

WHP Ref. No.: PR5/PR6
Last updated: February 18, 1993

CRUISE REPORT: PR5 and PR6
Repeat hydrography on Line P:

Chief Scientist: Ron Perkin
Ship: Endeavour
Ports of Call: Esquimalt, B.C., Canada
Cruise Dates: March 26 to April 13, 1992
Expedition Designation: 18EN9202/1

Cruise Narrative

The Canadian Naval Auxiliary Vessel ENDEAVOUR left Esquimalt on March 26, 1992 in the midst of a long period of mild spring weather with six IOS scientific personnel and one researcher from UBC. Fig. 1 gives the station locations.

The program of planned measurements is shown in Table 1 and included sampling of pCO₂, TCO₂, alkalinity, 13C and oxygen isotopes in addition to the WOCE repeat hydrography: CTD's and bottle casts for temperature, salinity, nutrient and oxygen analyses. Plankton net trawls, productivity studies and surface water samples were undertaken as part of IOS's Climate Chemistry projects overseen by Mr. Jinping Wu. Servicing and redeployment of sediment trap moorings were scheduled for Station P and the Alaska Gyre station at 550 N and 1450 W and a free-drifting sediment trap was planned for Station P. Additional data down line R (500 55.7' N, 1430 01' W to 510 23.5' N, 1330 49.6' W) and along connecting cruise tracks was to be undertaken as time permitted.

The first night out saw winds to 40 knots so that Stations P01 and P02 could not be occupied safely. However, the morning of the 27th was good enough and data collection started at Station P03, continuing to P14 where once again strong winds and high seas prevented over-the-side operations. Data collection continued from Stn. 15 to Station P where a full depth cast with a full suite of chemical samples was obtained using 10 litre Niskin bottles. A drifting productivity experiment was deployed and the free drifting sediment trap was put out. Attempts to interrogate the sediment trap mooring at Stn. P were unsuccessful so the release signal was sent and a surface search was done, again without success.

The ship proceeded north toward Stn. AG but analysis of the problems with the Stn. P mooring showed that the battery voltage in the deck unit was too low for reliable operation. The ship was therefore turned around and another attempt to recover was made in the morning of April 3. After many attempts, the deck unit successfully actuated the release and the mooring was recovered around 1900 Z. Although only one bottle of sediments was collected, the sediment trap was successfully retrieved and prepared for deployment.

Data collection along the line to Stn. AG was completed. The AG mooring was recovered and the instruments and release from Stn. P were moored in its place. The ship then returned to Stn. P, completed another bottle cast and deployed a sediment trap mooring using components from Stn. AG and some additional sediment traps to complete the array.

The cruise continued down Line R and approached the southern tip of the Queen Charlotte Islands along line J.

On the return trip to Esquimalt, Stations P01 and P02 were picked up and the ship docked at 0900 hrs on April 13, 1992.

Cruise Summary Information

Cruise Track

Three straight sections were completed. Line P, from the mouth of the Straits of Juan de Fuca on the Canadian West Coast (48° 34.5' N, 125° 30' W) to Station P (50° N, 145° W). from Station P to Station AG (to 55° N along 145° W). Lines R and J, from Station P to the southern tip of the Queen

Charlotte Islands(48o 34.5N, 125o 30 W).

Table of Stations by type

Sample type	No. stations		Max. depth (m)
CTD casts	67	1500	
Bottle casts	9		4200
Surface samples	68		surface
Sed. Trap Moorings	3, incl. 1 drifter		4200

Floats and Drifters deployed

- no long-term floats or drifters were deployed. 3-day duration drifting sediment traps(FDSTAR) and 12-hour duration primary productivity arrays were deployed and recovered.

Moorings deployed and recovered

- at Station AG, 1 sediment trap mooring was recovered and re-deployed.
- at Station P, 1 sediment trap mooring was recovered and re-deployed.

Participants & Affiliations:

The following table includes all personnel involved in this expedition.

Name	Responsibility	Affiliation,	Sciencenet
R.D. Bellegay	Moorings/sampling	IOS,	ios.bc
R.G. Perkin	CTD	IOS	ios.bc, perkin@ios.bc.ca
B.G. Minkley	T/S/O	IOS	
L.A.F. Spearing	Moorings/CTD casts	IOS	
T.J. Soutar	Electronics/mooring	IOS	
J. Wu	Nutrient analysis, 13C	DOUBC	
Reg Bigham	Moorings,hydrocasts	CTD IOS	

IOS: Institute of Ocean Sciences, 9860 West Saanich Road, Sidney, B.C.,
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