

blue i'kenəmi

International Conference on
Aquatic resources and
blue economy

28-30 November 2019



AQUABE 2019

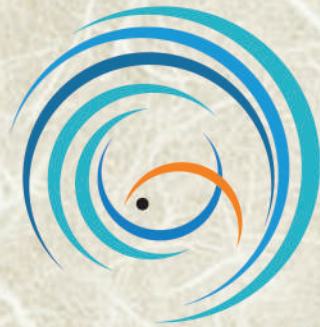
Souvenir



Kerala University of Fisheries and Ocean Studies (KUFOS)

Panangad, Kochi-682 506, Kerala, India

www.kufos.ac.in



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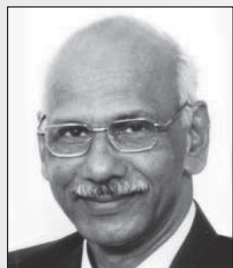
ANTARCTICA EXPERIENCES – AN EXCERPT FROM MY DIARY

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About the Author

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(I was one among the sixteen scientists and also the second scientist from Kerala to have participated in the Third Indian Antarctic Expedition from 3rd December 1983 to 29-03-1984; just four days short of four months. All through the Expedition, I was scribbling down my daily experiences in the diaries based on which I wrote a travelogue in Malayalam entitled “Antarcticayilekkoru SaahasikaYaatra” and got it published through D.C. Books, Kottayam. Following is an extract from my dairy which describes some of my exciting experiences on the icy continent which I hope the readers would cherish).

The first sunset in Antarctica

“.....There was another significance for 26th of January (the other being the Republic Day Of India which we celebrated with all its charm). It was on this day that we had the first sun set since we reached Antarctica, say on 27thDecember 1983. It happened just after mid night. It was not the large reddish sun that set in the horizon, but a glowing ball of fire. The first sun set lasted for two minutes only, that means the glowing sun dipped in the horizon and disappeared only to rise up after two minutes with all its glory. The sun set and sun rise was in the same place. The sun set is also an indication of the beginning of the winter in Antarctica. From now onwards the length of night will gradually increase and on the 21st of March there will be

equal day and equal night. From that day onwards the winter will be intensified. As days pass by the length of night will increase and by 10th June there will not be any sun rise. Simultaneously there will be a sudden drop in temperature also. The days of total darkness will continue for 20 days upto 10th June. As in the case of the first sun set, the first sun rise will also be for a few minutes. Gradually the length of the day will increase and by 21st of September, again, there will be equal day and equal night. Afterwards the day will dominate over the night and it will culminate in 24 hour day light which is the peak summer period in Antarctica, the time when the expeditions reach the continent.

The sun set in the early winter is a beautiful sight. As the sun goes down in the horizon, the sky will glow with different colours. If bits of clouds are there in the sky they could present an enchanting sight. Similarly the reddish rays from the setting sun when reflected on the pure white ice, will give a feeling as if molten gold is spread upto infinity. We will feel as if we were in an enchanting world. It is an inexplicable feeling one should see and enjoy.

I specially noticed the sun set on 7th February. The time was just before midnight. As I was standing at the bridge of the ship the sun was about to set. Far away in the horizon, I could see the peaks of the Wolthat mountains. In the meantime the sun started disappearing behind the mountain as a large red disc. In the initial days of sun set, the sun will not go vertically down, instead it would take a small bend downwards and would reappear a little away from its setting place. I found that as the sun was moving in an almost horizontal plane it passed behind each of the vertically standing peaks of the mountain; a hide and seek game for the sun! What a magnificent sight it was?

The winter begins

As the winter approaches the free water on the surface of the sea will start freezing into ice. The atmospheric temperature at this point will be -15°C . In the beginning the water turns into minute crystals which later aggregate and form into small discs of the size of coins and these discs grows larger and finally coalesce to form the floating platforms of sea ice. The sea ice formed each year may

have a thickness of 0.5 to 1.5 m thickness. The sea ice thus formed every winter may break up and dissolve during the subsequent summer. But about 15% may remain as such and grow more in size and thickness to form the multi-year ice. Such sea ice is always dangerous to the passing ships as it would be difficult to assess the thickness of the sea ice in such areas. Accidentally if a ships gets into such multiyear ice areas it won't be able to proceed forward or go backward and thus would get trapped and may be crushed due to the pressure from the ice. Such incidents have occurred in the past.

Among the penguins

One day in the last week of January, I was sitting in the mess hall scribbling my day's experiences in my diary. Lt. Cdr. N.P. Singh of the Indian Navy was also with me. As we talked, one idea struck us, that was of going to a place about four kilometres away from the ship where the Russians dumped some unwanted materials including solid cement and about 100 penguins made it into a Rookery (the dwelling place of penguins).

Wasting no time we started for the Rookery wearing enough warm clothes. I had taken my camera too. It was my habit to keep at least one camera always in one of the spacious pockets of the jacket. It required about one and a half hours to reach the place. Walking over the ice with ordinary boots is really an acrobatics. Unless extremely cautious one is sure to slip and fall down to the rocky ice and may get injured. I fell down once as I was walking



Members of the Third Indian Antarctic Expedition. The team consisted of 16 scientists and personnel from Army, Navy and Airforce altogether 81.



We reached Antarctica. The ship is moored to the sea ice. It took two more weeks for the ship to go close to the ice shelf.



looking somewhere. The fall was sudden and for a moment I was unable to do anything. Shri. Singh extended his hand, holding which I got up and continued walking. As such situations can happen any time in Antarctica, everybody was specially cautioned against going alone far away from the ship.

Our desire to see the penguins was fulfilled. Even as we went closer to the rookery, the birds hesitated to move away from their place. Instead they started resisting us from entering their abode by standing in front of us. The occasion gave me an opportunity to study the behavioural characteristics of the penguins. We went closer to the penguins and took some close up photographs. (In Antarctica clicking a camera is a difficult task. It would be painful to remove the hand protectives even for the time taken for focusing and clicking the camera. If it be a windy day the hand and fingers will become numb within seconds. Later, I tried to enter into the rookery and probably knowing my intention the birds became more alert and tried to keep me away from the rookery by standing in my front.

Determined to face any situation, I slowly entered the rookery and sat on a block of cement at an elevated place. The birds then came around and started pecking at my pants and jacket. Holding my hand folded inside the 'Mittan' (a thick woolen glove) I extended my hand towards them and the penguins pecked at it severely. Even under all these provocations, I remained there. Slowly the birds diverted their attention from me and started quarrelling each other probably scolding each other for not preventing

me from entering their home. Among them was a comparatively younger penguin. I went near to it and tried to touch. Suddenly one large bird – probably one of its parents – came and stood in between staring at me. I was surprised to see the parental care expressed, probably instinctively. Since we were already delayed we returned to the ship discussing all the way about the naughty way of behaviour of the penguins.

The days of 'Blizzards'

..... The weather once again worsened on 9th February. The sky became cloudy and the snowfall intensified. The wind speed rose to 80 km per hour. All set for an approaching 'blizzard'. (A blizzard is a high velocity cyclonic storm accompanied with heavy snow fall). The ship was removed from the shelf the previous day itself. All the four helicopters stopped their operations. Some men who came from the base camp for bath after a fortnight's stay there got held up in the ship.

The gale continued the next day also, the wind speed gaining further velocity. The snow fall minimized the distant vision at the base camp, so that no one was able to go out. All in the tents were evacuated and given shelter in the permanent station nearing completion.

In the afternoon, I made a satellite phone call to my house. (Unlike in the modern times outside continent contact was only through satellite). I deliberately did not speak of the storm striking outside for I feared that my wife would be scared to hear that. However, after the Expedition when I reached home she told me that she



The author in typical dress meant for the Antarctic climate.



The multi year ice floating over the sea - a dangerous area for the ships.



could clearly hear the whistling sound of the blizzard of that day.

By the evening of 11th February the storm calmed down a little. The wind velocity came down to 50-60 km per hour. The ship went once again alongside the shelf. The sight on the shelf was rather interesting. The two snow vehicles were almost covered with snow and with this one can imagine the quantum of snow fall for the last two days.

The ship could not remain alongside for a long time as the Captain of the ship noticed on the radar one huge iceberg slowly approaching towards the ship. Therefore the ship was taken out of the shelf once again.

A failed mission

One mountain ranges some distance away from Indian camp (but not as close as the Schirmachermountains which is about 75 km from the Indian station) is the Wohlthat mountains. In area and height it is larger than the Schirmachermountains. The geologists had a plan to go there and do some investigations. But the unfavourable weather conditions and the shortage of time did not give them an opportunity. A decision was taken to make use of the best opportunity to venture for a trip to the Wohlthatmountains. On the 17th of February a team of 26 persons got ready for the trip. It was also decided to get down at the Russian Camp at Schirmacher on the way. At 10 in the morning, *Prathap*, the Air Force helicopter was air borne with the team. On reaching the Schirmacher it was found that there was a heavy fog in the area which

prevented the landing of the helicopter and therefore the team returned without fulfilling the mission.

On the same day in the afternoon the Expedition Leader along with some engineers of the team went in one of the snow vehicles to a distant place for surveying a location for the construction of a run way for the jet air planes. A short while after their departure the weather became very bad with storm and snow fall. (Such is the situation in Antarctica where a sudden change could occur to the weather without any prior indications).

The team did not return to the ship until nine in the night. It was dark outside. The attempt to contact them over wireless also did not succeed. It was even thought of sending one search party. For some time the situation remained very tense. However, by quarter past nine information came from the base camp (15 km from the ship) that they had reached there and have proceeded to the ship along the marked route. Everybody made a sigh of relief.

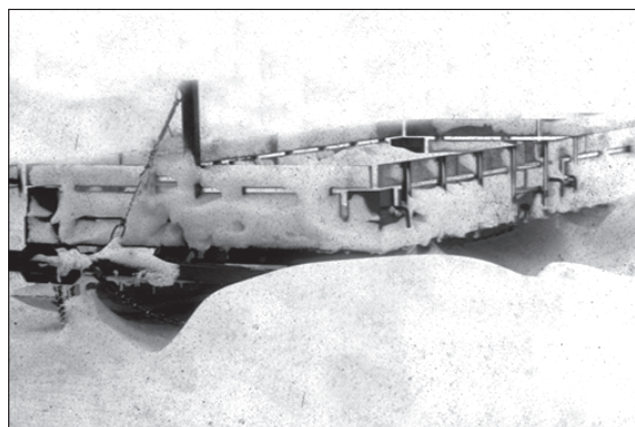
The ship caught in blizzard

25th February 1984. The weather remained calm. In the early morning at 05'O clock the lowest ever recorded temperature during the Expedition, that is -20°C was registered in the ship. I made all the preparations for a 24 hrs. sampling from the sea, one in every hour, starting from 21.00 hours. If I am lucky it would be the last set of sampling that I could do before leaving Antarctica.

I collected my hourly samples keeping awake throughout night. But while I was taking the sample scheduled for



The author with the penguins near the ship.



A trailer covered by snow during a blizzard.



03.00 AM I could notice an increase in wind velocity. This, of course, is not a good indication in Antarctica. A lightning of anxiety and fear flashed through my inner self, because of this wind, I thought for a while, ends up in a storm and my entire programme would be spoiled. Were I becoming pessimistic? My fear did not go wrong. The wind velocity kept on increasing and by 5.00 AM it had gained a speed of 60 km per hour. No matter if my equipment were lost, I was determined, and continued with my sampling. The whistling wind presented a fierce situation. At this time the ship was tied alongside the ice shelf. In spite of all these the morning was very bright. The rays of the rising sun when reflected against white crystal ice made the entire area a bowl of gold. Not even a fragment of cloud was in the sky. The barometric reading was sufficiently high. The weather chart received last night did not indicate formation of a cyclone anywhere near the ship. The next chart was scheduled for 10.00 AM. I continued with my sampling.

The meteorologists among us analyzed the situation carefully and according to them there was no possibility of a cyclone. The prevailing storm was interpreted to be catabatic wind from the land side which was the after effect of a bright sunny afternoon of the previous day. They predicted that as the atmosphere gets sufficiently heated up the wind would subside. This was duly conveyed to the captain of the ship and therefore he did not show any hurry to move the ship from the ice shelf. Normally when the wind speed exceeds 50 km per hour he used to give orders to move the ship away from the shelf or else the tossing ship would hit against the shelf and would get damaged.



In the helicopter. The author ready to fly to the Schirmacher mountains.

However, contrary to the predictions, by 7.00 AM the wind turned into a cyclonic storm which attained a velocity of 80 km per hour. Without waiting any more the captain ordered to untie the mooring ropes and free the ship. The wind speed kept on increasing.

Two of the crew members got down to the shelf. The four mooring ropes which were holding the ship to the shelf were cut off using axe. What else they could do? There was no time for untying the ropes. As the last rope was cut off the ship moved away as if thrown off by somebody.

The crews were left alone on the shelf. Somehow they were to be rescued or else they might freeze to death in the fierce storm. (According to the principle of wind-chill factor, the cold felt by a person will increase several fold than the thermometer reading as the wind speed increases). There was not even a tent on the shelf for them to take shelter or a sleeping bag to protect themselves. By this time the wind speed rose to 100 km per hour.

Somehow, the two men stranded on the shelf were to be brought back to the ship and that was the need of the hour. They were informed over walky talky not to worry about their life and that the captain was trying to retrieve them back to the ship. Also they were asked to stay where they were.

At this time the ship was maneuvered by Mr. Jartti Malmi, the Chief Officer of the ship, an expert navigator. He tried his level best to bring the ship alongside but the brute force of the wind spoiled all his attempts. After an hour's strenuous attempts he could bring the ship somewhat



The tents we erected at the Schirmacher mountains for our night stay.



towards the shelf using the ship's crane and the two men were thus got back to the ship. An hour's anxiety and tension were thus ended.

The gale was still increasing. The sky became covered by dark clouds. Soon started heavy snow fall. Darkness everywhere. A situation of fear and uncertainty. All my sampling programme failed miserably. Keeping awake throughout the night did not pay.

By 10.00 AM the weather chart sent from Molodeznaya (A Russian station) was received onboard ship on the facimile recorder and from the chart it was understood that a strong cyclone was developing around the ship; probably the strongest blizzard we had so far. The wind speed at 10.00 AM was 120 km per hour. At this time the radio officer informed that the satellite communication system was damaged due to strong wind which meant that we lost all our contact with the rest of the world. The VHF communication system with the base camp was already failed.

The leader along with some officials was with the wintering party at the base station. There was no means in the ship to know the condition there. We were anxious to know whether the buildings (two in number constructed during our Expedition) were surviving the blizzard and if not what was the fate of the men there.

Rolling and pitching, the ship sailed aimlessly through the wave mounting sea. All remained shut in the ship. It was impossible to venture outside even for a moment. Who could withstand the cyclone of 120 km per hour when outside temperature was -20°C .

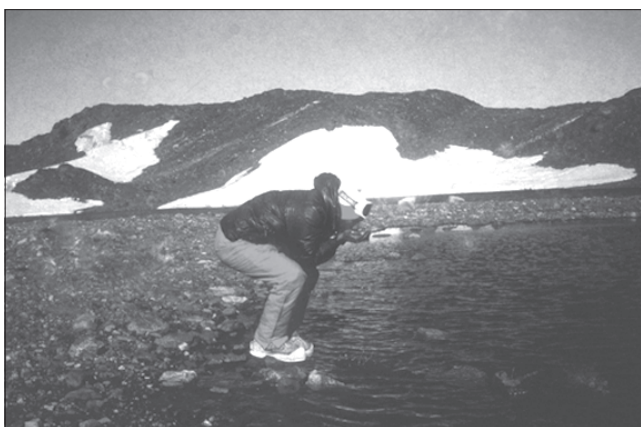
As the barometric pressure was lowering, the strength of the blizzard increased. Towards afternoon the wind attained its maximum speed of 140 km per hour. We were experiencing the real fury of the nature. The dark moments of uncertainty crawled in.

Even in this storm and cold the radio officer climbed up the mast betting his life and tried to make good the communication antenna. But all his efforts were in vain. We were a team of hopeless and desperate men roaming in the polar sea with all the communications cut off from the rest of the world. Everybody just sat in the mess hall and nobody had the desire to go to the cabin.

It was too late in the night. The wind speed kept on increasing. After dinner all went to bed half minded. But how one could get sleep in a ship being tossed by the cyclone. Whenever the ship tossed more than the usual we used to jump out of the cabins and waited for the danger alarm, if any. That sleepless night remains as a nightmare in my mind even today.

As I woke up in the morning of 27th February I heard outside the whistling sound of the mad wind. I hurried towards the bridge only to find the wind speed persisting at 120 km per hr. As a result of the snow fall throughout night the ship's deck and other open parts had snow of several inches thickness. The sky remained dark and cloudy. The snowfall continued unabated. By three in the afternoon the communication system was restored. Contacted the base camp via satellite immediately and ascertained that everything was normal there.

In a way the blizzard was a great blessing for it gave an opportunity to know whether the station could withstand



The author drinks water from a pool in the Schirmacher mountains. The water There is pure and non contaminated.



The first Indian station in Antarctica under construction - two storied buildings.



the fury of the nature. Excepting for an overall trebling which was pre-told by the manufacturers nothing else happened to the station.

On 28th February there was clear indication of improving the weather. The atmospheric pressure gradually increased and the wind speed came down dramatically. There was improvement in distant vision. The ship once again went alongside.

Immediately, one of the Chetak helicopters flew to the base camp and brought back the leader

and those went with him. All others came in a vehicle to the ship. By midnight once again the sea began to swell and the ship started hitting against the shelf. A drop in the barometric reading was observed. Was it an indication of another storm? Who could predict?

As an emergency measure the men of the wintering party were asked to disembark at five in the morning. Any one of the party remaining in the ship would complicate matters further because the ship was scheduled to sail back to India the next day, that is first of March 1984. Due to bad weather if the ship finds it difficult to go alongside the shelf, those in the winter team would be held up in the ship and would upset the whole programme which would be disastrous. During heavy storms helicopter flights would be disastrous.

1st March 1984. A bright morning dawned in the horizon. The dark clouds disappeared. There was absolutely no wind. Everybody was happy and cheerful. It is the day of our bidding farewell to the icy continent after a stay of 65 days.

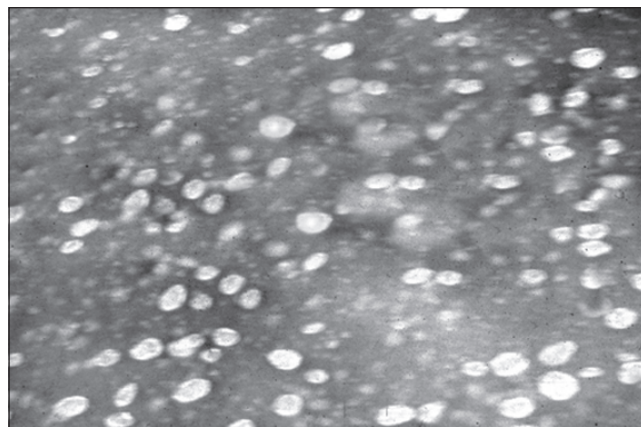
The ship went alongside the shelf at 12 in the noon. An urgent message was sent to the base station asking the members of the winter team to come to the ship for a formal farewell. By about 2.30 PM 10 out of the 12 member wintering team arrived in a snow vehicle. In no time a farewell party was arranged on the deck of the ship. Everybody including the crew of the ship assembled there. The parting scene was quite painful because since 3rd December 1983 the participants belonging to different States of India and also the Finnish crew members worked as a single team helping each other. Though the members of the wintering team appeared to be happy outwardly, the thoughts of their dear ones might have caused pain in their inner self. At the end of the party we wished them courage, wellbeing and nerve easing winter days and bade farewell by shaking hands and embracing each other.

All in the winter party got down from the ship. The ship sounded the siren thrice. It was the bugle of success in the frozen continent. The mooring ropes were untied one by one. Sharp at 3.30 PM the ship slowly moved off the shelf. The members of the summer team in the ship and those in the winter team on the shelf waved their hands and wished mutually until each team disappeared from the sight.

Even after the ship leaving the shelf one of the Chetak helicopters as an honour, took off from the deck and flew over the wintering team and bade them farewell once again and wished all success for them.



The wintering team on the ice shelf bids farewell to the summer team in the ship.



The winter begins. The sea water crystallizes to form 'idli' like discs which later coalesce to form platform like ice.

