



RRS *Discovery*

Cruise 100

31 January – 4 April 1979

Master: Leg 1 Phil Warne, Leg 2 Phil Moran

Principal Scientist: James Crease



Image: Peter Rowan

Some recollections 40 years on

Acknowledgement

Material for this compilation has been provided by James Crease, Edward and Theresa Cooper (née Colvin), Howard Roe, Peter Rowan, Andy Adams, the National Oceanographic Library (with thanks to Emma Guest), Phil Pugh and the British Oceanographic Data Centre.

Edited by Gwyn Griffiths.

James Crease provided these brief recollections

"These notes contain a masterly account by Howard-. Thank goodness he has a good memory (and records?)

I do recall the pleasure we all had at seeing Arthur Fisher at the dockside in Cape Town waiting to greet us. There is an old navy term-ship's husband-which describes the person who stays ashore and make sure that everything the ship and its crew needed is to hand when one returns to port. That's Arthur.

The physical oceanography was a wash out! We launched and deployed deep current meters for a year's deployment but a planned recovery a year later from the South African research ship drew a blank! The weather was only surpassed in my experience when John Swallow and I and Woods Hole Oceanographic Institution colleagues were caught in a hurricane on the RV *Aries* returning to Bermuda (and that was only one day) in September 1959.

I have a recollection that station 10000 may have been very close to where Dr Deacon made his first hydro station circa 1927 in RRS *Discovery II*"



Image from Peter Rowan

Contents

Sailing Instructions, Second Notice, 23 November 1978.....	4
Sailing Instructions, Third Notice, 11 December 1978	5
Track chart from the IBM1800 Computer (Courtesy BODC).....	8
Cruise 100 - Reflections on Antarctica!	9
The lighter side of life at sea on Cruise 100	13
Furthest South.....	14
Birthday Celebrations: Sir George Deacon and Roger Chamberlain	15
The rougher side of life at sea on Cruise 100	18
What exactly was going on in the Engine Room during the stormy weather?.....	19
Empathy, and getting on with the job despite the weather: recollections of the only woman within thousands of miles.	21
Early Experience with Satellite-tracked Drifting Buoys	23
Buoys for Current Meter Moorings	24
Seagoing Stalwarts	25
Snapshots of some of the crew	26
An extract from Dr Rowan's Casebook and inside the Hospital	27
Sir George Deacon's Cap.....	28
Constants of Life at Sea: Boat Stations and Preparing Meals	29
Curiosities.....	30
RRS <i>Discovery</i> Ship's Log for Friday 23 March 1979 - Station 10000	31
RRS <i>Discovery</i> Scientific Log for Friday 23 March 1979 - Station 10000	33
James Crease's letter to Dr Anthony Laughton, Director IOS, at the end of leg 1	34
Arrival at Cape Town	36
Post Script.....	36

Sailing Instructions, Second Notice, 23 November 1978

Computer

RRS DISCOVERY CRUISE 100Second Notice

(31 January - 4 April, 1979)

Dates: The dates and final port of the cruise have changed and are now as follows:-

Leg 1 Depart Cape Town 31 January - Arrive Cape Town 3 March
Leg 2 Depart Cape Town 6 March - Arrive Cape Town 4 April.

Flights: Flights for all the members of the scientific party have been booked for 27 January on SA 231 dep. Heathrow 1915 arr. Cape Town 1005 28 January. This is a direct flight. These tickets have been booked on a 19-75 day excursion fare and the baggage allowance is 20 kg not the 30kg which we have become used to on seamen's tickets. Tickets will be issued in due course.

Steve Calvert's party from Cruise 99 will vacate their cabins on arrival in Cape Town so accommodation will be available on board when we arrive. It is expected that we will move into an hotel at the end of the cruise so that Cruise 101 personnel can use the cabins. Open dated air tickets have been bought for the return flight.

Loading equipment: At present it is hoped that all the boxes sent out by container ship will be stored in a warehouse until we require them when they will be delivered to the ship for unpacking. The empty cartons will be folded and stored for the return journey. While some of the packing for the return may be done on board much will have to be done on arrival in Cape Town.

Health requirements: Smallpox vaccination is a requirement. Immunisation against tetanus is a recommended precaution. In addition you should be immunised against yellow fever if you travel through any of the endemic areas of Africa after leaving the ship.

Passports: All personnel must carry a valid passport. Visas are not required for holders of U.K. passports.

Canteen: For those not familiar with the ship there is a canteen on board which sells such things as toothpaste, washing powder, sweets etc. Bar and canteen bills must be paid monthly which can be done by cheque.

Mail: Mail should be addressed

RRS Discovery
c/o Ellerman and Bucknall (Proprietary) Ltd.
Cape Town Centre,
Heerengracht,
Cape Town 8001,
South Africa.

J. Crease
I.O.S. Wormley
23rd November 1978

Circulation:

Standard distribution list +
Cruise participants.

Sailing Instructions, Third Notice, 11 December 1978

RRS DISCOVERY CRUISE 100

Third Notice

(31 January - 4 April, 1979)

This notice replaces the first notice and supplements the second.

Objectives

The purpose of the cruise is to carry out a closely integrated physical and biological programme in the 20° - 30° E sector south of S. Africa where it is possible that the Weddell Sea Drift turns towards the south. If this southerly movement exists it is important to know its extent and strength as this will help in understanding Southern Ocean dynamics and the distribution of animals, particularly krill, that are carried into the area from the west in the Weddell Drift.

Biological Programme

This will consist of deep oblique hauls with the RMT along a series of latitudinal transects (probably 3) between 20° and 30° E with more detailed opening/closing hauls where adult or larval krill are found. There will be two complete daytime vertical series with the RMT multi-net to the north and to the south of the Antarctic Convergence. Continuous flow fluorescence will be measured for comparison with krill distribution.

Physical Programme

Three CTD sections between 20° and 30° E south of the Antarctic Convergence along lines of latitude will be worked together with XBT's across the Convergence. Current meter moorings will be set in the first leg and recovered in the second leg at 56°, 59° and also one at 62° S. It is hoped to reset three of the moorings for recovery later in the year by another ship. There will be 4 meters on each mooring. 9 buoys will be set adrift for tracking by the NIMBUS satellite as part of the FGGE programme. 2 buoys will have IOS wave sensors on them. XBT's will be launched regularly on passage.

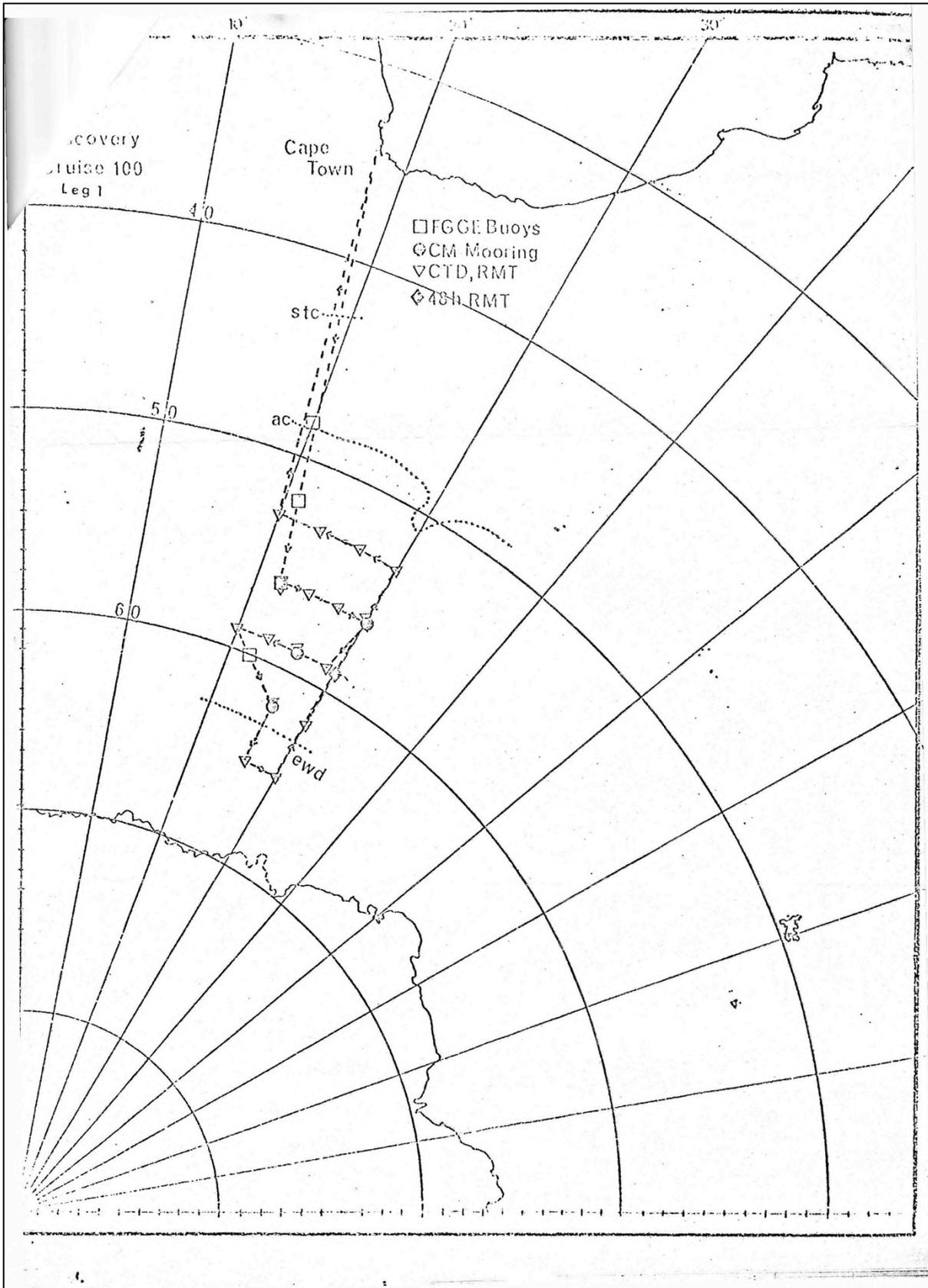
It is also intended to make a passage magnetometer survey for Department of Geophysics of Birmingham University if time permits.

Tracks

The proposed track for the first leg is shown on the accompanying sketch. It is likely that the second leg, while following the pattern of the first leg, will exploit specific regions highlighted by the work on the first leg.

<u>Personnel</u>		<u>Cabin</u>
A de C Baker	IOS	7
M. Beney	RVS (leg 2)	Pilot
J. Burnham	RVS (leg 1)	Pilot
J.W. Cherriman	IOS	6
Miss T. Colvin	RVS (leg 2)	8
J. Crease (Pri. Sci.)	IOS	PSO
A. Davies	MBA (leg 1)	8
G.E.R. Deacon	IOS	5
M.J. Harris	IOS	10
P.J. Herring	IOS	14
B. Heywood	BAS	11
C. Hunter	IOS	3
J. Moorey	IOS	9
P.R. Pugh	IOS	1
H.S.J. Roe	IOS	2
Dr Rowan	Doctor	12
D.M. Shale	IOS	3
J. Smithers	IOS	4
J. Warren	BAS	11
R.A. Wild	IOS	4

J. Crease
1st December, 1979.



RRS DISCOVERY CRUISE 100Narrative of proposed programme

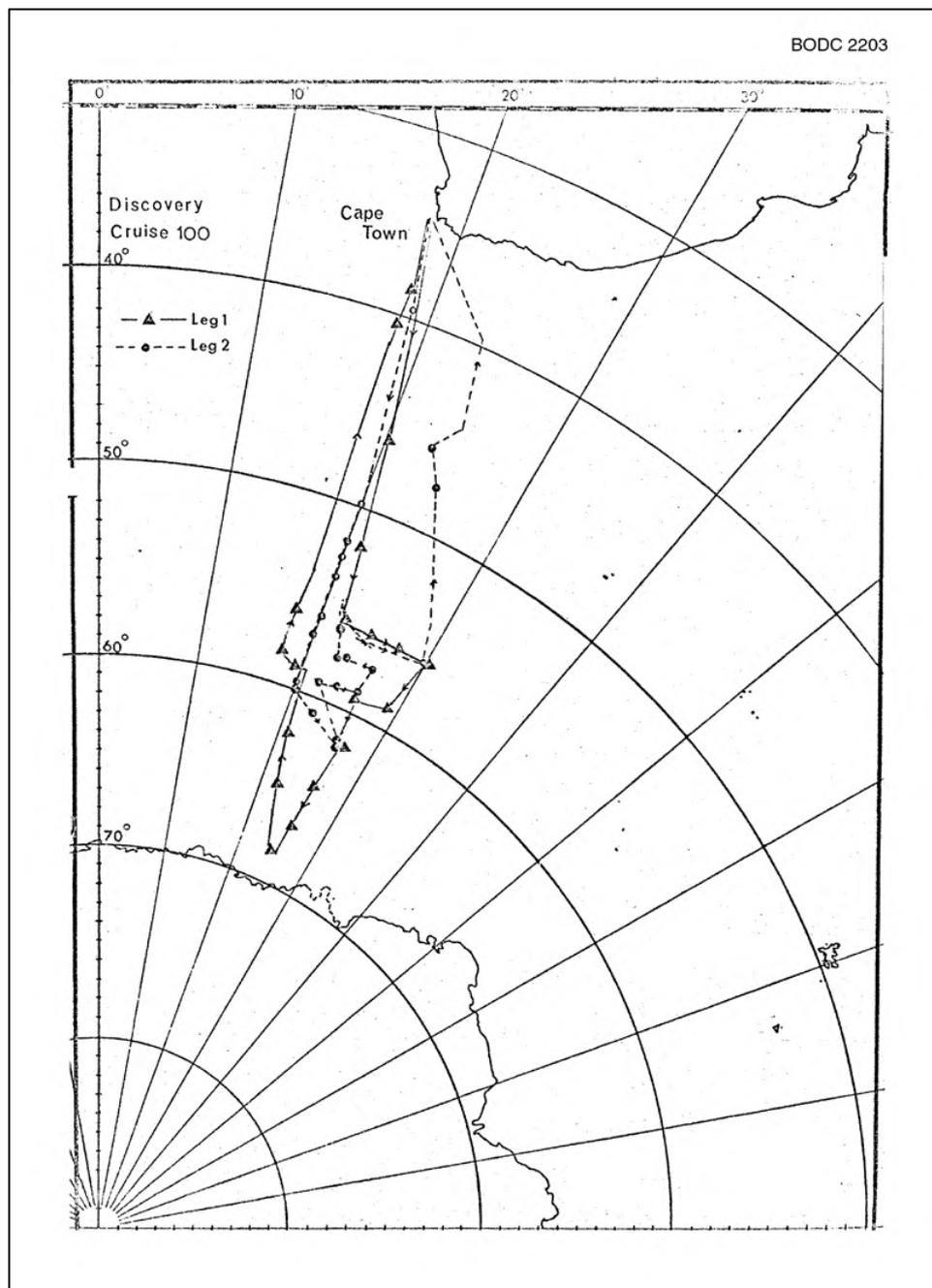
January 31	Passage to 48°S, 20°E (3 engines if weather and other conditions suitable) Passage work - XBT's on track, towed S/T profiler Magnetometer 1 50 l. sample for Davies North of Convergence Increased frequency of XBT's across A.C. P.E.S. On arrival lay 2 FGGE drifting buoys
February 4	Passage to 52°S, 21°E
February 5 p.m.	Lay 3 FGGE buoys Passage to 56°S, 22°E
February 6 p.m. 2400	Lay mooring - 50 l. sample for Davies Complete Start section along 56°S and lay 3 FGGE buoys 4 stations at 100 mls. spacing consisting of deep CTD. Oblique RMT to 2000 m. taking an estimated 8 hrs.
February 9 noon p.m.	Complete section at 56°S, 30°E Lay mooring Passage to 59°S, 29°E
February 10 noon	Start E to W section on 59°S Section has 4 stations as above plus one mooring. (30 hrs. passage, 32 hrs. station, 6 hrs. mooring)
February 13 noon	Complete section Passage to 62°S, 26°E dropping FGGE buoy at 60°S, 22°E.
February 14 p.m.	Lay mooring Passage to 65°S, 26°E
February 16 p.m.	Station Passage to 65°S, 30°E
February 17 a.m.	Station Passage to 59°S, 30°E with 2 stations on way.
February 19 p.m.	48 hrs. biological station
February 21	Complete station Passage to 53°S, 30°E

February 23 p.m. Commence section along 53°S of 4 stations
February 26 p.m. Complete section
March 3 Arrive Cape Town

Leg 2 will provisionally be on the same pattern but may be varied to suit conditions met on Leg 1. The moorings all have to be recovered. Some may be reset if we can find a ship to recover them a year or more later.

J. Crease
11 December, 1978.

Track chart from the IBM1800 Computer (Courtesy BODC)



Cruise 100 - Reflections on Antarctica!

Howard Roe, 21 March 2019

Cruise 100 was different! Biologists and physicists both jumped at the opportunity to work in the Southern Ocean- brought about by *Discovery* being en route to the Indian Ocean. Cape Town and icebergs beckoned, heroic tales of Antarctic exploration became local best sellers and we lucky participants kitted ourselves out in Millet's finest anoraks and long-johns. I recall my very fine yellow coat complete with furry hood that served me admirably on riverbanks for years to come! The cruise was planned to clarify the physical oceanography and the distributions of krill (*Euphausia superba*) in the area south of Cape Town, last studied here during the Discovery Investigations in the 1930s. The biology team was lead by Arthur Baker and comprised Peter Herring, Phil Pugh, Dave Shale and myself; Roy Wild and Mac Harris from Applied Physics gave us their usual unstinting support and expertise to keep our gear operational. Arthur was going to study the vertical distributions of krill, Peter was planning studies on bioluminescence, I was intending to look at the vertical distributions and behaviour of animals in relation to light, and Phil was keen to grapple with the siphonophores. We were to do all this using our multiple rectangular midwater trawl in a series of tows between 2000m and the surface, a series of dawn/dusk tows, and vertical series to complement our usual sampling in the N Atlantic. At least this was the plan!

We sailed from Cape Town accompanied by fur seals-these were the only seals we saw for the entire cruise- and made our way South. The weather was good, soon we were accompanied by petrels and Albatross (what's the plural of Albatross!?) and icebergs appeared at regular intervals. To my surprise icebergs were not pure white and they sailed past in colours of blue and green, beautiful and impressive! We then discovered that the low temperature diesel for the ship's crane



Box corer on the port side of Discovery's foredeck with iceberg on the horizon.

Image: Howard Roe.

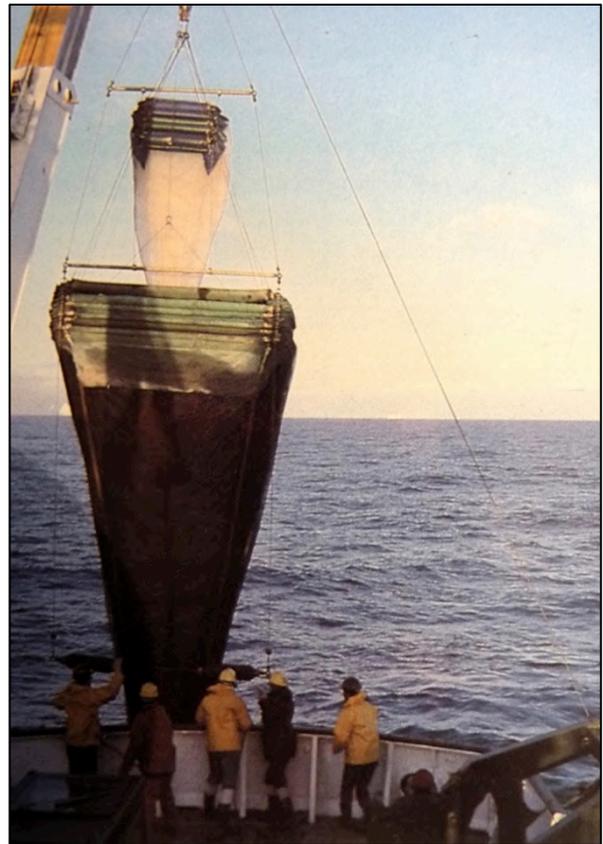
had not been loaded, so the only way we could launch our nets was by the heroic actions of the engineers who sat underneath the crane cab with blow torches to keep the fuel flowing whilst we launched and retrieved our trawls! And so we fished –but we failed to catch krill - whales are clearly so much better than we were - but so were the engine room filters! More or less every night we were called to the engine room to remove the offending animals that in turn provided Peter with material for his bioluminescent studies. We carried out our planned programme for the first leg of the cruise and one night caught the first (and perhaps only?) giant squid ever taken by scientists. It was a baby *Mesonychoteuthis* about 3m in length! This is a giant cranchid squid-essentially a barrage balloon-type animal that moves up and down



The Giant Squid, with young crew member for scale, on the deck of the Biology Lab., with (from left) John Cherriman, James Crease and Mac Harris looking on. Image: Peter Rowan.

by controlling its buoyancy rather than active swimming was caught at 2000 metres. Sperm whales eat them and I can only assume it was looking the wrong way when our net came along. Anyway it caused a stir on deck when we retrieved our nets in the dark. All we could see was a large gelatinous lump that on closer inspection started to move and display claws on its arms. This was a cue for wholesale retreat until the bold biologists deemed it safe to return; our catch was proudly laid out in the biology lab and a young crew member laid alongside for photographs. On our return to Cape Town our prize was sealed into an oil pipe and dispatched to Plymouth.

More unusual fishing was provided by our doctor! Peter Rowan's previous posting was as a doctor serving Norwich Jail-at times he must have thought he had exchanged one prison for another! He also had a writing commitment for an angling magazine so we tied his line to CTDs with no effect, we also took pictures of him with bending rod against



Top: The multiple Rectangular Midwater Trawl RMT 1+8 being launched over the stern. Bottom: Howard Roe and Mac Harris with an interesting catch. One of the biologists-no names no pack-drill-put this large jellyfish in John Cherriman's washbasin-his cabin was just along from the bio lab. The arms draped appealingly over the side of the basin to the floor, very fetching but John did not seem to think so

icebergs-his line was attached to the crane. He never did catch a fish-but no doubt a fisherman's tale was spun on his return. When we reached the edge of the pack ice pancake ice was forming in the sunshine. This was as far South as we got and we turned north and returned to Cape Town via more netting. Perhaps we should have stayed there!

Cape Town was an experience! South Africa was still in the grip of apartheid, which cast its shadow across the town. The waterfront was very under-developed compared to today and we sailed in looking forward to a few days of rest and recuperation in the sunshine. It was then that Sir George Deacon walked into the biology lab and announced how much he was looking forward to getting in to check some paper proofs. Each to his own! We had a good run ashore, went up Table Mountain by the cable car, in contrast Sir George walked up and announced to Roy Wild sitting on the top that he thought he had just suffered a mild heart attack! We toured the Cape, saw a few baboons eating car aerials, visited the wine lands and went back South. This was a mistake!

The weather took a turn for the worst and we found ourselves in a hurricane. It was the only time I ever saw the bridge double-manned by the officers, visibility was practically zero and spray and ice filled the air. The engineers tried to keep the ship's head into the storm using all three engines, but the swell and waves were so large that the propellers frequently lifted out of the water, resulting in the engines cutting out and the ship lurching round. This continued for days, during which our doctor decided that the end was nigh, wrote his will and threw it over the side in a bottle-perhaps it is still floating around the Southern Ocean. We could not work; we tried for days to mark Station 10000 with something significant but in the end marked it with a 10-minute neuston net tow¹.

¹ Editor's note: Howard's recollection may not be correct, Phil Pugh recalls, "... and my

Sir George had his 73rd birthday dinner in the middle of all this hurley-burley and we filled the time by holding an arts and crafts competition, which was won by an extremely fine egg-laying chicken that held court in the bar for months afterwards. The DIY three am curry-club featured during the nights-my waistline has never recovered. The storm subsided but we did little work during the entire second leg and returned to Cape Town feeling rather battered. And we then threw a party! The Cape Times of 6 April 1979 reported "the officers, crew and scientists of RRS *Discovery* ... rolled out the carpet on Wednesday night and gave Cape Town a right royal farewell..." The ship's engineers had spent days at sea making light chains and the ship was dressed with a message saying "Thank You Cape Town". It was a spectacular affair, *Discovery* all lit up, officers in their finery (even the ship's doctor had wangled an official uniform with red epaulets), food, drinks and small eats as only *Discovery* could lay on. Anyone who was anybody in Cape Town came aboard led by the staff of the British Embassy. It was by some distance the best party I ever attended on our ships.

And we came home. We did not really achieve our objectives but we did have some unforgettable experiences. Antarctica was different, but we saw very little of its celebrated wildlife-no seals except in Cape Town, no whales that I recall, a very few penguins on icebergs looking lost, but we did catch a giant squid and we did hang on during

rather raddled memory suggest that the big day was to start with the deployment of Jim Crease's current meter array but, when the wire parted, the day was given over to the biologists. We launched the RMT1+8M and sampled the depths 0-500, 500-1000, and 1000-1800 m. Unfortunately, I cannot remember my SQL and so have not managed to extract the exact times for the three nets, but I am sure that we made sure that it was well inboard before the big dinner!



the worst weather I ever experienced at sea. Most of the material we collected was never written up as things had moved on. We all got involved in the new feasibility study on radioactive waste disposal-somewhere in the archives and stores are unopened jars and records-perhaps someone someday will find them!

Howard Roe and John Cherriman with the giant squid and the box they put it in for its journey to Cape Town. And ... a jar of krill, just to show that some were actually caught - in the nets - on Cruise 100. Both pictures by Peter Rowan.



Royal ship gives 'thank you Cape Town' party

By TONY JACKMAN

THE OFFICERS, crew and scientists of the British Royal research ship Discovery — all 62 of them — rolled out the red carpet on Wednesday night and gave Cape Town a right royal farewell after their replenishment visits here while engaged in research work in the deep south.

The ship threw a party for Cape Town, which, say the ship's complement, has been more helpful than most places to the Discovery. The party was their way of saying "Thank you Cape Town", words which adorned the ship in lights to greet guests as they arrived. It was also the culmination of two month-long trips to within reach of the Antarctic continent.

2 main tasks

Scientists from various nations have been studying krill, which are concentrated in the area of the Weddell Sea, and which appear to move in a large circle around the ice-cap until they return to the Weddell Sea area. But heavy fishing of krill could lead to their dying out, so scientists of the Institute of Oceanographic Sciences in England decided to investigate this part of the Antarctic to study their movements.

There were problems, however, as the cost of an expedition down this way is prohibitive, but when a few other projects in

areas along the route came up, it became a worthwhile proposition.

The Principal Scientific Officer aboard the Discovery, Mr Jim Crease, told me that his team of 21 scientists had two main tasks — to measure currents, and to fish precisely at different levels and trawl for krill at specific depths. To do the latter, they developed a system which they term "opening and closing nets", which are positioned one below the other, six deep. The South African Department of Fisheries is considering employing the new system and the Britons are collaborating with the Stellenbosch Department of Oceanography.

There had previously been no current measurements in the area concerned, as various oceanological factors militate against this.

A man on board the Discovery who is, in the words of his colleagues, "much more than handy to have around", is Sir George Deacon, who was Director of the Institute of Oceanographic Sciences for many years, and who is now a Research Fellow. From 1929 until World War II he worked in the Antarctic on the old Discovery, and is something of a pioneer in these parts.

At the age of 73, Sir George is very active and, said Captain Phil Moran, the Discovery's master, "when last he was in

Cape Town, while the rest of us were relaxing in town, Sir George was climbing Table Mountain. I hope I'm as active as he is when I'm 43!"

The full results and findings of the expedition are not yet known, but it was ascertained that krill are very sparse in the area, while they are more dense near the surface.

"The engine room intake seemed to get most of them!" said Captain Moran. "We also caught one of the biggest squid ever caught in a net. The larger ones come out of whales' stomachs. Occasions like that brighten up what is a rather mundane job."

The Discovery's programme is, of necessity, planned two to three years in advance. From here Discovery goes to the Seychelles, then through Suez and home to the UK and Europe, on to the Caribbean and then to the Pacific. This will take the ship well into next year.

14 The Cape Times.

Friday, April 6, 1979

HARBOUR LOG

IN PORT LAST NIGHT:

Andalusia (9 784), G berth
 Balmoral Castle (7 952), C berth
 Chrysovalandou Dyo (8 950), K berth
 Discovery (2 568), Quay 500
 Ite! Volans (18 246), Repair pier
 Johan Hugo (7 001), Dry Dock
 Motoria (8 602), Entrance Wall
 Polar Honduras (10 000), Quay 601
 RFA Plumleaf (tanker), K berth
 Rogers Trader (5 773), Elbow
 SA Agulhas (research), Return Wall
 SA Van der Stel (12 402), Dry Dock
 Thiaki (33 163 d w t), Dry Dock

Transvaal (52 811), Quay 604
 Werdertor (tender), B berth
 Winter Wave (12 000), D berth

ARRIVING TODAY:

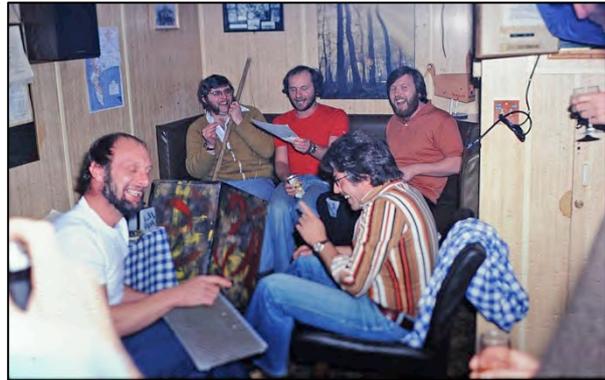
Arcadian Star, coast (Grindrod)
 Cedarbank, sea (Rennie)
 Cirt of Durban, coast (Ellerman)
 Leo Tornado, West Africa (Grindrod)
 Nedlloyd Agulhas, Walvis Bay (Nedlloyd)
 Nedlloyd Serooskerk, coast (Nedlloyd)
 SA Nederburg, US (FMS)
Further enquiries ☎ 43-2180

The lighter side of life at sea on Cruise 100

Images from Peter Rowan.



Keep-fit with Howard Roe (left) and Peter Rowan (in red).



The Crew's Bar, on the sofa are Bob Overton, Peter Rowan and Phil Parker. Seated right is Laurie.



Outside the Chemistry Lab., from left: Phil Pugh, Howard Roe, ...

Arthur Baker and the Giant Squid. Photograph by Andy Grattidge.

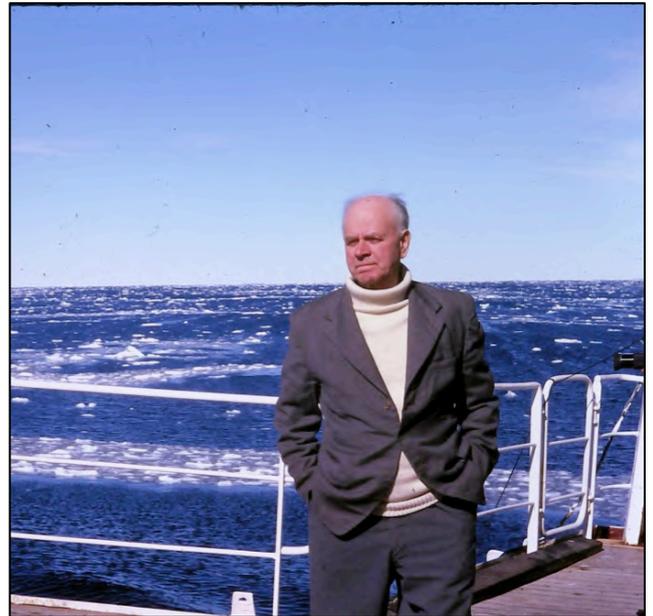


Furthest South

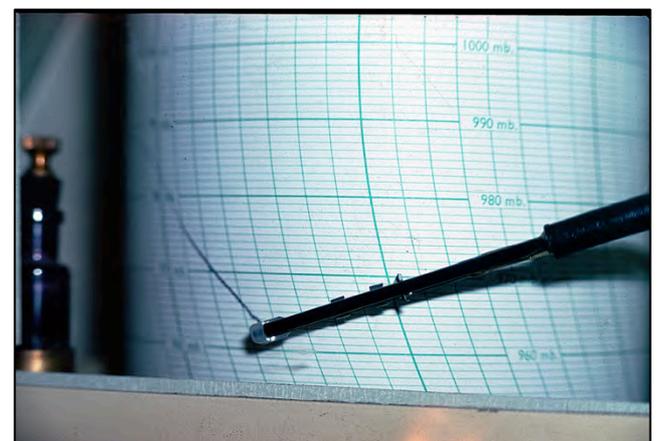
68° 30' South was reached on 17 February, recorded in Peter Rowan's diary, below, and in this photograph of Sir George Deacon from Howard Roe. Peter's patience with his camera was rewarded when an albatross kindly glided past this impressive iceberg. Printed on board in the Dark Room this image won a Merchant Navy photography prize. Peter's photograph of the barograph shows the pressure approaching 960mb before the "Great Storm".

17/2/79 Half way in many respects. We crossed the Antarctic circle at 6.15pm yesterday (66° 30'S) and pressed on. By midmorning although there was little a moderate to strong wind the sea was relatively calm and the most knowledgeable than I did ~~over~~ suspected something to loom up over the horizon. And so it did at noon, small pieces of ice the size of a car at first, but soon becoming larger and closer together. It was a bright day fortunately so photography was easier and as I photographed the bergs cutting through the ice there was a continual dull ~~to~~ thudding. We were forced to

change course from due South to West eventually as Discovery is not built for heavy ice, but again we were prevented from further progress. On one ice floe some lucky ones saw two Adelia penguins, ~~not~~ no doubt as surprised as us. I had gone to lunch so missed this, much to my disappointment. The furthest we got South was 68° 30'. The air temp. was really cold (minus 3°C) and even without the wind our PT was very cold. I tried fishing when we were stationary. I let out line for 20mins and then hauled in for another 20. It was hard going (15lb) line even with a harness. I marked the line as far as I got, and still have to measure it. I used two 3oz/4 wt and a Abu lure. Cold stopped me as much as anything else.



Sir George Deacon FRS with pancake and brash ice at the cruise's furthest south, about 68° 30'S 25°E, some 100 miles north of the coast of Queen Maud Land, on 17 February.



Birthday Celebrations: Sir George Deacon and Roger Chamberlain

March 21 was a day for celebrations, Sir George Deacon's 73rd birthday and, 50 years his junior, that of Roger Chamberlain, captured here in Peter Rowan's diary entry and in a Special Edition of "The Times". The "Good Luck" for Roger, then an A.B., and undoubted hard work, meant that Roger became Master of *Discovery* in 2003 serving until 2010.

On this occasion, the front page was written by Phil Moran, despite the assertion on the bottom of the first page. Phil had been Chief Officer on the first leg and but became Master when Phil Warne had to return to the UK at the end of leg 1.

Phil Moran passed away in January this year. Living in St. Ives, he was the launching authority for the lifeboat, and surely that hat can't be the same one many readers might recall from cruises past.

He became a popular author of children's stories, with his adventurous character *Soggy the Bear* said to take inspiration from Phil's own experiences.

21.3.79. In two weeks we'll be in Cape Town. Today is the 73rd birthday of Sir George Deacon who is aboard. It was also planned to be the 10,000th "discovery" station but bad weather has held us up. We had a big do in the evening with a splendid dinner. One of the courses was grapefruit sugar and rum named up. I must get the exact recipe so that I can serve it up in Seychelles.

Thank you and congratulations on 'The Times'. I think Barry Heywood would like to see the BMS article.

George.



This photograph shows Phil on the balcony of his house, a converted ship/sail loft. For more details see <http://www.mabecronbooks.co.uk/AuthorsIllustrators/Philip%20Moran.html>

"THE TIMES"

21st March 1979.

Special Edition.

EDITORIAL. Today is a rather special day for "Discovery". Firstly it is the occasion of the 10000 Scientific station worked and also it is both the birthday of Sir George Deacon and of Roger Chamberlain, both members of our complement. It is difficult to write about shipmates on a personal basis but we hope that the brief histories given below will prove acceptable and that all on board can then share in mutually congratulating these two men and wishing them all the best in the future.

Sir George Is 73 years old today, and is one of the leading scientists of his generation, who has personally made many important contributions to his chosen field of oceanography, the science of the sea. He has been described by the Royal Institute of Navigation as a man whose scientific integrity, conscientiousness, modesty and lucidity have earned him general respect. Sir George took his first degree at King's College, London. He was on the scientific staff of the Discovery Committee in England, and at sea in the Royal Research Ships "William Scoresby" and "Discovery II" during 1927-1939, his work being recognised by the award of his D.Sc. He was appointed the first Director of the National Institute of Oceanography in 1949, in which post he remained until his retirement in 1971. We are all well aware that having enjoyed Sir George's company on this cruise that he has in no way retired yet !!, and wish him many happy and long years in the continuing studies of his interests.

Roger Chamberlain. Roger is a little bit younger than Sir George, being a modest 23 years old today, born in Cardiff, and has spent all his life so far living in Barry. He is not from a seafaring family but joined Research Vessels as a Catering Boy in Feb, 73. Since then he has worked continually for R.V.S. on "Challenger" "Shackleton" and "Discovery" apart from a period Aug 74-Feb 75 when he had a break and went on a couple of commercial ships. He transferred to the Deck Department 11th June 73 and now holds his A.B's Certificate. He has been studying while with us for his Second Mate's and we wish him every success in obtaining this when the opportunity presents itself. Roger has been north of the Arctic Circle and south of the Antarctic but has never been in the Pacific Ocean. He is single but reported to be going steady, main interests are sea food and photography. With the benefit of youth on his side he has it all in front of him, we wish you Good Luck Roger in all that you attempt.

Station 10000 The first Discovery station took place in 1925 in 18 metres of water off Ascencion Island. Sir George's first station was No.137 in February 1929 on the "William Scoresby".

So here we are at the 10000 station another milestone in the Oceanographic world, and the number itself does not adequately convey the immense amount of information which has been achieved by the combined efforts of Scientists and Seamen working together. Let us hope that some of us will be around for Station 20000.

Rumour. There is no truth in the vicious rumour which is sweeping the ship, that I had help from the "TWM" writing this first page, I deny any such collusion and would verbally state "" I Peter Rowan, Editor, writ this introduckshun all bye muhself"".

The Wanderer has been around and about talking to the man in the alley. He sends me this report.

Impressions of the Antarctic.

Jeff Kelly It seemed to take a lot longer to cook eggs down here; must be the cold weather.

Ernie Phillips Well it's hard to say Doc, but we really didn't notice anything different. You see we haven't got any windows down here!

Phil. Moran I turned in for 5 minutes after lunch and missed the whole damn thing after travelling 6000 miles to see it.

Derek Noden It's colder than Rockall.

Teresa I liked the icebergs and was sorry to miss the petrels that were seen on the first leg.

Craig Vrettos It was very white, wasn't it?

World News

Israel Israel says she will not sign the peace treaty unless the finances are sorted out. She wants the USA to pay for the cost of leaving Sinai. The Israeli cabinet have approved the treaty, and the Parliament are expected to do the same. 80 Israelis have set up a new settlement in Sinai as a protest.

Finland In the general election the right wing party scored heavily over the left.

Iran There is heavy fighting during the night between Kurds and troops.

Bhutto Mr Bhutto says he predicts political turmoil in Pakistan if he is executed. He smuggled the letter out of the death cell. There is no definite date yet for the hanging.

USA There is to be an official enquiry into President Carter's peanut business. Certain "irregularities" to do with bank loans of £6,000,000 are involved. It is not thought Carter himself has done anything wrong.

West Germany Two of the most wanted criminals in Germany raided a bank. They were members of the Baider-Meinhof group.

Dr. Rudi This former South African minister alleges that South African politicians have paid cash to bribe American politicians.

Ireland There is a strike against PAYE.

UK

Work The number out of work has fallen by 50,000. There are still 1 million 400,000 unemployed though. That is 6% of the working population.

Strikes The COHSE ambulance men have gone back to work, much to the annoyance of the NUPE ones. Civil Service unions are preparing to step up their industrial action after fruitless talks with the government.

Weather There is a thaw at home, but more bad weather is predicted, and this time say the experts the snow will penetrate further south. Many small roads still blocked, and many motorists who had to leave their cars have returned to find them vandalised. 20,000 school children in Co. Durham were unable to get to school.

BR Their pension fund is to stop dealing in antiques and this has led to speculation that the market is in decline. So far they have bought £28 million pounds worth. They plan to spend another 12 million and then stop. A recent buy was Picasso's "Blue Boy" for 1/2 a million pounds.

Aintree This famous race course was in financial trouble, but the outstanding debts have been paid and all is well. (Ed's note; until some more cheap publicity is wanted.)

Suicide A young lady friend of Sir Hugh Frazer has been found dead in a car. The cause of death was carbon monoxide poisoning.

Peter Rowan
Peter Rowan Editor.

The rougher side of life at sea on Cruise 100

Jim Crease was not the only Cruise 100 participant to have vivid memories of violent storms. The Doctor, Peter Rowan, recalls:

"At the start of this bad weather on 22/3/79 I went onto to the bridge. It was the afternoon. Phil Moran was there and I took the photo of one of the waves hitting the bow that accompanies Jim Crease's recollections on page 2. I had to take it through the 'Clearscreen' spinning window, maybe a bit more than a foot in diameter. This was the only way it was possible to see out.

We were pitching heavily at this stage. As the waves got bigger Moran told me to 'clear off Doc, ... or you better go' -something like that. I looked at the radar and there were icebergs all around us. On 24th - 25th March there must have been dozens of them. I think I have pictures of the RADAR screen.

The worst was the night when the prop cut out as it came up and left the sea as the ship pitched forward. There was sudden darkness and silence after the screeching of the prop in the air. I could hear the screeching all too clearly in in my cabin aft, next the Chemistry Lab. The prop over-speeding caused all

the electrics to fail and power to go. I could hear Les the electrician run off to fix this.

With no power to control the ship's heading we turned sideways to the sea - beam on. While the ship stopped pitching, she would start to roll, and until the power came on, the rolling got worse each time until it felt we only had to roll one more time and we'd go over. While this was happening the icebergs all around were getting blown past us by the high winds.

I thought my time may well be up. We had no communications with the outside world except Morse and I felt if were to go down my parents would never know what had happened to me. Sounds a bit melodramatic maybe but that's how I felt as the doctor who was stuck on his own in that cabin. I put pillows all along one side and under the mattress of my bunk so I could wedge in the V shape between the bulkhead and mattress. I got to galley, when I could, on my bum shuffling around with my back to the bulkheads otherwise you bounced around like a pinball.

My diary entries follow:

22.3.79 A rotten day with rough weather. The only good thing was finding a Bulldog Drummond book to read in 'Spares' Cabin. The captain was on the bridge all night. The wind was tending to roll us one way, and the swell the other. Even my large trunk with books in was moving around the cabin during the night. No sleep was possible of course. In the morning a big notice appeared in the engine room with an arrow pointing at the ceiling. It said this side up.

23.3.79 The weather got better but only briefly today. ~~Here~~

24.3.79 and 25.3.79 I group these two days together because they were an indistinguishable 48 hours with huge waves and no sleep. The cabin littered with debris and I later had my suspicions confirmed that we were in danger of sinking during the worst of it. The ship would drop 80' its nose first into from the top of a wave to the bottom; the propeller - out of the water - would speed up suddenly cutting out at

electrical power. (This has been a fault on the ship for a long time). We then are left drifting & with no steering at the sea's mercy. Had we "tripped out" on Sunday night during the worst weather and turned sideways the waves I am assured would have turned us over. It was very frightening. The captain and officer were on the bridge continually looking for icebergs and the engine room has double manned. When she did cut out a few times they had the power on in record time. On the computers trace of our ~~chart~~ course (worked out via satellite) you can see us drifting.

1400
Day 83 (or 84) ~~800~~
drifting.

I seriously wondered if I should have poison ready rather than drawn, but couldn't think of anything that would act quicker than the Antarctic's freezing water.

What exactly was going on in the Engine Room during the stormy weather?

Andy Grattidge (with a beard, below) was the 4th Engineer on his third voyage with RVS (if his memory serves him right). He later rose to become Chief Engineer - and many readers may recall him as Andy Adams. He left NERC in 2003 to join the Norwegian company Farstad, with the last two years before his retirement spent as Training Chief on their new diesel electric ships. Here are his recollections:

It was a difficult trip, engine room wise, but we were fortunate to have staff who had been on *Discovery* in bad weather before. The problem with the prop coming out of the water, over-speeding, and tripping the propulsion circuit breakers was well known. Fortunately, a decision had been taken at an early planning stage to include two Electricians, Phil Parker and Les Wilson, to double up with us engineers on watches in bad weather. Some of the waves we encountered were in excess of 30m high!

Discovery had no control room, and watch-keepers used to sit on wooden boxes on the middle platform of the engine room next to the main switchboard. We were hove-to in the worst of the weather. As we encountered a large wave, the stern would dig in, and the bow would rise steeply as the ship struggled to climb the steep wave. This was a sort of pre warning, if you like. As the ship reached the crest of the wave, she would level off briefly, before plunging madly down into the following trough. At the point we reached the crest of the wave, the centre of the ship was supported, but the bow and stern, and thus the propeller, were out of the water; with the propeller suddenly out of the water, and no braking force on it, it would spin wildly, over-speed, and trip the propulsion circuit breakers. At this point, the Electrician, or Engineer, on watch would rush to the Motor Room to press the over-speed reset, while the watch-keeping Engineer/Electrician mechanically turned the big circuit breaker wheels on the front of the switchboard to open the main contactors to reset them. Then, following a shout from below, confirming the over-speed switch was reset successfully, wind them back in, and reset the field switches.

We reckoned we had less than a minute to reset the propulsion before we hit the trough of the wave, and, without propulsion, have the real danger of the ship broaching-to! We usually managed to reset everything and have the power back on in about

thirty seconds, a tribute to the gear and watch-keepers!

The "Krill Attacks" kept us on our toes, as well. Without warning, we would sail through a dense shoal of krill, some of which would be sucked up into the main seawater filters. It was ironic that the sea temperature was just above 0°C, and yet we struggled to keep the engines cool as we lost the seawater cooling supply. Again, we had a well-rehearsed plan and several spare filter inserts. Once we realised the filters were choked with krill, we could quickly swap them over, remove the clogged filter basket, replace it with a standby clean filter



Top: Andy Grattidge, from his album. Above, from left: Neville Wilson da Rose - 2nd Engineer Alex Greenhorn (kneeling), Peter Rowan, Phil Parker, from Peter Rowan's collection

basket, and then restore the seawater cooling to the engines. Sometimes we were changing and cleaning filters for over an hour! The scientists were certainly pleased with the buckets of krill we brought up to them, certainly far more than they ever caught in the nets, and I believe there was even "Krill Soup" on for dinner one night.

A welcome relief was the return to Cape Town and the farewell party. Both electricians made an

illuminated "Thank You Cape Town" sign, which took around 150 x 15w pygmy lamps - which all had to be soldered together - a mammoth task! The photographs below show this work underway and being inspected by the Captain at the time, Phil Moran. There were over 200 visitors, and, I believe, a band on the quay, all arranged by Phil Moran. All the visitors congregated on the port side to watch the band - creating quite an alarming list to the ship at the time....!!



Antarctic Petrels:

"I took this photograph from the port side of these petrels that followed us. We were well south of Cape Town but not into the ice yet." Peter Rowan

Empathy, and getting on with the job despite the weather: recollections of the only woman within thousands of miles.

Theresa Cooper (née Colvin) sent in the following, with a set of pictures and captions:

I have very vivid memories of this cruise for all sorts of reasons, including the weather. I do remember spending some time trying to reassure Pete [the Doctor] that all would be well, that those on the Bridge did know what they were doing, and how to use his life jacket under his mattress to make sure he didn't roll out of his bunk. And that it was perfectly okay to come out of his cabin. I think I was sent down daily by some of the senior scientists to see how he was, an empathetic ear. Perhaps in return, I remember being 'interviewed' for *The Times* as the only female within at least a thousand miles but haven't got a copy – a pity. [Editor: Peter Rowan still has his copies and Theresa's Editorial follows on the next page.]

I dug out the one dress I had with me for the formal reception in Cape Town, had a compliment from Phil Moran, and was a bit of an oddity with the Embassy staff who didn't think I 'belonged' with the ship. I enjoyed a visit to the Cape of Good Hope and still have the souvenirs and guide books



Martin Beney (RVS), Theresa, and Jon Seymour (2nd mate) on the summit of Table Mountain. Photograph taken by Alex Greenhorn, ship's engineer.

I guess I must have produced that 1800 track chart – computing was far more fun in those days. After my morning work in the computer room was done I spent a number of afternoons tutoring Roger Chamberlain in Pure Maths for his Ticket. He still remembers that, and he did pass the exam when he got home.

The 1800 computer system didn't fail and logged data continuously even though in those days it had 'flying heads' on the disk drives. The weather was so bad that we kept all the computer manuals,

indeed anything that moved in the 1800 room, on the floor and worked around them. The only activity that was curtailed was the traditional Saturday morning cleaning of the computer room, given the floor was covered in manuals. The vacuum cleaner was kept at the rear of the central processing unit. Other than that, myself and Martin Beney carried on regardless.

The Galley staff made a brilliant effort for the special dinner for George Deacon - all that silver service and china with *Discovery's* whale on it. The saloon looked fantastic. I'd never seen it before and didn't again. I wonder what happened to it? And the food was excellent.

On being the only woman within at least a thousand miles - I remember having an apology from Barry Heywood (BAS) at the end of the trip. It seems that before we left the UK, he had tried to get me off an Antarctic trip because I was a woman. He should have kept quiet, as I knew nothing about it. He did say I had done my work well and having me on board had been fine. High praise it seems. Some years later Edward was at a meeting in BAS and as Barry's name came into the conversation his colleagues reported how supportive he was of taking women down south - so I hope I did something in a small way to bring about that change in attitude. Wouldn't happen these days, but the alternatives to me were called Daphne and Doriel in any case.

I also did the next (GLORIA) cruise up to the



How times have changed - this group photograph of the OSNAP cruise on RRS Discovery in July 2016 has almost as many women as men. From 2015 the ship had her first woman Master, Captain Jo Cox. Courtesy OSNAP blog at <https://ukosnap.wordpress.com/>

Seychelles with Pete still onboard - much warmer and much calmer. I have one photo of Pete up on deck putting on his suntan cream. It was a difficult few months to pack for - Antarctic and tropical gear.

The Times 24 March 1979

Editorial This paper proudly presents it's biggest scoop. I am expecting in my cabin at 10.0am the only female for a thousand miles. That's over 3 million square miles. She will be writing the rest of this editorial for me.

I am used to being the only girl on board so it came as an unexpected surprise and honour to be asked to contribute to this wonderful paper. The editor with his commercial interest at heart had hoped that I would write something a little spicy. The exact adjectives he wanted me to use were *****, and *****, *****, and br*****. This I refused despite bribery with chocolate biscuits (from the engineers tin) drinking chocolate and Bonart. It became obvious at this stage that my prose was not sensational enough for the editor, and so I made an excuse and left, dodged past Lea's front door, back to the relative safety of the other scientists.

World

Shutto The high court has said that the death sentence must stand. All 7 judges were unanimous. His only chance now is an appeal for mercy. He must make this within 7 days. Mr Shutto has always said he would not appeal.

Carter He has said these nations who oppose Egypt's attempts for peace are doing great harm to the Palestinians cause.

El Salvador Left wing guerrillas say the 2 British hostages are safe at the moment.

Paris Riot police have been fighting with left wingers. Shops were looted.

Brazil A strike by metal workers has paralysed the country.

USA Two Cubans who killed a Chilean foreign minister have been sentenced to life imprisonment.



*RRS Discovery with her distinctive yellow funnel is seen in the middle right.
Three images from Theresa.*

Early Experience with Satellite-tracked Drifting Buoys



Very little information has come to light about the physics undertaken on Cruise 100. More would be welcome.

Chris Hunter was aboard to finish the preparation and deploy six satellite-tracked drifting buoys, of the type on the left, in the Southern Ocean. The following cruise would deploy three of these buoys in the Indian Ocean. The Cruise 100 deployments were an IOS contribution to the FGGE Southern Ocean Drifting Buoy network (FGGE being the First Global GARP Experiment – where GARP was the Global Atmospheric Research Program that had begun in the 1960s).

The buoys measured atmospheric pressure and sea surface temperature and were equipped with a UHF transmitter and antenna to send the data to polar-orbiting TIROS-N and NOAA-6 satellites. From the Doppler shift of the transmission frequency the receivers on those satellites could estimate the positions of the buoys - up to eight fixes per buoy per day per satellite². By the end of the year 13,020 position fixes and sets of data had been received from the buoys. Peter Collar, Charles Clayson, Pat Gwilliam and Chris Hunter wrote up the early results in a technical paper³.

Five of the Cruise 100 buoys had been fitted with drogues, at depths of 30, 100 or 300m in order to ensure the buoys were tracking the upper ocean and not the wind. However, the drogue attachment proved not to be sufficiently robust for the conditions met in the Southern Ocean and changes were made for later deployments following this early experience.

We do have this picture by Peter Rowan of Phil Parker standing guard over a frame containing glass buoyancy spheres within their yellow hard-hats that John Cherriman would have used on the moorings.

The FGGE buoy pictures are also by Peter. The view from above of three buoys was taken on leaving Cape Town - the Pilot Boat is just departing.

² Here we draw heavily on the material in the IOS Annual Report for 1979 at <https://viewer.soton.ac.uk/nol/image/24086/64/#head>

³ Collar, P.G., Clayson, C.H., Gwilliam, T.J.P. and Hunter, C.A., 1982. Drifting buoy observations using satellite telemetry. *Radio and Electronic Engineer*, 52(5), pp.239-245.



Buoys for Current Meter Moorings

James Crease wrote to Dr. Tony Laughton, Director IOS, that all of the moorings planned to be laid on the first leg had been deployed without incident (see page 34).

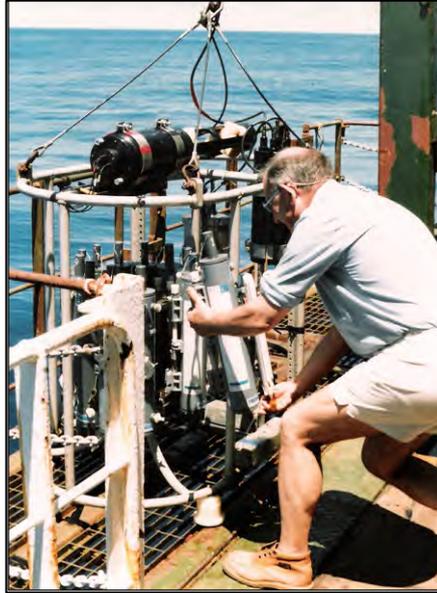
Reading between the lines, there were "full ocean depth" moorings, with the steel sphere buoyancy 100m below the sea surface. Except for one mooring where the presence nearby of a large iceberg suggested a buoyancy depth of 300m would be safer. Perhaps it was the furthest south?

Unfortunately, plans to recover at least some of the moorings went awry.

In these photographs by Peter Rowan we see the operations conducted on the starboard side of the foredeck, and what looks like a recovery of the steel sphere buoyancy alongside the starboard side.

The editor's guess is that it is John Cherriman in the yellow waterproofs - a sensible choice. The orange foul weather gear on the person to his left was IOS stores issue for a while, but had a reputation for not being terribly waterproof.

Seagoing Stalwarts



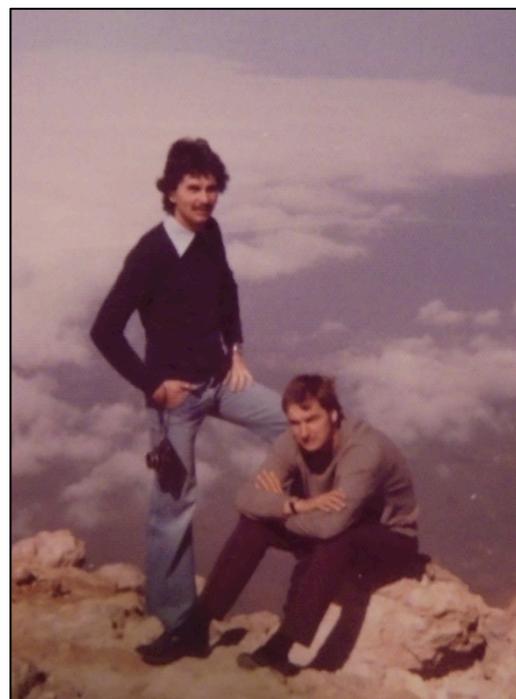
Despite extensive searching by the contributors to this article no photographs from Cruise 100 have come to light of five seagoing stalwarts. As it would be remiss not to recognise their contributions, here they are, at sea or before or after.

Clockwise from top left: John Smithers, the CTD

engineer, atop Teide,

Tenerife prior to *Discovery* cruise 80.

John Moorey, salinity and oxygen analyst, keeper of thermometers, on *Discovery* cruise 164. John Burnham, Shipboard Computer Group, with Roger Hammerton the Radio Officer, on Teide after *Discovery* cruise 75 - Roger had sent the SOS from *Discovery* during the fatal fire on board. Roy Wild, in his element in *Discovery*'s workshop on cruise 164 with CPO Martin Harrison. Chris Hunter, who'd been the last Resident Scientist on *Discovery*, here with Peter Collar on RV *Squilla* off Plymouth. If you do have their pictures from Cruise 100, please let us know.



Roger and John Burnham by Theresa Cooper (née Colvin), Roy Wild by Jane Read, John Smithers, John Moorey and Chris Hunter by Gwyn Griffiths.

Snapshots of some of the crew



The Doctor, Peter Rowan, took a good number of photographs of member of the crew about their work and when off duty - a side of life at sea that was rarely fully portrayed in the formal reports of the time.

The Bosun in his workshop with the ship's bell and the Hall Russell maker's plate on the bulkhead. 95% sure this is Jimmy Jewitt.



Peter Rowan writes, "*This is taken in my cabin at my desk. It shows Brian Buglass sewing one of my shirts. He worked in the galley and I think was my 'steward'. I couldn't even iron and he did that for me if I need to look smart. He looked after me more than I looked after him and we were good mates. I think he was a Geordie. On the back wall is a picture of my then girlfriend - now my wife. Brian and I were 'The Wanderer' (as in albatross) as news gathers for the daily paper*".



Dick Burt, Netman, Bosun's Mate & Ben Malfatti.



Three unnamed members of the crew.

Impressions of the Antarctic as reported in the ship's newspaper

The Wanderer has been around and about talking to the man in the alley. He sends this report.

Jeff Kelly Impressions of the Antarctic.
It seemed to take a lot longer to cook eggs down here; must be the colder weather.

Ernie Phillips Well it's hard to say Doc, but we really didn't notice anything different. You see we haven't got any windows down here!

Phil. Moran I turned in for 5 minutes after lunch and missed the whole damn thing after travelling 6000 miles to see it.

Derek Noden It's colder than Rockall.

Teresa I liked the icebergs and was sorry to miss the petrels that were seen on the first leg.

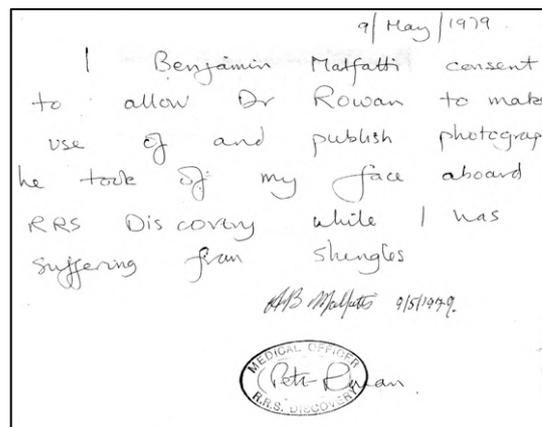
Craig Vrettos It was very white, wasn't it?

An extract from Dr Rowan's Casebook and inside the Hospital

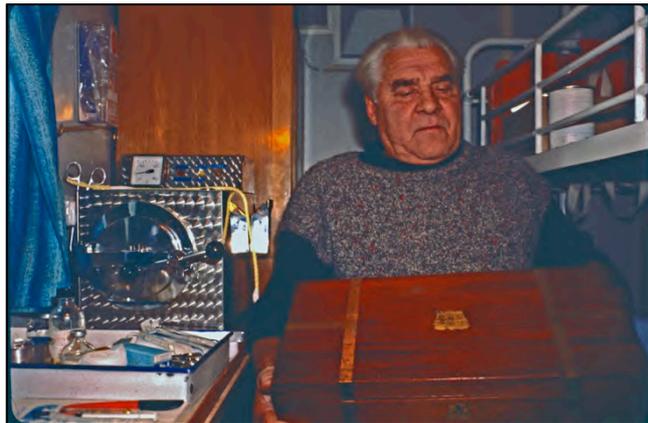
These recollections from 40 years after Cruise 100 allow for the inclusion of material on an aspect of life at sea on a research ship that is rarely seen - an extract from the Doctor's Casebook.

Ben Malfatti started to develop shingles just before *Discovery* got to Cape Town. Dr Rowan later had him write a consent letter for good record keeping. You can see the nasty swelling in the picture with Cape Town behind.

It started to look a lot worse. That's when he said to Mike Harding he'd rather stay with Dr Rowan on *Discovery* than go home. He was put to bed and prescribed whiskey. The last time Dr Rowan saw him he was in fine form with all the other sailors drinking at the Pirates Arms near the Clock Tower in Victoria, capital of Seychelles. He worked through most of *Discovery* Cruise 101.



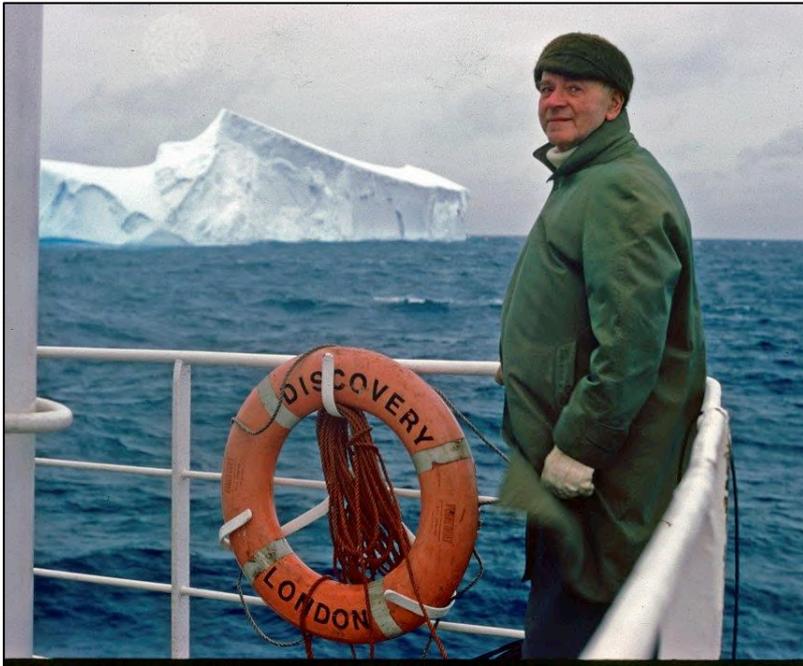
Right: inside the hospital, looking towards the stern. The patient is the Latvian Bosun's Mate who had a very painful and rotten tooth and wanted it out. On board was an



"Emergency Surgery" book, marked "Property NERC Barry 1978". The autoclave to sterilize the surgical instruments is on the left, with the lever handle on its door - a marked contrast to today, when these instruments would be single-use. On the Bosun's Mate's lap is one of the wooden medical cases, with a brass RRS *Discovery* plaque. Some years later, after serving on further NERC cruises, RVS presented Dr. Rowan with one of these cases.

The Hospital had the only bath on board, but with a strict restriction on its use due to the need to conserve water. But it has been reported that a very new junior sailor wanted to shrink his first ever pair of Levi jeans and thought that the best way to shrink-to-fit would be to get into the bath with the jeans ...

Sir George Deacon's Cap



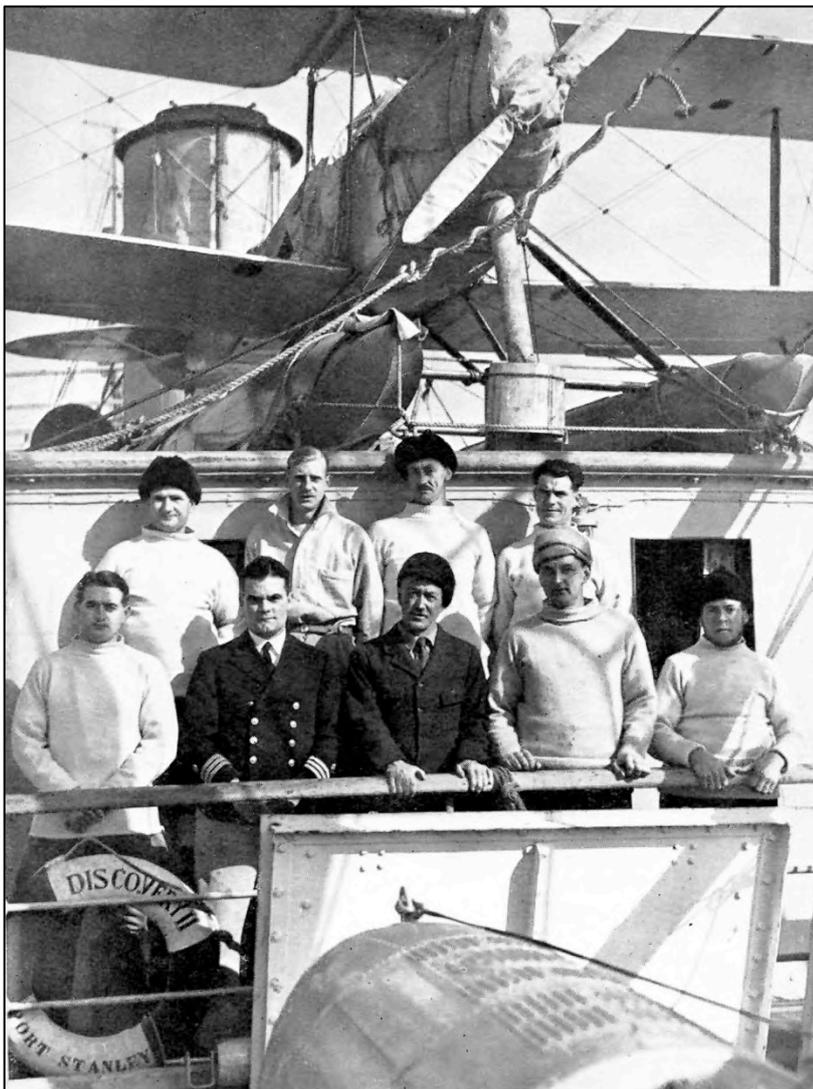
By the Editor

The Doctor, Peter Rowan, sent in this delightful posed picture of Sir George Deacon. I smiled for a very personal reason. Dr Deacon was instrumental in my spending ten weeks at the start of 1978 on an US icebreaker, the USCGC *Glacier*, in the Ross and Weddell Seas. This was a true formative experience and led to my life-long interest in the Polar Regions. Which is why I had to write this piece about the story of Deacon's cap.

Peter had asked Dr Deacon if he would mind him taking his picture against this imposing iceberg. Not at all was the answer, but can I go and get my cap? This cap has form.

Deacon was leader of the 1935-37 RRS *Discovery II* expedition in the Southern Ocean when, in late November 1935 their science was interrupted by orders from the Government: Steam to Melbourne, have the ship outfitted with a de Havilland Moth aircraft and a Royal Australian Air Force detachment and head to the Bay of Whales, Ross Sea, to search for and rescue the pioneer polar aviator Lincoln Ellsworth and his pilot Herbert Hollick-Kenyon. The pair had flown 3500km from Dundee Island off the Antarctic Peninsula on 23 November, but radio contact had been lost with their support ship, the *Wyatt Earp*, then in the Ross Sea. They were presumed lost.

To jump ahead, Alfred Saunders, Deacon's assistant in hydrography and a decent skier, reached the old buildings at Little America and found both fliers well. *Discovery's* Captain, Lt. Cdr. Leonard Hill OBE DSC RNR is in his uniform in the front row, and to his left is Lincoln Ellsworth - wearing his cap. Familiar? Ellsworth gave his cap to George Deacon in thanks. That cap returned to Antarctica with Deacon on Cruise 100. No wonder that I imagine a smile with many memories on Sir George's face.

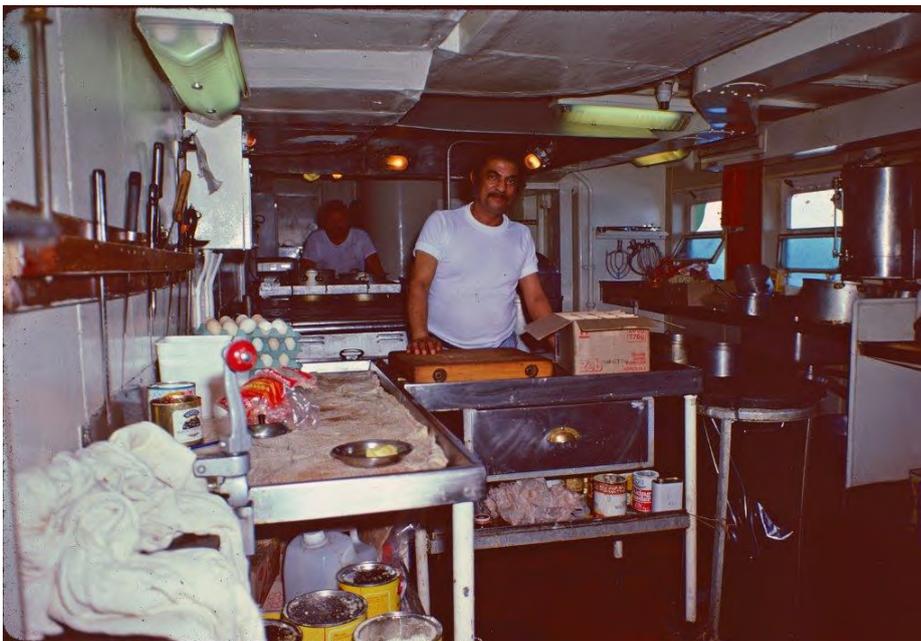


Top: George Deacon by Peter Rowan.

Bottom, RRS Discovery II, 1936. Front row: Flying Officer Murdoch, Lt. Cdr Leonard Hill, Lincoln Ellsworth, Wing-Commander Douglas and other RAAF personnel. Image in the archives of the National Oceanographic Library and used with thanks; reproduced in "Discovery II in the Antarctic", John Coleman-Cooke, Odhams Press, 1963.

Constants of Life at Sea: Boat Stations and Preparing Meals

Fondly recalled as Board of Trade Sports, the only recognisable face here is Howard Roe



Preparing meals in the Galley: with Geoff, *Discovery's* chef, a Liverpudlian. Peter Rowan remembers, "A group of us going into the *Metropole* in central Cape Town and they refused to serve him. We left but after telling them he'd looked after us for 1-2 months in Antarctica and we were not going to put up with that. It may have been put a bit blunter."

Curiosities

Cooking in the Biology Lab

Arthur Baker, Dave Shale and Howard Roe were intent on cooking krill. This did not escape the attention of the Cookery Correspondent of the ship's daily newspaper, who wrote, "*I have been out and about sampling krill. They were superbly cooked by Dave Shale, but lack that subtle ingredient called taste. Arthur has plenty of krill left for the writer of the above letter [of complaint, suggestion a new Editor was needed], and if he too finds them as unpleasant to eat as I did, then I can suggest a new way he might like to administer them to himself*".

Improvisation

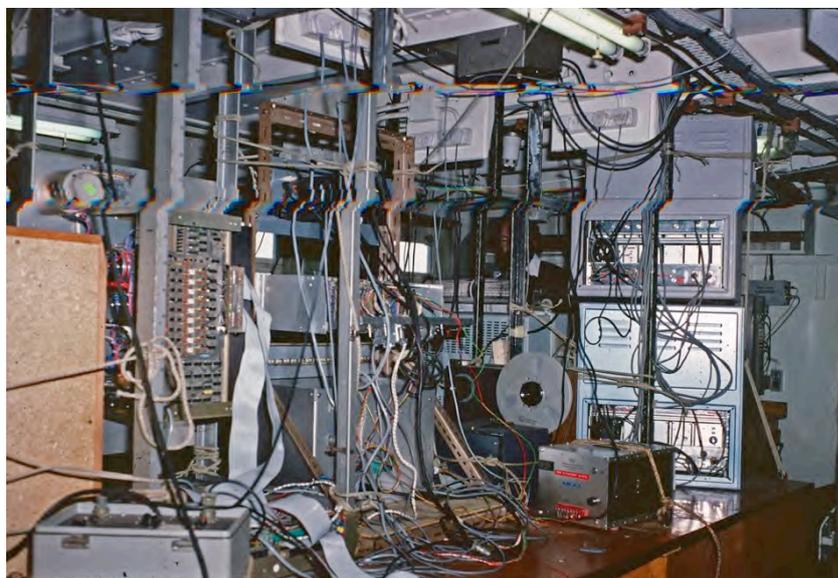
The mechanical and electronic engineers aboard often took great pride in being able to make, or cobble together, replacements for broken or missing parts or some new contrivance to advance the science. John Bicknell and Andy Harris made sure the grey wooden component cases in the electronics lab were topped up for such eventualities.

The word "photomultiplier" on the bottom grey box suggested this unique apparatus was for Peter Herring, and while he recalls the Biscuit Box, he cannot recall its purpose.

Behind the CTD rack in the Electronics Lab

The layout of the electronics lab was such that one could see the back of the equipment in the bay by the door leading to the starboard-side mid-ships winch. But it was rarely photogenic, and so this may be an unique view of the back of John Smithers' CTD equipment. The editor thinks he sees the back of the

DigiData magnetic tape deck, and in the foreground on the bench, the control box for the General Oceanics rosette multisampler. And, just right of centre, behind the racking, is that Chris Hunter?



RRS *Discovery* Scientific Log for Friday 23 March 1979 - Station 10000

Station No.	Time	Proceedings
10000	1805	Corrected log of morning. 217
	2008	Wire parted at buoyed lat. station with 2500 m. of wire out. (see log report)
	2031	RAT 1487M 0/6

R.R.S. DISCOVERY												
23rd day of March 1979												
TIME	POSITION			WIND	Weather Vis.	WAVES		Corrected Barometric Press. mbs.	Temp. °C		CLOUD	
	Lat.	Long.	Depth in fms.			Dir. From	Speed Kts.		Dir. From	Height Ft.	Dir. Bulb	Wet Bulb
ZONE TIME AT NOON	1000 POSITION			DEPENDENT ON		Sunrise		Age of Moon				
	LATITUDE	LONGITUDE										
0001												
0400												
0800												
1200												
	54	44.35	218.8 E									
1201												
1600												
2000												
2400												

With kind permission of the National Oceanographic Library.

James Crease's letter to Dr Anthony Laughton, Director IOS, at the end of leg 1

Since the first edition of this unusual Cruise Report a copy this letter has come to light, from Arthur Fisher. The handwritten letter has been transcribed and is reproduced here with the author's permission. The bad weather was soon to hit the ship on the second leg ...

RRS Discovery
At Sea
27.2.79

Copy for Arthur Fisher Brian McCartney
John Gould Stuart Rusby
David Roberts John Swallow

Dear Tony

We have had a very good cruise losing only about 24 hours through bad weather. We have got through all the planned programme and indeed were able to go further south than we originally expected in the time. This was due to the willingness (indeed the volunteering) to use 3 engines. So for quite a lot of the time we have been making passage speeds of 12½ to 13 kts.

Current meter moorings in place as planned - except that I 'chickened out' on one mooring which we set with the top buoyancy at 300m rather than the 100m depth initially intended. We had a very good sight, shortly after laying, of a reasonable size berg toppling over quite close to us. The opportunity to go as far as 68° 30 allowed us to get well into the E. Wind drift. Work with the CTD has provided nice detail in what has been up to now a rather sparsely sampled area. We seem to have made a sensible choice in working between 20° and 30° E. I will probably narrow down the work next leg to 23°–26°E which does seem to be a biological and physical boundary. Arthur is writing to Peter about the biology - work with the multiple RMT has gone fairly smoothly with very occasional hicoughs (sic.). Krill catches seem to have been small but in some cases deep and persistent. The engine room seems to be very successful in catching the beasts in their intake. You will doubtless have heard of the very large squid caught in the net the other night.

Sir George has been I hope very happy. He has certainly been as you'd imagine playing a very full part in the programme. Apart from his knowledge and ability to drag out the appropriate references at a moment's notice, he has been looking after our oxygen measurements and working up the surface currents from the ship's navigation as well as updating the charts with the net stations. He's always up and about when a station's coming in, day or night. I guess he's a bit tired but I believe, fit.

The sub-zero temperature led to some problems - the diesel fuel in the crane froze up and there were one or two anxious moments with the nets out and the crane stuck. However the engineers as indeed have all the officers been a marvellous help. In this case they had the 4th engineer sitting under the crane

warming up the filters with a heater. The pumps for the compressors are very conveniently sited against the bulkhead so they froze up too. Plenty of resource has been shown - the main change over valve for the engine cooling water disintegrated to a very sorry state so the engineers with Roy Wild helping turned up a very superior new one. The deck officers too have been ever helpful.

This has, I think, been the longest leg the ship has done but there has been little in the way of 'channels' and time has gone quite quickly. Mind you its quite attractive to see bergs en masse for the first time. Water interestingly has not been a problem. The evaporator has been used every day to partially top up the fresh water tanks and although there has been some concern about the colour on occasion, it has been quite drinkable.

It's nice to report the ship well found - Arthur and Roger have been invaluable (indispensable). I think the majority of odds and ends we want can be locally purchased apart from some crane spares perhaps.

XBTs performed well as far as the Antarctic Convergence. We were hoping to use them to detect the temperature minimum south of the convergence but I suspect the low temperature didn't do the insulation any good and we had to abandon them.

Perhaps John Gould will let me know via Arthur if any more XBTs are being shipped out.

We towed the magnetometer for longish distances on passage out but it started getting noisy with suspected cable leaks prior to what was the most interesting region across the mid ocean ridge. We only have one cable on board - I think it's an RVS one (tell David).

The spliced together (talurit) main warp has been satisfactory. I imagine it will do until the ship gets home (so long as people remember to let the talurit through the gates!).

Brian McCartney will be delighted to know (as will Gwynn (sic)) that Chris has been getting reproducible (but offset) results from the density equipment. You will know that the FGGE buoy xmitters are working and give you our daily positions.

The next leg is heavily committed to mooring recovery, FGGE buoys and a 48 hour net station. One really begins to appreciate distance when working here. I've started this letter on Monday as we head for home after crossing the convergence and we won't be back in Cape Town until Friday or Saturday!

We're all well and looking forward to a few days in Cape Town. When I say all well, before we left I bruised my ribs I thought. It turned out that I must have cracked one or two so I've been doing my best not to sneeze or cough. I'm glad I gave up smoking.

I suspect there will be news from home waiting in Cape Town so I'll look forward to hearing that all progresses well for the lab. I expect you'll pass this around John and Brian and company.

James

Arrival at Cape Town

Readers who sailed on *Discovery* are very likely to have their own fond memories of arriving in port after weeks at sea. Was it ever really true that the engineers somehow managed to get that little extra effort from the engines on the final run into port? Whether true or not, it was not unusual to arrive as day broke. Cruise 100 was no different, except perhaps for the unique beauty of the combination of the silhouette of Table Mountain, the early morning sun, the cloudscape and the calm sea. Forty years on those memories live on.

Post Script

And so we arrived back in Cape Town. What was left of our gear was off-loaded and replaced by GLORIA. Most of the scientists went home but the IT group (Theresa and Martin Beney), together with Peter Rowan and many of the officers and crew, stayed on to sail into the Indian Ocean. In terms of science, Cruise 100 was a glorious failure! The moorings were lost, we couldn't catch krill, and the biological samples were never worked up, but in other ways Cruise 100 was extraordinary. The stories and photographs gathered here reflect the close-knit community that developed at sea, we worked hard and we partied hard. We even managed to stay upright most of the time despite the elements! All cruises depend upon people; we had some real stars, several of whom are sadly no longer with us. This trip down memory lane is as much for them as for those of us who can still remember.

Howard Roe



*Dawn as Discovery approached Cape Town at the end of Cruise 100 on 4 April 1979, a hot day with no wind lay ahead.
Picture by Peter Rowan*