

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
RAJYA SABHA  
UNSTARRED QUESTION NO. 995  
TO BE ANSWERED ON TUESDAY, FEBRUARY 11, 2020**

**37th INDIAN OCEAN SCIENTIFIC EXPEDITION**

**995. SHRI K.J. ALPHONS:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether the 37th Indian Ocean Scientific Expedition to Antarctica has been successful; and
- (b) the major findings of the above expedition?

**ANSWER**

**MINISTER OF MINISTRY OF SCIENCE AND TECHNOLOGY AND  
MINISTRY OF EARTH SCIENCES  
(DR. HARSH VARDHAN)**

- (a) Yes Sir. The 37<sup>th</sup> Annual Indian Scientific expedition to Antarctica launched in the year 2017-18 was successfully completed.
- (b) During the 37<sup>th</sup> Indian Scientific Expedition to Antarctica, thirty-one scientific long-term and short-term scientific projects were carried out by sixteen institutes and universities. Major projects and findings of this expedition are as follows:
- A joint team of scientists from National Centre for Polar and Ocean Research (NCPOR) and Norwegian Polar Institute (NPI) conducted various geophysical, glaciological and meteorological measurements to understand past and present ice dynamics and mass balance of Nivlisen ice shelf and adjacent ice rises under the Indo-Norwegian collaborative project 'Mass Balance, Dynamics, and Climate of the Central Dronning Maud Land Coast, East Antarctica (MADICE)'. A 153 m long ice-core from the Leningradkollen ice rise was retrieved to examine the past climate and the link to the oceanic processes in the past millennia.
  - Scientists from National Institute of High Security Animal Diseases (NIHSAD) of Indian Council of Agriculture Research (ICAR) investigated animal metaviromes by studying the fecal samples of Weddell Seal, Adelie penguin and South Polar Skuva as well as from ornithogenic soil of Penguin rookery. Diversity and abundance analysis revealed the presence of 416, 584, 550 and 727 different viruses across 41, 57, 55 and 60 different virus families in fecal metavirome of Adelie penguins, Weddell seal, South polar skuva and ornithogenic soil, respectively.

- **Botanical Survey of India (BSI) collected over 155 algal samples for psychrophilic Litholic Algal Community analysis and physico-chemical parameters, diversity and species composition in relation to their habitat were studied.**
- **A Scientific team of Wildlife Institute of India (WII) established >250 nest plots for long term monitoring of wildlife and its habitats in Antarctica. The team carried out nest monitoring using motion sensing camera along with genetic monitoring of snow petrels using mitochondrial DNA sequencing.**
- **Bathymetric charting of the Prydz Bay area was done by National Hydrographic Office (NHO) and the Chart 901 for Quilty Bay and Thala Fjord (Off Bharati Station in Larsemann Hills) is published.**
- **National Geophysical Research Institute (NGRI) established a seismological observatory at Bharati to monitor seismicity and to investigate crustal structure and ice quakes.**
- **National Remote Sensing Centre (NRSC) of Indian Space Research Organisation (ISRO) successfully installed and commissioned an additional antenna for augmentation of Data Reception System (DRS) and Data Communication System (DCS).**

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