(c) whether Government propose to set up a fact finding committee to look into this state of affairs with vested interests playing havoc ?

THE MINISTER OF STATE IN THE DEPARTMEMTS OF SCIENCE AND TECHNOLOGY ATOMIC ENERGY, SPACE, ELECTRONICS AND OCEAN DEVELOPMENT (SHRI SHIVRAJ V. PATIL) : (a) A Unit with a production capacity of 250 Kg of fuel oil per day by direct hydrogenation of coal has been set up at the Central Fuel Research Institute. Work on this unit was initiated in 1979 and has been intensified during the last two years. A target of six successful runs each of one month's duration has been set to be achieved in three years.

(b) The project has not been discontinued.

(c) No, Sir.

**Setting up of Environmental Appraisal Committee of Mining Projects**

10593. SHRI CHINTAMANI JENA : Will the PRIME MINISTER be pleased to state :

(a) whether an Environmental Appraisal Committee of Mining projects has been set up in the country ;

(b) if so, the main functions of the said Committee ;

(c) the names of the projects which were taken by the Committee and particularly in Orissa under the scheme ; and

(d) the recommendations made by the Committee to clear these projects from environment ?

THE DEPUTY MINISTER IN THE DEPARTMENT OF ENVIRONMENT (SHRI DIGVIJAY SINH) : (a) Yes, Sir.

(b) Main functions of this Committee are :

(i) to assess the potential environmental impact and suggest precautions & safeguards to eliminate, or at least minimise, adverse impact of new mining projects ;

(ii) to ensure effective implementation of suggested safeguards.

(c) Out of the 24 projects considered till date, 2 are from Orissa-Gandamardhan Bauxite Depost of BALCO & Panchpatmali Bauxite Mines of NALCO.

(d) Seven out of the 25 projects considered have been rejected and the other 18 recommended for provisional clearance. Main conditions imposed while provisionally approving the projects include :

(i) Preparation of a detailed Environmental Management Plan giving the current environmental status of the mining area, anticipated environmental impact on air, water & land, proposed measurs to control/mitigate adverse impacts and a phased plan for their implementation ;

(ii) Preparation of time-bound programme for overbuden removal, stacking and reuse for reclamation of the mined area ; and

(iii) Preparation of Master Plan for rehabilitation of affected population.

**Future Plan at Antarctica**

10594. SHRI NEELAOHITHDASAN NADAR : Will the PRIMIE MINISTER be pleased to state :

(a) the details of the latest available information regarding the studies conducted by India at Antarctica ; and

(b) the future action proposed by Government as far as Antarctica is concerned ?

THE MINISTER OF STATE IN THE DEPARTMENTS OF SCIENCE AND TECHNOLOGY, ATOMIC ENERGY, SPACE, ELECTRONICS AND OCEAN DEVELOPMENT (SHRI SHIVRAJ V. PATIL) : (a) A detailed report on the studies conducted during the 1983-84 expedition is given in the attached statement.

(b) The Fourth Indian expedition to Antarctsca will be organised towards the end of this year. Details regarding the scientific and other work to be undertaken during this expedition are being worked out.

**Statement**

*Report on Scientific Work Done During The Third Antarctic Expedition*

As per the preliminary report submitted by the leader of the Third Indian Expedition the following scientific work was done during the Third Expedition :

**Meteorology :**

Weather of Antarctic influence to a great extent the weather over the Indian sub-continent. A detailed study of the meteorological parameters over Antarctica and their correlation with the Indian weather would help in understanding the vagaries of Indian weather, particularly the behaviour of monsoons-which are so important for us. Meteorological parameters were monitored on board the ship, at the Base Camp and at the Schirmacher Will region, Many radio-sonde and omega-sonde were released during the expedition. Weather charts were regularly obtained from Molo and Pretoria and weather forecasts were made to help plan logistic operations. A permanent laboratory has been established at the Base Station for continuous monitoring of the meteorological parameters through the winters.

**Communication :**

Two satellite communication terminals of INMARSAT system have been installed, one at the Base Station 'Dakshin Gangotri' and the second in the nearby 'Portacabin' being the alternate camp. These systems provide telephone and telex link on a global basis. The system has been modified for Slow Scan TV transmission.

A number of radio-communication links, essential for the success of the expedition, were established. These included ship to base, snow vehicles to ship and base, mobile parties to ship and Base, Schirmacher Hills to ship and Base, ground to helicopters, Base station to India.

An amateur radio station was successfully operated through out the expedition and some 1400 contacts were made. These included several Indian cities, international contacts, and contacts with the other stations in Antarctica.

**Geology :**

A detailed geological map of the entire Schirmacher Hill region, some 35 sq Km area, has been prepared on 1 : 25000 scale. The dominant rock type of the area is high grade quartzo-feldspathic gneiss and its variants with intercalated metabasics. The details of structure, intrusives, etc. have been examined in detail. Tectonically, the rocks have suffered multiphase deformations with a prominent zone of shearing present along the entire range. In the western part of the range, sulphide mineralization occur in a 200 m thick band of rusty gneiss which is rich in base metal and graphite. A large collection of samples has been made for detailed laboratory studies. Samples collection was also carried out in the Wohlthot mountain region.

**Geophysical Surveys :**

Total intensity measurements of earths magnetic field were carried out at Schirmacher Hill region and on the ice shelf using a few Proton Precession Magnetometers. Necessary diurnal corrections were made. A total of 5 line kilometres at station interval of 6 m were covered over the interesting

geological contacts in the Schirmacher Hill region. The preliminary results correlate well with geological inferences of possible mineralization.

**Biology of Krill and Other Zooplanktons :**

The Antarctic seas are very rich in zooplank ton, particularly krill. krill is a very rich sourcen of protein and possibly the most easily exploitable Antarctic resource. D uring the expedition, zooplankton samp les for the study of distribution, abu ndance and biological studies were collected from the polynya. Additionally, several stations were set up on the north-bound transect from the Antarctic to Mauritius. Samples were collected at 3 depths witnin the euphotic zone and were analyzed for standard parameters. The studies would be helpful in ostimating the krill biomass values.

**Sea Bird Observations :**

During the course of expedition, the observations were made on sea birds of the southern ocean between Mauritius and divided into categories : the birds observed enroute and those found in Antarctica. In all, 30 species of birds belonging to 22 genera and seven families have been identified.

**Biological and Microbiological Studies**

*A. Schirmacher Oasis Fresh Water Systems :*

A preliminary survey was carried out on five fresh water systems in the above oasis. Using a rubber raft and standard oceanographic samplers, water at different depths was analysis for temperature, PH, Chlorophyll a and productivity in the water column using $NaH^{14}CO_3$. The fresh water systems in the Schirmacher Oasis are found to be highly productive.

*B. Coastal and Shelf Studies :*

Diurnal and seasonal variations with regard to phytoplankton activity in shelf waters were investigated. Chlorophyll A and primary productivity were studied routinely with the other parameters at several depths in 150 m water column.

*C. Oceanographic Studies :*

Fifteen stations were occupied on north-bound transect from Antarctica to Mauritius between $6^0$S and $3^0$S. Samples were collected at three depths withih the euphotic zone. A marked variation in Chlorophyll a and ATP Values across the two convergence zones has been found.

**Hydrochemical Studies :**

*D. Schirmacher Oasis Fresh Wate Lakes :*

Nutrient levels have been determined in two fresh water lakes to investigate the biological productivity of the lake.

*E. Oceanogrphic Studies :*

A hydrographic station was established in January 1984 off. Lazarev, the abandoned Soviet Station, and repeated in February. Water samples from standard depths down to 2000 m were collected. On board, analyses have been carried out for dissolved oxygen, PH, alkalinity, salinity, nitrite-N, Nitrate-N, phosphate-P and silicate-Si.

**Study on Ionized and Unionized Atmpsohere :**

Studies of ionospheric layer is extremely important for radio communication and has been continued from the first expedition. This time, a Riometer tuned to 20 MHz was used Additionally a microbarograph was used to measure surface wind pressure fluctuations. These experiments would be continued during the winter at the Base Station.

**Chemical Studies:**

Investigations of soil chemistry, vegetation and trace elements were conducted at the Schirmacher Hill region. Since the Antarctic climate is characterised by extreme cold and aridity, soils are formed under the

conditions of low precipitation and almost complete absence of higher plant life, Several soil, lichens and snow/ice samples have been collected for chemical studies and making comparisons with similar studies elsewhere.

**Isolation of Bacteria anc Fungi :**

Productive lake sites and soil samples assayed for microbial flora indicated the presenee of rich microbial population. Plates grown in Schirmacher Hill region were used for further isolation. Around one thousand morphologically distinct coloies are being taken for further purification in the laboratory. A well equipped biological laboratory has been set up at the base Station and work would continue during the winter months.

**अखबारी कागज का उत्पादन**

10595. **श्री छोटू भाई गामित : क्या उद्योग** मन्त्री यह बताने की कृपा करेंगे कि :

(क) देश में पिछले तीन वर्षों के दौरान अखबारी कागज का उत्पादन बढ़ाने के लिए क्या उपाय किए हैं;

(ख) पिछले तीन वर्षों के दौरान अखबारी कागज उत्पादन क्षमता में कितनी वृद्धि हुई है; और

(ग) अखबारी कागज के आयात में कितनी विदेशी मुद्रा खर्च हुई हैं ?

**उद्योग मन्त्रालय में राज्य मन्त्री (श्री पट्टाभि रामा राव** : (क) मैसूर पेपर मिल्स को अखबारी कागज की परियोजनाओं और हिन्दुस्तान न्यूजप्रिंट लि. ने क्रमश: 75,000 और 80,000 मी. टन वार्षिक क्षमता में क्रमश: वर्ष 1981-82 से वाणिज्यिक उत्पादन प्रारम्भ कर दिया है। तमिलनाडू न्यूजप्रिंट एण्ड पेपर्स की अखबारी कागज की परियोजना के कार्यान्वयन में काफी प्रगति हो चुकी है और इसके 1984-85 में चालू हो जाने की आशा है। अखबारी कागज के निर्माण के लिए एकक स्थापित करने हेतु विभिन्न उद्यमियों को स्वीकृति-पत्र भी जारी किए गए हैं।

(ख) पिछले तीन वर्षों के दौरान अखबारी कागज की क्षमता और उत्पादन नीचे दिखाई गई हैं :-

| एकक का नाम | क्षमता | मी. टन में उत्पादन | | |
|---|---|---|---|---|
| | (मी. टन वार्षिक) | 1981-82 | 1982-83 | 1983-84 |
| नेपा मिल्स | 67,500 | 55,020 | 57,310 | 58,315 |
| मैसूर पेपर मिल्स | 75,000 | 9,280 | 35,800 | 53,906 |
| हिन्दुस्तान न्यूजप्रिंट लि. | 80,000 | — | 25,800 | 64,117 |
| | | 64,300 | 1,18,910 | 1,76,338 |