploration seismic studies. Helicopter landed on the beach to service the Decca station. The D.O.T. helicopter visits Bonilla quite frequently, almost every 2 weeks. Radio beacon is operating and probably there will be hourly aviation synoptic meteorological observations, commencing next year. At present, there are daily precipitation observations and general weather reports of wind, cloudiness and sea state. Mr. MacArthur said that there has been very little rainfall in the past two months, June-July, and that the ground is quite dry. Mr. and Mrs. Pratt will be moving to Lucy Island light next month, as senior lightkeeper.
- 1400 Returned to the ship and proceeded to Banks Island and then through Browning Passage to Principe Channel.
- 1800 Dropped anchor in Colbey Inlet to pass time so that arrival off McInnes Island will not be too early. Lots of no-see-ums!!
- 2100 Up anchor and proceeded south through Principe Channel to Caamano Sound; clear night, light breeze. Large number of gillnetters in the Channel.

Thursday, August 15

- 0700 Proceeding through Campania Sound; partly cloudy, light wind, sea rippled.
- 0845 Anchored behind MCINNES ISLAND lightstation. Went ashore and met Mr. and Mrs. Ralph Cook, senior lightkeeper. Mr. Eric Brown, assistant lightkeeper and D.S.W. observer, was on leave. He returns at the end of August and will be transferred to Egg Island. Mr. Alex Thomson, second assistant, will be transferred to Carmanah light. His son, Charles, 16 years, is presently taking the observations. They use a 16-foot aluminum rod, but do not like it as well as a wooden rod, which they can throw out into the water a distance from the rocks. Checked 3 rod-insert thermometers - all O.K. Mr. Bob Smith, assistant at Langara, will be transferring to McInnes. Mr. Cook will advise us who he has assigned to the water sampling duties when Brown leaves. Mr. Christiansen, meteorological inspector, had left yesterday on the helicopter. Meteorological observations - measured hourly wind speed and direction, rainfall, air temperature - are observed every 3 hours, and a synoptic report is broadcast 4 times daily. Mr. Cook confirmed that winds from the N and E quadrants are not fully recorded on the anemometer because of sheltering trees. Flower garden looks very pretty - a neat station.
- 1015 Returned to ship, up anchor and proceeded SSE across Queen Charlotte Sound to Cape Scott; weather cloudy, light E wind, sea - choppy.

2100 Passing Cape Scott; fine weather, slight sea and swell.

Friday, August 16

0100 Dropped anchor behind KAINS ISLAND

0900 Went ashore to visit the lightstation; sunny weather, calm sea, fog patches drifting in. Met Mr. and Mrs. R. (Bob) H.W. Collins, daughter Raye (18) and son Terry (16). Captain Dale-Johnson visited Mr. and Mrs. Ed Kidder, the assistant. Mrs. Kidder (Pat) is Mr. and Mrs. Harold Whalen's daughter. They have a 2-year-old baby boy. Mr. Collins uses the 16-foot aluminum sampling pole; checked two thermometers - O.K.; has one replacement unmounted. Mr. and Mrs. Collins and their children are one of the most charming families I have ever met, and time passes so quickly when visiting them. Consumed three scrumptuous blueberry muffins hot from the oven.

1130 Returned to the ship. Up anchor and proceeded northward to Cape Scott; weather - sunny; sea - calm. Numerous trollers in sight; reports are that fishing is very good. Captain reported he saw numerous schools of salmon during last night's trip.

1545 Passing Cape Scott lightstation; sea - calm, sunny weather, large concentrations of sea birds. Proceeding south through Goletas Channel and Broughton Strait.

Saturday, August 17

~~0700~~ 0700 Passing Rock Bay and proceeding south through Discovery Passage; weather cloudy and cool, light NW wind, sea - choppy.

0900 Passing through Seymour Narrows (Ripple Rock).

1045 Anchored in bay just north of Cape Mudge.

1200 Went ashore to CAPE MUDGE lightstation. Scrambled over large boulders covered with seaweed, low tide, water flowing fast. Met Mr. and Mrs. Charles W.A. Egg, assistant lightkeeper and D.S.W. observer. He wades out over the boulders to take the water sample, using a regular wooden rod assembly. Checked two thermometers - O.K. He notices that when the sampling time is changed from afternoon to morning, there is always a considerable drop in water temperature. He thinks that the afternoon water is warmed up by coming in over the warmed boulders. These are granite boulders and do retain the heat, but I feel that the rapid circulation of the water should sweep away any instantly warmed peripheral water. He takes the samples at some distance from the shore, so that portion of the incoming tide should be well mixed. This PM to AM cyclic change might be connected with the difference between a large maximum flood speed in the PM, compared with a relatively small maximum flood speed in the AM. Also could be related to change in the height of the water on the shore; it is generally higher in the PM than in the early AM. Mr. Egg changes from PM at 1600 to AM at 0400 because he goes to bed at 1600 to rest for the night shift. He is a conscientious and able observer. Met Mr. and Mrs. Art Swanson, senior lightkeeper. They have a very productive vegetable garden at Cape Mudge, fertilized with lots of seaweed, but the ground is very dry and sandy.

1330 Returned to ship, which had dragged the anchor and was cruising offshore, fighting $11\frac{1}{2}$ -knot flood tide. Proceeded south to Comox; weather - sunny; light westerly, sea - calm.

1700 Secured Comox wharf.

Sunday, August 18

- 0800 Slipped wharf and proceeded south through Baynes Sound to Chrome Island; weather - cloudy and cool, sea - rippled.
- 0945 Arrived off CHROME ISLAND lightstation; raining hard. Went ashore and visited Mr. and Mrs. Jim Bruton, senior lightkeeper. Mrs. (Evelyn) Bruton is the official D.S.W. observer. They use a 3-foot wooden rod which is cast out over the rocky ledge, but Mr. Bruton is going to cut down a 16-foot sampling pole to a shorter pole and use it in the same manner for sampling. Three thermometers checked - O.K. Water sample cases are sent to Bowser Builder's Supply and picked up there. They have 4 children, 1 boy, 3 girls, 12-6 years.
- 1100 Returned to ship and proceeded south through Strait of Georgia; weather - sunny, sea - light chop, SE breeze.
- 1600 Secured Immigration wharf, Nanaimo. Hollister disembarked with gear. Ship stayed overnight, proceeding to Victoria the next day.

Liaison

The co-operation and assistance received from Captain Dale-Johnson, his officers, and crew was excellent. Their willingness to work long hours made it possible to complete successfully a rather tight schedule. Small boat landings were effectively handled by the bos'n and crew members.

Results

The trip was quite successful. We travelled 1300 miles in 10 days, and visited 11 of the 12 stations on the original schedule. Cape St. James was missed because there was not enough time to travel there. The water sampling equipment at all stations is in good order, and all thermometers were checked O.K. against a standard thermometer. All the observers seem to be reasonably satisfied with the work involved in taking the Daily Seawater Observations. There are numerous personnel changes being made at the lightstations, especially the northern agency, and this will probably create several changes in the list of D.S.W. observers.

The weather was excellent for the whole trip, and landings were made with ease. It was commented by numerous people in the northern coastal region that the past 3 months, June-July-August, have been exceptionally dry.

H. J. Hollister