

## Notes and News

### THE INTERNATIONAL INDIAN OCEAN EXPEDITION

(i) *Indian Programme—I. N. S. Kistna*—It has been decided to take aerological ascents, i.e., pibal and radiosonde ascents aboard the *I.N.S. Kistna* as forming part of the Indian Programme relating to Meteorology of I.I.O.E. Arrangements are being made for the deputation of meteorological personnel to the ship for carrying out the work.

(ii) *Training Programme—Shri C. P. Rao*, Asstt. Meteorologist left Bangalore for Djakarta on 6 July 1962 for training aboard the Russian Research Vessel "VITYAZ", in connection with Indian participation in the International Indian Ocean Expedition.

(iii) *Scientific Director of U. S. Programme in Meteorology*—Professor C. S. Ramage, Scientific Director for Meteorology for SCOR and of the U.S. Meteorology Programme for the I.I.O.E. arrived in India on 14 August 1962 and has set up his office at the Regional Meteorological Centre, Colaba, Bombay, where the International Met. Centre for the International Indian Ocean Expedition is to be located.

(iv) *INCOR Meetings etc*—A meeting of the Indian National Committee of Oceanic Research Working Group on Physical Meteorology and Oceanography under the Chairmanship of Dr. K. R. Ramanathan was held on 28 June 1962 at Bombay and was attended by Shri C. Ramaswamy, Deputy Director General of Observatories, who is a member of this Working Group.

Shri C. Ramaswamy also attended a meeting of the Selection Committee at Bombay on 27 June 1962 for the appointment of

Research Fellow in various disciplines in connection with the Indian Ocean Expedition.

### THIRD SESSION OF THE COMMISSION FOR AGRICULTURAL METEOROLOGY OF THE WORLD METEOROLOGICAL ORGANISATION

The Third Session of the World Meteorological Organisation Commission for Agricultural Meteorology was held at Toronto (Canada) from 9 to 27 July 1962. Shri A. K. Mallik, Deputy Director General of Observatories represented India in the Session.

### REGIONAL ASSOCIATION II (ASIA) OF THE WORLD METEOROLOGICAL ORGANISATION

The Third Session of the Regional Association for Asia of the World Meteorological Organisation is scheduled to be held at Bangkok (Thailand) from 18 to 30 October 1962. Simultaneously the RA-II Working Group on Meteorological Telecommunications will also meet at a separate session from 18 to 26 October 1962.

### INTERNATIONAL METEOROLOGICAL PRIZE

The Seventh International Meteorological Prize for 1962 has been awarded to Dr. A. Angstrom, former Director, Swedish Meteorological and Hydrological Institute, for outstanding work in meteorology and international collaboration in meteorology. Dr. Angstrom's contribution to meteorology, particularly in the field of solar and atmospheric radiation is well-known. He has participated in various meetings of the International Meteorological Organisation, the World Meteorological Organisation and

the International Union of Geodesy and Geophysics.

The six earlier recipients of the prize are—Dr. Hesselberg (1956), Prof. C. G. Rossby (1957), Dr. E. Gold (1958), Dr. J. Bjerknes (1959), Dr. J. Van Miegham (1960) and Dr. K. R. Ramanathan (1961).

#### INDIAN NATIONAL COMMITTEE FOR SPACE RESEARCH (INCOSPAR)

The Third Meeting of the Indian National Committee for Space Research was held on 16 August 1962 at the Tata Institute of Fundamental Research, Bombay. Shri P. R. Krishna Rao, Director General of Observatories, along with Dr. P. R. Pisharoty, Director, Colaba and Alibag Observatories and Dr. M. K. Vainu Bappu, Director, Kodaikanal Observatory attended the above meeting as members of the Committee.

#### PLANNING COMMISSION—COMMITTEE ON NATURAL RESOURCES

Shri P. R. Krishna Rao, Director General of Observatories attended the Fourth Meeting of the "Technical Committee on Water" of the Committee on Natural Resources of the Planning Commission held at New Delhi on 31 August 1962.

#### THIRD TECHNICAL CONFERENCE ON HURRICANES AND TROPICAL METEOROLOGY

The Third Technical Conference on Hurricanes and Tropical Meteorology to be organised by the U.S. Weather Bureau is scheduled to be held in Mexico City from 6 to 12 June 1963. Besides general sessions, the Conference plans to hold technical sessions on important topics, a few of which are mentioned below—

Hurricane Structure, Hurricane Genesis, and Hurricane Forecasting.

Dr. P. Koteswaram, Director, Aviation Services, has been invited to participate in the Conference as Chairman of one of the sessions.

#### GEOPHYSICS RESEARCH BOARD

Shri P. R. Krishna Rao, Director General of Observatories, Dr. P. R. Pisharoty, Director, Colaba and Alibag Observatories, and Dr. A. N. Tandon, Director, Seismology, attended the first meeting of the Geophysics Research Board of the Council of Scientific and Industrial Research, New Delhi, held at Hyderabad on 10 July 1962.

Shri P. R. Krishna Rao, Director General of Observatories has been nominated by the Ministry of Scientific Research and Cultural Affairs on the recommendation of the Geophysics Research Board as the National Correspondent for Meteorology for the International Association of Meteorology of the IUGG.

#### HYDROGRAPHIC SURVEY COMMITTEE OF THE NATIONAL HARBOUR BOARD

Shri C. Ramaswamy, Deputy Director General of Observatories attended a meeting of the sub-committee of the Hydrographic Survey Committee of the National Harbour Board at New Delhi on 26 July 1962.

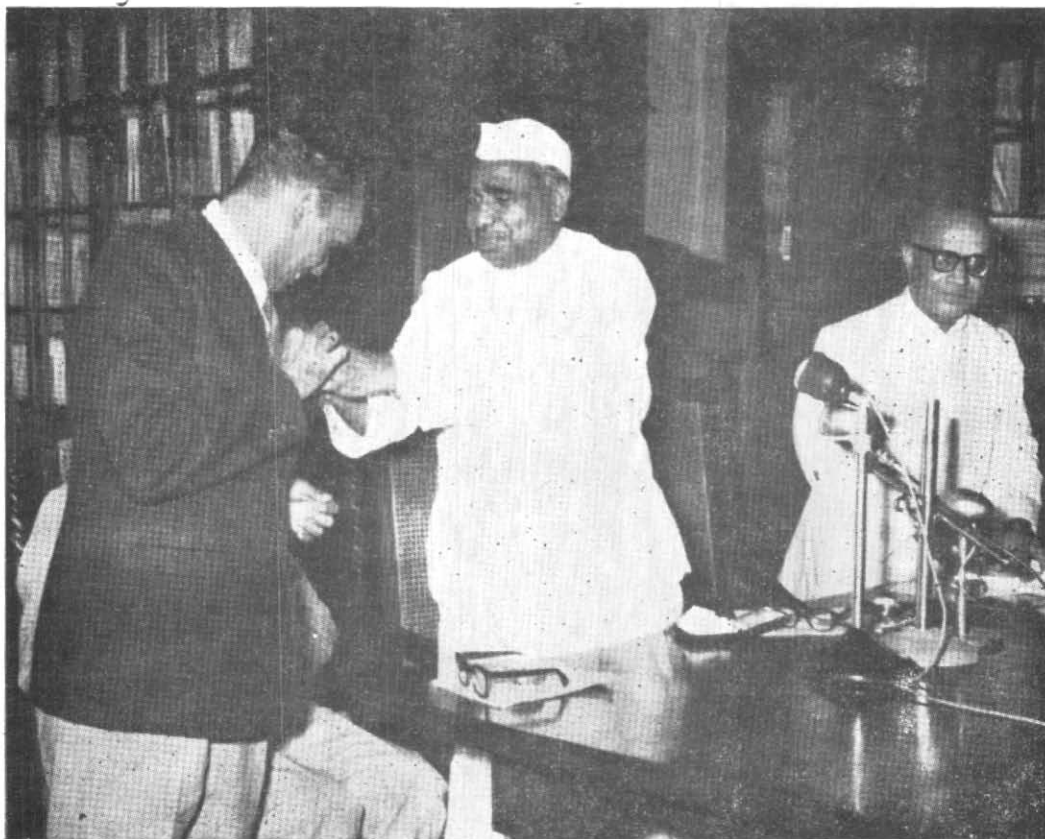
#### TRITIUM CONTENT OF RAIN WATER

The Tata Institute of Fundamental Research, Bombay, has embarked on a scheme for estimation of Tritium Content of Rain Water for study of ground water movement in India. Arrangements have been made at 15 departmental observatories for collection and despatch of rain water samples to that institute.

#### INDIA METEOROLOGICAL DEPARTMENT DIRECTORS' CONFERENCE

On 10 August 1962, Shri Jagjivan Ram, Minister for Transport and Communications inaugurated the Directors' Conference held at Poona from 10 to 18 August 1962. Shri M. M. Phillip, Secretary, Deptt. of Communications, Ministry of Transport and Communications also attended. The Conference discussed a number of important subjects, both administrative and technical, of which

## IJMG AWARD



Shri Jagjivan Ram, Minister for Transport and Communications (centre) pinning the IJMG Medal to Dr. M. V. Sivaramakrishnan, Meteorologist (left); Shri P. R. Krishna Rao, Director General of Observatories, is on the right

special mention may be made of the establishment of the Institute for Tropical Meteorology and its programme of research work; Meteorology Programme of the International Indian Ocean Expedition; re-organisation of the department and the review of the weather service to community project centres, farmers and irrigation authorities. The Conference recommended the centralisation under the aegis of the India Meteorological Department of the vast rain registering organisation maintained by the various State Governments. The first Indian Journal of Meteorology and Geophysics award of a Gold Medal was presented by the Minister to Dr. M. V. Sivaramakrishnan, Meteorologist, for his paper on *The origin of Electric charge carried by Thunderstorm Rain in the Tropics* published in Vol. 12 No. 3 of this journal (picture on opposite page).

#### KODAIKANAL ASTROPHYSICAL OBSERVATORY

The Kodaikanal Observatory has been recognised as a research centre for the Ph. D. degree in the Faculty of Science for the M.Sc. graduates of the Andhra University.

#### INDIAN METEOROLOGICAL SOCIETY

Dr. A. K. Ramdas, Department of Physics, Purdue University, U.S.A. spoke on "Semi-Conductors" on 1 September 1962.

Dr. Kitaoka, Chief, Aerological Division, Japan Meteorological Agency gave a talk on "Stratospheric Circulations and the Aleutian High" on 4 September 1962.

#### CERTIFICATE OF MERIT TO VOLUNTARY OBSERVING SHIPS

Details of the recipients of "Excellent Awards" for outstanding meteorological work during the year 1960-61 have appeared on p. 268 of April 1962 issue of this journal.

In addition to the "Excellent Awards" made to the individual officers of ships, it has since been decided to issue a 'Certificate of Merit' to all ships whose meteorological work is commendable during the award year.

The following 16 ships of the Voluntary Observing Fleet of the India Meteorological Department have been given the 'Certificates of Merit' for the year 1960-61 —

- S. S. *Rajula* (B. I. S. N. Co. Ltd.)
- S. S. *State of Bombay* (The Shipping Corporation of India)
- S. S. *Mozaffari* (The Mougall Line Ltd.)
- S. S. *Amra* (B.I. S. N. Co. Ltd.)
- M. V. *Jaladharna* (The Scindia Steam Navigation Co. Ltd.)
- S. S. *Mahadevi* (Asiatic Steam Navigation Co. Ltd.)
- S. S. *Mohammedi* (The Mougall Line Ltd.)
- S. S. *Kampala* (B. I. S. N. Co. Ltd.)
- S. S. *Jag Rani* (The Great Eastern Shipping Co. Ltd.)
- S. S. *Bharatrani* (The Bharat Line Ltd.)
- S. S. *Indian Reliance* (India Steamship Co. Ltd.)
- M. V. *Jalajawahar* (The Scindia Steam Navigation Co. Ltd.)
- S. S. *Umaria* (B. I. S. N. Co. Ltd.)
- M. V. *Vishvaprabha* (The Shipping Corporation of India)
- S. S. *Bharatmitra* (The Bharat Line Ltd.)
- S. S. *Bharatvijaya* (The Bharat Line Ltd.)

#### SFERICS STATION AT NAGPUR

An Atmospheric Direction Finding equipment was installed at Nagpur and the station started functioning from 4 May 1962. This is the third Sferics station under the India Meteorological Department.

#### A SEVERE SQUALL AT GAUHATI

On the night of 4 May 1962 a severe squall occurred approximately at 2130 IST near Gauhati. On a stretch of 2 miles distance along the Assam Trunk Road of Gauhati University about a dozen telephone poles were twisted and fell on the ground. The weather radar showed a very bright cell to the north of the airport moving west to



Fig. 1

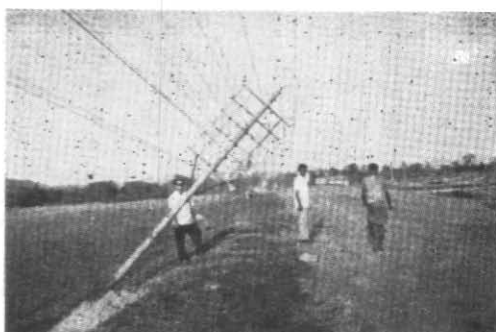


Fig. 2

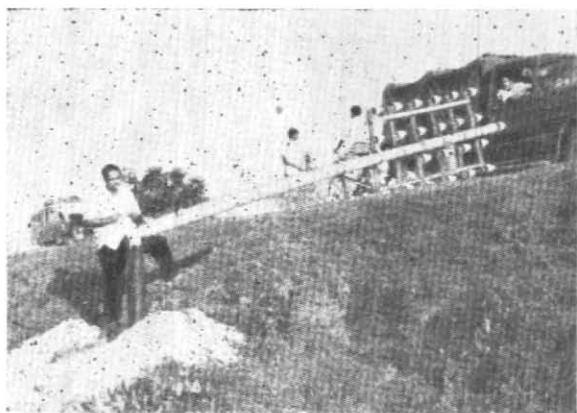
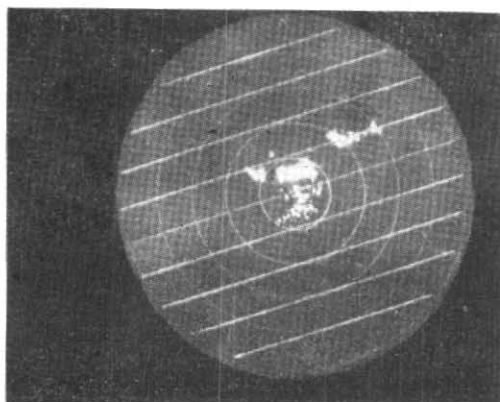


Fig. 3

Figs. 1-3. Damage caused by the severe squall on 4 May 1962

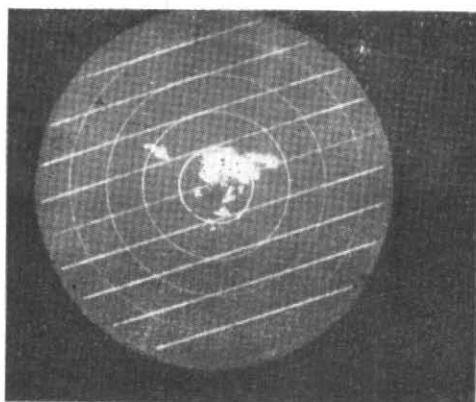


50 n.m.

2126 IST

10 n.m.

Fig. 4



25 n.m.

2134 IST

5 n.m.

Fig. 5

Figs. 4-5. Radar photographs of thunderstorm on 4 May 1962

east. As gathered from the local people the squall was not extensive. The affected area, as could be estimated from the damage caused and from interview with the local people, was two miles in length and about 200 to 300 yds in width. No squall was recorded at Gauhati airport as well as at Gauhati town.

A few photographs showing the damage and two radar photographs of the storm are reproduced in Figs. 1-5 (on opposite page).

### PHOSPHORESCENCE

#### I

*Vessel* : S.S. *Jalamanjari*  
*Captain* : V.P. Sharma  
*Observers* : V. P. Sharma and  
 C. L. Pinto  
*Voyage* : Aden to Bombay

1 April 1962, 1730-1800 GMT, Position—  
 13°20'N, 48°05'E.

A very brilliant white light appeared to be emitted from the bow wave along the ship's side to the stern. The above maintained its peak from about 1700-1800 GMT, after which the sea gradually assumed its normal colour; though patches of phosphorescence were observed at times. Shoals of porpoise left glittering trails and were distinctly illuminated when they came out of the water. The sea was calm and the wind light. Air Temp. 27.1°C, Sea Temp. 27.2°C, Pressure 1011.0 mb.

Two hours before phosphorescence was observed, a thick haze set in reducing the visibility ahead to about a mile [ship's course 077° (T)]. While on the western horizon where the sun was about to set, the visibility was very good. This condition of atmosphere lasted for about an hour, after which the visibility was good ahead also.

Phosphorescence was observed on the subsequent 2 days with the same phenomenon preceding it though not to such a marked extent.

#### II

*Vessel* : M. V. *Indian Triumph*  
*Captain* : J. J. Herbert  
*Observer* : S. K. Joshi  
*Voyage* : Aden to Madras

25 April 1962, 1730 GMT, Position—  
 09°00'N, 67°42'E

Very bright phosphorescence was observed at this time on either side of the ship at about 10 meters (30 ft) away from the shipside but not in the bow wave or the wake of the vessel. On exposure to powerful light source (Aldis lamp) complete sea was lit up very strongly as in moonlight in an area of about 100 meters all round the ship. Depth as charted 2609 fathoms. Bottom coral sea temp. 30°C. Later no phosphorescence was observed when the moon rose, neither any response seen to the artificial light source as before. Wind—ENE, light air; Visibility—Good; Clouds : *Cb* and large *Cu*, *Ac*; Bar. : 1009.8 mb, D. B. : 29.4°C; W.B. : 26.0°C.

#### III

*Vessel* : S. S. *Jalaprabha*  
*Captain* : K. C. Kamboj  
*Observer* : R. N. Verma, Second Officer  
*Voyage* : Bombay to Calcutta via Cochin  
 Position : Lat. 10°14'N, Long. 83°30'E.

On 13 July 1962 at 2105 GMT (0235 IST of 14th) large patches of phosphorescence were seen suddenly illuminating the horizon ahead and gave the effect of approaching a powerful headland lighthouse. Later such phenomena were also occurring around the ship and as close as half a mile away. The phosphorescence starting from a point spread radially within two or three seconds to a diameter of 1/2 to 3/4 mile, the central glow dying out as the ring spread, like an underwater 'explosion', each 'explosion' lasting from 8 to 15 seconds, all not being of the same size or luminosity. A number of them from 1/2 to 1 mile

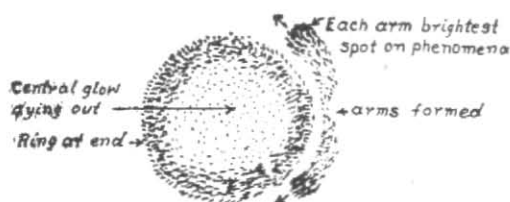


Fig. 1. Phosphorescence on 13 July 1962

from the ship were clearly seen and carefully noted. These showed arms developing outside the ring just before the glow from the original ring completely died (Fig. 1). The two arms starting as one glow divided into two separate glows racing around, and outside the dying ring to circle the ring, along the perimeter, in opposite direction, but died in effect before completing about a quarter way around each side. In all 11 'explosions' were seen.

At 0245 IST, V/L entered heavy phosphorescent sea and ship's wake was very clearly defined from the bow onwards and glowing for about a minute astern. There was no moonlight, the moon having set an hour earlier, though sky was clear of clouds. After entering the heavy phosphorescent sea, the swell was considerably abated, being WSW—4 feet and sea horses seen previously were missing, though there was

no change in wind direction or force. 'Explosions' could still be seen at 0255 IST. There was no more phosphorescence and at 0300 IST sea and swell were normal again as at previous observations at 0235 hrs. Colour of phosphorescence was bluish white. Air Temp.: 28.9°C; W. B. 27.2°C; Sea Temp. 28.9°C, Wind: W × S 5 kts; Bar. 1000.5 mb; Sea: 3/4 ft; Swell: WSW'ly 7 ft (before and after observation).

#### ABNORMAL SUPER-REFRACTION

Vessel : M. V. *Jaladhrur*

Captain : C. B. Sutherland

Observer : D. P. Agarwal

Voyage : Finland to India

11 April 1962, 2110 GMT, Position : 36°30'N, 07°20'W.

Abnormal super-refraction conditions observed, 25 miles range lights picked up at 45 miles. Ship continued on course 085° (T). Condition ceased for half an hour and came back in position 36°20'N and 06°59'W making 21 miles light visible at about 35 miles. Conditions on closer scrutiny found to exist in the northerly direction only. Condition ceased completely at 2400 GMT. Wind : Light air, Bar. : 1020.4 mb, D.B.: 19.0°C, W. B.: 16.5°C, Sea Temp.: 16.9°C.