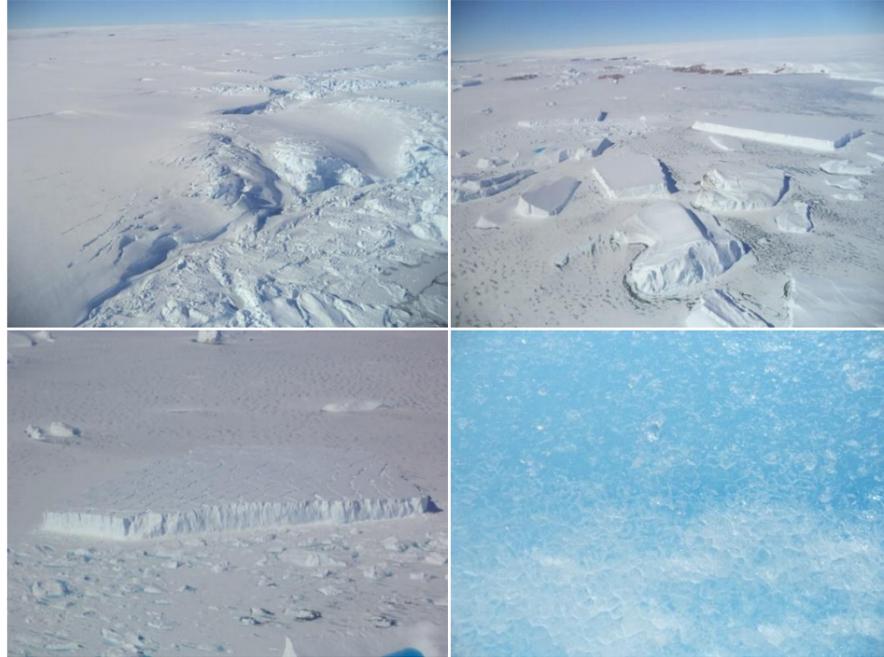


Discovery of Antarctica

Antarctica is derived from the Greek word Antarktiké, means "Opposite to north" i.e. opposite to the Arctic. It is situated within the Antarctic Circle and surrounded by Southern Ocean. James Cook discovered Antarctica when he was crossing the Antarctica Circle. The world's largest ocean current, the Antarctic circumpolar current circumvents the Antarctic continent.

About Antarctica

Antarctica is a coldest, driest place and fifth-largest continent in the world. Antarctica is about 5.5 million square miles (14.2 million square km) in area and almost completely (98%) covered with thick ice sheets.



Thick ice

The lowest temperature ever recorded in Antarctica was minus 89.4°C (minus 129°F). Antarctica has two seasons - summer and winter caused by the tilt of Earth's axis in relation to the sun. Antarctica has six months of day light in its summer and six months of darkness in winter.

Flora and Fauna of Antarctica

Variety of fresh water and saline lakes in Antarctica contain limited range of aquatic life. Due to very harsh extreme cold environmental conditions, the Antarctic flora is sparse and only Bacteria, Cyanoprokaryotes (Cyanobacteria), Algae, Bryophytes, Fungi and lichens can survive. Antarctica has no trees or bushes. Only flowering or higher plants *Deschampsia antarctica* É. Desv., a grass belonging to the family Poaceae and *Colobanthus quitensis* (Kunth) Bartl. of the family Caryophyllaceae reported from Antarctica. Antarctica is also home to Seals and Penguins.



Aerial view of Lake



Front view of Lake



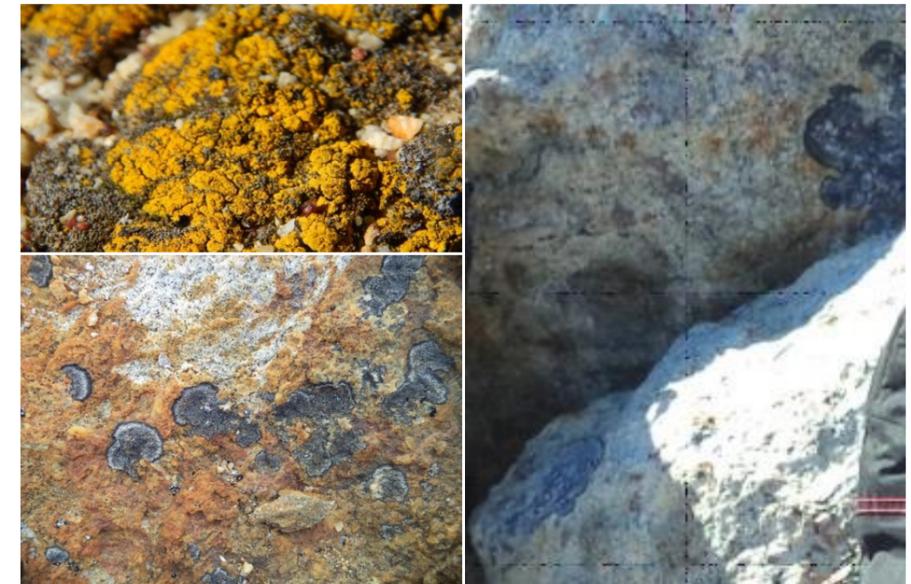
Frozen Lake with exquisite sky



Cyanoprokaryotes and Algal Diversity



Bryophyte Diversity



Lichen Diversity



Skua



Snow Petrel



Elephant Seal



Penguins

Indian Scientific Expedition to Antarctica

The Indian Antarctic Programme (IAP) is governed by the National Centre for Polar and Ocean Research (NCPOR) erstwhile National Centre for Antarctic and Ocean Research (NCAOR) an autonomous organisation of the Ministry of Earth Sciences, Government of India, leading major scientific research spanning from biological sciences to glaciological, meteorological and oceanographic research among other areas.

The first Indian scientific expedition to Antarctica was launched in 1981 and made a compelling presence in the harshest and the coldest continent. Botanical Survey of India has also been part of the Indian Scientific Expedition to Antarctica (ISEA).

Indian Research Station in Antarctica

Dakshin Gangotri

In 1983, India signed the Antarctic Treaty and established its first research base station in Antarctica i.e. Dakshin Gangotri, 2,500 kilometres far from the South Pole and decommissioned in 1990. As of today, the Maitri (1988) and Bharati (2012) research stations are fully operational.

Maitri

The second Indian Research Station Maitri (70°45'52" S & 11°44'03" E) was established in 1988 in an ice free, rocky area on the Schirmacher oasis. Indian Research Station Maitri serves as a gateway to one of the largest mountain chains in central Dronning Maud land, located south of Schirmacher. It is an inland station about 100 km from the shore at an elevation of about 50 meters above sea level.



Bharati

About 3000 Km east of Maitri, the new Indian Research Station 'Bharati' (69°24.41' S, 76°11.72' E) was established located between Thala Fjord & Quilty bay, east of Stornes Peninsula in Antarctica approximately at 35 meters above the sea level. The station with a very small footprint was commissioned on 18th March, 2012 to facilitate year-round scientific research by the Indian Antarctic programme.



Participation of Botanical Survey of India in Indian Scientific Expedition to Antarctica

BSI actively participated in 10 Indian Scientific Expedition to Antarctica (ISEA) since 1996 up to 2005 for Schirmacher Oasis - 2nd Indian Research Station i.e. Maitri and 3rd Indian Research Station: Bharati at Antarctica from 2013 to continuing.

Dr. D.K. Singh was the first Scientist from the Botanical Survey of India participated in XVI ISEA in 1996-97 to study the Bryophytes of Schirmacher Oasis followed by Dr. J.R. Sharma in 1997-98 (XVII ISEA, Fungi); Dr. R.K. Gupta in 1998-1999 (XVIII ISEA, Diatoms); Dr. Jagadish Lal in 1999-2000 (XIX ISEA, Bryophytes) and Dr. Palanisamy in 2003-2005 (XXIII and XXIV, Diatoms). Altogether 09 species of Bryophytes, 19 species of Fungi and 36 species of Diatoms were recorded from Schirmacher Oasis.

Dr. Pratibha Gupta is the first Women Scientist from the Botanical Survey of India and first time participated to explore Algal diversity of Larsemann Hills, Antarctica in 33rd ISEA in 2013-14. This expedition was conducted from the newly commissioned 'Bharati' Research Station. After that Dr. Devendra Singh participated in 35th ISEA in 2015-16 to study the Bryophytes of Larsemann Hills and Dr. Sukumar Bhakta in 37th & 38th ISEA in 2017-2019 to study the Ecology and taxonomy of psychrophilic benthic and lithic algal community from inland Antarctica. Altogether 126 species of Cyanoprokaryotes and Algae and 11 species of Bryophytes were recorded for the first time from Larsemann Hills, Antarctica.

Indian participation in scientific research in Antarctica is important to further expand the existing knowledge to study the unexplored areas and in various thrust areas such as Biodiversity, climate change, crustal evolution, environmental monitoring for the benefit of humanity.



Aurora

Cover page photo legends

Indian Research Station 'Bharati' (69°24.41' S, 76°11.72' E) at Larseman Hill, Antarctica

Penguins at their Natural Home Land Antarctica

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BOTANICAL SURVEY OF INDIA PARTICIPATION IN INDIAN SCIENTIFIC EXPEDITIONS TO ANTARCTICA



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