Notes and News

REGIONAL ASSOCIATION II (ASIA) OF THE WMO

S. Basu, Director General of Observatories, has been elected President of the Regional Association II of the World Meteorological Organisation. This Regional Association is one of the six such Associations established by the WMO for furthering its aims and objects and co-ordination of activities in the field of International Meteorology within different specified geographical regions. The members of Regional Association II are—Burma, Ceylon, Hong Kong, India, Iraq, Japan, Pakistan, Thailand and U.S.S.R.

FIRST SESSION OF THE COMMISSION FOR AERONAUTICAL METEOROLOGY OF THE WMO AND THE FOURTH SESSION OF THE METEOROLOGICAL DIVISION OF ICAO

The First Session of the Commission for Aeronautical Meteorology of the WMO will be held at Montreal (Canada) commencing on 15 June 1954 simultaneously with the Fourth Session of the Meteorological Division of the ICAO. These two bodies work in close co-operation and they will hold a joint session for most of the items on the agenda in accordance with the procedure agreed to between the ICAO and the WMO.

Various important technical problems of present-day aviation, namely aircraft icing, turbulence, pressure pattern air navigation, meteorological services for high level operation, air borne weather radar etc, will be studied at the joint session. In addition, the preparation of Meteorological Standards and Recommended Practices and Meteorological Procedures for Air Navigation Services will be undertaken at the session.

S. N. Sen, Meteorologist, India Meteorological Department has been deputed to attend the session as India's delegate.

MEETING OF THE INDIAN NATIONAL COMMITTEE FOR THIRD INTERNATIONAL GEOPHYSICAL YEAR

A meeting of the Indian National Committee which has been constituted by the Government of India to organise the work of the Third International Geophysical Year (1957-58) was held at the National Physical Laboratory, New Delhi, on 20 April 1954 under the Chairmanship of K. S. Krishnan, F.R.S. The Committee examined the programme of work recommended by the Special Committee for the International Geophysical Year which consists of representatives of International Council of Scientific Unions, International Union of Geodesy and Geophysics, International Astronomical Union, International Radio Scientific Union, International Geographical Union and the World Meteorological Organisation. The Indian National Committee chalked out a provisional programme of work to be undertaken in India on the basis of the recommendations of the Special International Committee mentioned above.

ADVISORY COMMITTEE ON WEATHER CONTROL (USA)

It is seen from *Weatherwise*, Vol. 7, No. 1 (February 1954) that the Advisory Committee on Weather Control held its first meeting in Washington, D.C., on 18 December 1953 with all members present.

This committee has been given the job of finding out whether the U.S. Government should " experiment with, engage in, or regulate activities designed to control weather conditions."

Before making its recommendations, the Committee will have to determine, as best it can, what effect weather control activities, including rain-making, have had, or may have, on the weather.

Because of the controversy surrounding this subject, the Committee wishes now to enunciate several principles which will guide it in its study.

First, the Committee will base its conclusions on facts obtained and interpreted and not on any preconceived notions. Experiments to date have suggested that weather control may eventually provide benefits to agriculture, industry and government. However, the Committee will not now proceed under the assumption that weather control including rain-making, does " work " or does not " work ". It will aim to examine all of the evidence with scholarly care and scientific impartiality.

Second, the Committee recognizes the need for additional basic research dealing with processes related to rain, snow and cloud phenomena.

Third, the Committee will welcome, and will solicit, the information possessed by and the opinions held by all individuals and groups having an interest in the field of weather control. It will carefully consider all facts and opinion pertinent to its study.

Fourth, the Committee will not act in any way prejudicial to responsible individuals and concerns attempting to modify the weather.

METEOR

Vessel : S. S. Karanja

Captain : C. L. Broadhurst

Voyage : Karachi to Mombasa

Observer : S. D. Lester, 3rd Officer

Ship's position 23° 20'N, 67° 44'E

On 8 December 1943 at 1625 GMT a bright celestial body, probably a Meteor, was observed in the sky for a period of about 2 to 3 seconds. The body which gave off a bluish white light and left a thin vapour trail illuminated the sea and ship to the same extent as a full moon would on a clear night.

The body descended in a slight curve finally disappearing at an approximate bearing of 250°(T) and altitude of 38° in a bluish red flash.

The weather was fine with 2/8 medium cloud and a light northerly wind.

THE ECLIPSE OF 30 JUNE 1954

A team of scientists from the India Meteorological Department including Shri S. Basu, Director General of Observatories assembled at Phalodi, about 70 miles northwest of Jodhpur, with the required observational equipment to observe the total eclipse of the sun on 30 June 1954.

At Phalodi the moon's shadow first touched the sun's disc at about 1832 IST, the sun being totally covered at about 1926 IST. The totality lasted for 1 minute and 8 seconds. As the time of sunset was about 1939 IST the end of the eclipse was not visible.

The programme of observations by the team comprised of—

(1) Effect of rapid change in solar radiation on ionosphere by recording the strength of BBC signals,

(2) Changes in the " radio noise " in the range of 550 Kcs to 30 mcs,

(3) A continuous record of horizontal force of magnetic field using an Askania Field Magnetic Balance together with half hourly eye observations of intensity of Earth's magnetic field,

(4) Half hourly eye observations of Earth's magnetic field intensity,

(5) Measurements of atmospheric potential gradient and conductivity both at the surface and in the upper air,

(6) Dust content of the atmosphere and intensity of solar radiation,

(7) Measurement of other meteorological elements, and

(8) A 6-ft camera with a coelostat was also installed with the intention of photographing the solar corona. But although the eclipsed sun was not covered by clouds at the time of totality, owing to the low angle of the eclipsed sun (near about the time of sunset) the corona was not seen and could not be photographed ; a few photographs of the partial phases of the eclipsed sun were, however, taken.

Observations were begun on 18 June and continued till 8 July at the observation post so that eclipse effect on the various elements observed may be separable from the seasonal trend and diurnal variations of the elements.

The data are being analysed and will be published in due course.

STORM DETECTING RADAR AT DUM DUM AIRPORT

A Decca Storm-detecting radar, type 41 has been installed at Dum Dum airport on 25 June 1954. The radar scanner is on the roof of the Control Building at Dum Dum on a special steel-staging about 60 ft above the ground level and clears all obstructions at the aerodrome. The display unit together with the receiver and other control units are in the Meteorological Briefing room so as to facilitate direct observation of the P.P.I. scope by the pilots at the time of their briefing.

The Decca type 41 radar has a scanner system which comprises a parabolic aerial reflector of 14-ft aperture fed by a hoghorn and tilt mechanism. The scanner unit mounted on a water-proof base-casting containing the R. F. unit is placed over a large cast-iron pedestal. The radar has an operating frequency centred on 9375 Mc/s. It has a horizontal beam width of 0·75° and vertical beam width of 4°. The level of the side lobes is about 30 dbs below the main lobe. The scanner is capable of rotation along a vertical axis at 5-6 r.p.m. and can be tilted from an angle of depression of 2° to an angle of elevation of 12°. The tilt-mechanism is controlled remotely from near the receiver and the angle of tilt can directly be read on a meter. The R.F. unit incorporates the modulator, magnetron, klystron, mixer and the head amplifier. The magnetron delivers a pulse with the peak power of 30 K.W. Two pulse-lengths of 2·0 and 0·2 microseconds are employed for long range and short range storm-detection respectively. The radar has ranges of 10, 25, 50, 100, 150 and 250 nautical miles with range markers for 2, 5, 10, 20 and 50 nautical miles. The receiver is built on a convenient chassis which can be mounted on a wall. The receiver band-width can be easily switched from 10 Mc/s to 4 Mc/s with the change in the pulse length. The power unit consists of a motor alternator with a voltage regulator giving 80 volts at 1000 c/s. The input power supply is 230 volts, 50 cycles, single phase at 2·5 K.W. The display unit has a 12 inch diameter fluoride cathode-ray tube. In addition to the principal display unit near the receiver and the control panel one or two auxiliary display units can be installed as required.

Just after the completion of the installation of the radar at Dum Dum there was a good shower in the morning of 25 June 1954. A few radar pictures were taken and two of these at ranges on 25 and 50 miles are reproduced in Figs. 1 and 2 (p. 288). In these figures, the first number within brackets gives the range in miles, the second number the distance in miles between range markers and the third the tilt of the aerial in degrees. On this day the precipitation echoes could be seen upto a maximum distance of 60 miles. It is hoped that this range would increase considerably in case of a fully developed storm with high vertical structure and thus provide a valuable tool for short-range local warning to aircrafts.

AWARDS TO VOLUNTARY OBSERVING SHIPS

Nine ships whose work during the year 1952-53 was considered to be of outstanding quality were each presented by the India Meteorological Department with awards comprising of a mounted and inscribed alarm timepiece and a book ' Touching the Adventures ' edited by J. Lennox Kerr. The details of the ships are given on page 280. It may be mentioned that out of these ships *S. S. Rajula*, was a recepient of the award during the preceding two years, *viz.*, 1950-1951 and 1951-52, *S. S. Jalaganga* received the award for 1950-51, while *S .S. Bharatjal* and *S. S. Jehangir* had the award for 1951-52.

Ship	Owner/Agents	Captain(s)	Observing Officers	Radio Officers
S.S. Bharatjal	Bharat Line Ltd.	C. F. Morris G. E. Duffy	A. K. Modak M. A. Adam N. F. Kadir A. H. Lambay A. Ismail	J. Carneiro N.C. Engineer
S.S. Jalaganga	Scindia Steam Navigation Co., Ltd.	F. G. P. Mathews	J. L. Thomas Ved Sharma	J. R. Mugasetti G.B.V. Lobo
S.S. Jalaprakash	Scindia Steam Navigation Co., Ltd.	A. T. Goodwin T. E. M. Rozario J. Y. Kerr	P. A. Moos J.C. Joseph K.N. Rao I.D. Hyams M.D. Khatri V. K. Palsole D. K. Bhattacharya P. K. Malhotra A. Feiguiredo	K.P.A. Panikar B S. Harindar
S. S. Jehangir	Mogul Line Ltd.	H. Morini E.W. Richards	G. T. Edwards A. A. Nazareth S. Sufi E. Dawes C. Clayton	J. Brown
S.S. Maharaja	Asiatic Steam Navigation Co., Ltd.	A. W. C. Jolly	M. W. DeSilva P. I. Morgan D.R. Connors A. B. Roy O. M. Morris E. P. J. Costelino E. Conldiffe D. G. Barton Aung-Gyi I. G. Jolly	J. P. O'Harra J. Macdonald D. Mac Millan R.W.G. Townsend Rose
S.S. Mozaffari	Mogul Line Ltd.	J.W.E. Cochrane	F. Lynn F. Hanson R. J. Ward A. A. Nambiar C. Clayton R. G. Coutinho W. I. Shirrefs	G.K. Embley
S. S. Rajula	British India Steam Navigation Co., Ltd.	Jamieson F. Mears	Webb V. A. H. Iles Bennett Mande Kells C. W. Jenkins T. E. Kelso	R.E. Stewart P. Handerson L. Pye J. Evans
S. S. Santhia	British India Steam Navigation Co., Ltd.	J. W. Milne J. C. L. Hornor	D. A. C. Windle G. F. Bartley G. A. Brignall M. S. Gordon F. W. Perry J. E. Wills A. W. Lloyd Taylor	J. W. Hunter C.W.B. Stimpson
S. S. Subadar	Asiatic Steam Navigation Co., Ltd.	W. F. Munro	W. Alexandar B. C. Milligan T. Hirdmarch M. H. Major F. Ferdinands	J. E. Lyton

WEATHER, WINTER SEASON JANUARY-FEBRUARY 1954

Chief features—A good number of active western disturbances resulting in a moderate to large excess of rainfall in northwest India, Uttar Pradesh, Madhya Bharat and Vindhya Pradesh and (2) two cold spells during January.

January—The active western disturbance which lay over the Punjab(I) on the last day of the previous month moved away across the Punjab hills by the 1st morning. The secondary ' low ' over east Rajasthan and neighbourhood also moved eastnortheastwards and became unimportant over northeast Madhya Pradesh by the 2nd morning. These disturbances caused fairly widespread rain or snow in the hills of the Punjab(I) and of west Uttar Pradesh on the 1st and 2nd, and in Vindhya Pradesh and the plains of the Punjab(I) and of west Uttar Pradesh on the 1st, with local showers in east Uttar Pradesh on the 1st and 2nd.

Five disturbances, in addition to the above moved across the northern parts of the country during the month. Of these, two were quite active and are described below—

A western disturbance (3rd of the month) appeared over the south Punjab(P) on the 7th and moved away across the Punjab-Kumaon hills by the 10th evening. A secondary formed over Vindhya Pradesh and neighbourhood by the 9th morning and moved in a northeasterly direction across north Bihar, sub-Himalayan West Bengal and north Assam by the 12th. In association with these disturbances, fairly widespread thundershowers occurred in the Punjab-Kumaon hills on the 8th and 9th with widespread snowfall on the following two days. Local or fairly widespread thundershowers also occurred in Rajasthan and Madhya Bharat on the 8th, in the plains of the Punjab (I) and of northwest Uttar Pradesh between the 8th and 10th, in Vindhya Pradesh on the 9th and 10th, in west Madhya Pradesh on the 9th and in Bihar, east Uttar Pradesh and north Madhya Pradesh on the 10th. Local rain or snowfall was also reported from Jammu and Kashmir on the 8th and 9th. The cold northerly winds which swept over the country outside the south peninsula caused night temperatures to be markedly below normal in Gujarat, north Deccan (Desh), east Rajasthan, Madhya Bharat and the adjoining parts of west Madhya Pradesh between the 10th and 12th and in south Madhya Pradesh, Chota Nagpur and northwest Hyderabad on the 13th.

The fourth western disturbance of January appeared over west Rajasthan and neighbourhood on the 17th morning and moved away northeastwards across the north Punjab (I) by the 21st. It induced a secondary over Vindhya Pradesh on the 20th evening. The latter lay over Chota Nagpur on the 21st and passed away across Eastern Pakistan by the 22nd morning. These two disturbances caused fairly widespread rain and snow in the hills of the Punjab (I) and of west Uttar Pradesh between the 18th and 22nd, and local rain or snow in Jammu and Kashmir on the 19th. Local or fairly widespread thundershowers also occurred in east Uttar Pradesh and Chota Nagpur on the 21st and in sub-Himalayan West Bengal and Assam on the 22nd. In the wake of these disturbances, a cold wave affected northwest India, southwest Uttar Pradesh, the central parts of the country and Chota Nagpur on the 22nd and 23rd, it being severe over north Rajasthan on the 22nd when night temperatures there, were 15-17°F below normal. Bikaner recorded a minimum temperature of 28°F on 22nd and of 29°F on the next day.

Under the influence of low pressure waves from the east, fairly widespread rain or thundershowers occurred in Tamilnad and Travancore-Cochin between the 5th and 7th and again between 10th and 13th. Fairly widespread thundershowers also occurred in Malabar-south Kanara on the 7th and 11th and in Travancore-Cochin on the 26th.

February—Eight western disturbances affected the weather over north India during the month. Of these, two were feeble, three caused rain or snowfall mainly in the

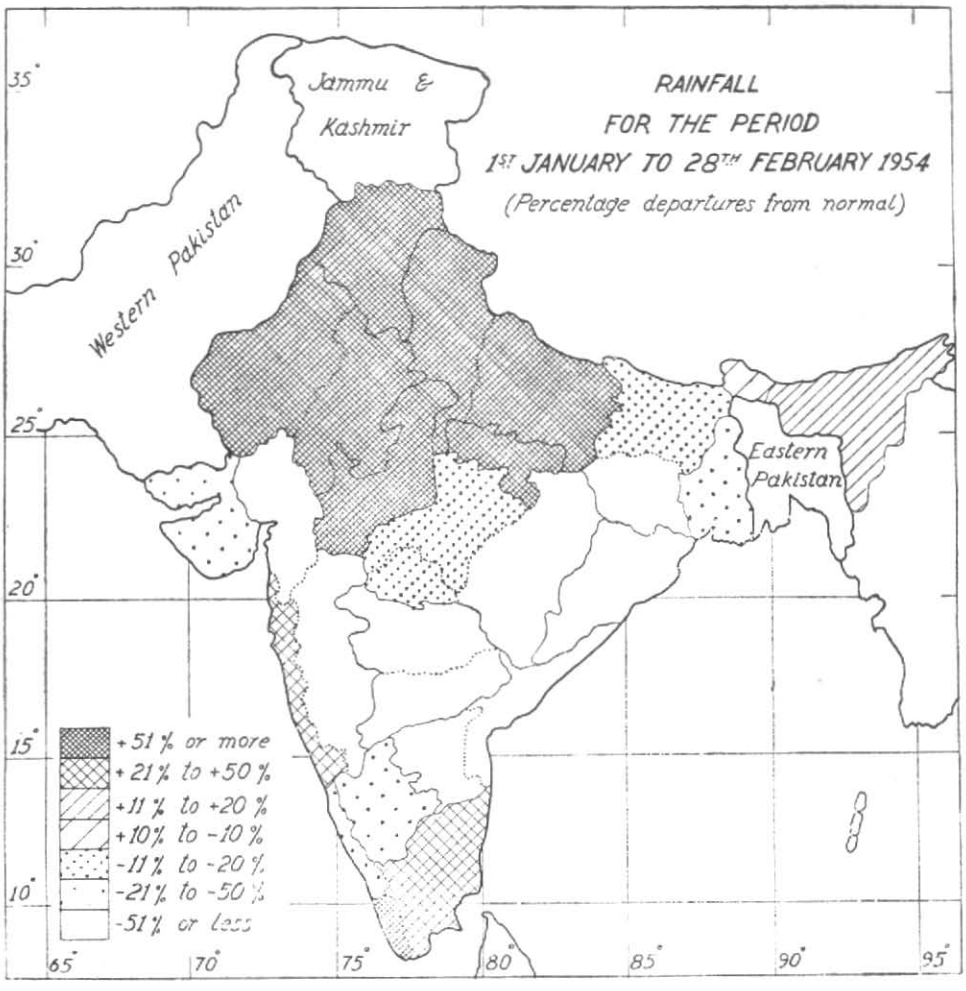
RAINFALL
FOR THE PERIOD
1ST JANUARY TO 28TH FEBRUARY 1954
(Percentage departures from normal)
Jammu &
Kashmir
Western Pakistan
Eastern
Pakistan
+51 % or more
+21 % to +50 %
+11 % to +20 %
+10 % to -10 %
-11 % to -20 %
-21 % to -50 %
-51 % or less
35°
30°
25°
20°
15°
10°
65°
70°
75°
80°
85°
90°
95°

Fig. 1

hills of west Uttar Pradesh and of the Punjab (I) and the remaining three, in association with their secondaries gave spells of rainy weather in the plains also. The following gives a description of the disturbances of the last category.

A western disturbance persisted over the northeast Arabian Sea and the adjoining areas between 30 January and 1 February. Thereafter, moving in a northnortheasterly direction, it lay over the Punjab(P) and neighbourhood on the 2nd and moved away across the extreme north of the country on the 3rd. Under its influence fairly widespread thundershowers occurred in the Punjab(I) on the 2nd, rainfall being locally heavy in the hills. Fairly widespread rain also occurred in the hills of the Punjab(I) on the 3rd, and in the hills of west Uttar Pradesh on the 2nd and 3rd, and local thundershowers in Saurashtra and Kutch on the 1st, in the plains of Uttar Pradesh on the 2nd, and in Vindhya Pradesh on the 2nd and 3rd. Local or fairly widespread rain accompanied with snowfall occurred in Kashmir between the 1st and 3rd.

Another western disturbance appeared over west Baluchistan on the 4th. Moving rapidly in a northeasterly direction, it passed away across the extreme north of the country by the 5th. A secondary developed over Saurashtra and Kutch and adjoining areas on the 4th morning. Taking a northnortheasterly course, it lay over the north Punjab(I) on the 5th morning and passed away across the Punjab Kumaon hills by the next morning. Under the influence of the two disturbances, thundershowers were fairly widespread in Madhya Bharat on the 4th, and in west Uttar Pradesh and the Punjab(I) on the 5th, the last named area having a few heavy falls on the day. Snow fell locally over the hills of west Uttar Pradesh and of the Punjab(I) on the 5th. Local thundershowers also occurred in Gujarat and the north Konkan on the 4th and in Rajasthan on the 5th.

Another western disturbance moved from Baluchistan to the Punjab(P) between the 17th and 19th and moved away eastwards across the Punjab hills by the 21st. A secondary low developed over south Madhya Bharat and adjoining southeast Rajasthan on the 19th. Taking an eastnortheasterly course, it lay over Chota Nagpur and neighbourhood on the 22nd and finally moved away across sub-Himalayan West Bengal by the next day. These disturbances caused local or fairly widespread thundershowers in the Punjab(I) and hills of west Uttar Pradesh between the 19th and 21st, in Vindhya Pradesh and the plains of Uttar Pradesh on the 20th and 21st, in Rajasthan, Madhya Bharat and northwest Madhya Pradesh on the 20th in Bihar on the 21st, in Chota Nagpur on the 22nd, and in sub-Himalayan West Bengal on the 22nd and 23rd. Local rain or snow was also reported from Jammu and Kashmir on the 19th and 20th.

Local thundershowers occurred in Travancore-Cochin on the 3rd and 23rd, in Assam between the 14th and 17th and on 25th, and in West Bengal on the 25th.

Generally mild winter conditions were experienced over north India, the central parts of the country and the adjoining areas of the peninsula, night temperatures in these areas being above normal on many days.

The rainfall distribution over the country during the period under review is shown in Fig. 1.