

Upper wind and radar cloud and precipitation observations were made at some stations.

A detailed description is given in the paper of the events associated with the south-eastward movement of a cold front on June 24 and 25, 1953. Charts are presented with isobars at  $\frac{1}{2}$ -mb. intervals, isotherms, winds and weather. They reveal the existence of small low- and high-pressure centres having diameters of tens of miles, often arranged in pairs of high and low centres called 'pressure couplets'. Tornadoses and very strong winds occurred near some of these couplets. Ahead of the cold front in the warm air the pressure-jump line was found along which pressure rose very sharply. The main cold front of the ordinary weather-map macro-scale analysis did not appear on the meso-scale as a continuous line separating the warm and cold air masses but as a frequently changing set of systems, though it could at times be identified as a continuous line of change of wind direction and concentration of isotherms. Some meso-systems were found to be arranged along the cold front rather like sea waves on a sloping beach.

The account is purely descriptive and no attempt is made to explain dynamically the weather experienced. Since the barographs and thermographs of the subsidiary stations were not periodically checked and the stations measured rainfall at 24-hr. intervals, special techniques for reducing their pressure and temperature observations to sea-level and obtaining hourly amounts of rain were devised using interpolation between the observations of the regular stations. The development of this valuable work will be watched with interest by all meteorologists.

## EARTHQUAKES DURING MARCH—SEPTEMBER 1956

**D**URING the period March to September 1956 inclusive there were forty-seven earthquakes in the world of magnitude 6 and greater. The greatest of these attained magnitude 8, and, as has already been reported in *Nature*, took place on July 9 with an epicentre in the Aegean Sea. It is reported that several towns were destroyed on the islands of Thira and Ios, and that forty-two people were killed. Two earthquakes attained magnitude  $7\frac{1}{2}$ . The first of these occurred on June 9 in Afghanistan. In the Kunhar valley several villages were buried under debris crashing from the mountains into the valley. In this valley one hundred and fifty people were killed and more than a thousand injured. In the Shaigan valley one hundred and sixty people were killed and more than a thousand injured. Many aftershocks occurred. The second earthquake of magnitude  $7\frac{1}{2}$  occurred on July 18 with an epicentre in the Banda Sea.

On July 21 an earthquake was experienced in western India from Rajkot to Bombay. Most damage was done at Anjar some 30 miles east-south-east of Bhuj, the capital of Kutch. More than a thousand buildings in Anjar, including the post and telegraph office, were destroyed. Landslides and other surface damage disrupted communications. More than a hundred people were killed and many more injured near Anjar. In and around Bachau also two hundred houses were wrecked. On July 16 an earthquake in central Burma caused major property damage at

Mandalay and Sagaing. Thirty people were killed. Earthquake damage is also reported on March 16 in southern Lebanon (*Nature*, 177, 560; 1956); March 31 in Hungary; April 19 in Spain and September 29 in Japan.

European earthquakes were experienced on March 24 in Switzerland; June 2 in Italy; June 10 in Austria; June 28 in Yugoslavia; June 30 in the Black Sea near Romania; August 1 in the Zollern Alps, and on August 16 near the south-west coast of Portugal. On March 16 an earthquake was felt with intensity 6 on the modified Mercalli scale in Galilee.

British earth tremors occurred on May 4, July 9, July 28, August 5 and August 23. The shock of May 4 was felt near Ipswich and heard at Bury St. Edmunds, Felixstowe and Framlingham. It was recorded at Kew, Durham, Paris, Rathfarnham (near Dublin) and Upsala (Sweden). From some of these records the observers at Kew determined the epicentre to be at  $52.1^{\circ}$  N.,  $01.6^{\circ}$  E., which is just off the coast near Ipswich. The initial time was 23h. 25m. 50s. G.M.T. The shock of July 9 was felt at Chester, Kelsall, Blacon and at Woolstanwood near Crewe. Mr. E. F. Baxter, of the University of Durham, determined the epicentre to be at  $33^{\circ} 10'$  N.,  $02^{\circ} 55'$  W., which is some four miles west of Chester. The initial time was 01h. 01m. 33s. G.M.T. The other three British shocks were near Tarbert in Argyll. The first was felt on July 28 at 21h. 40m. near Tarbert, and at Carse and Glenbranter between the head of Loch Eck and Loch Fyne. The second, on August 5 at 13h. 40m., is reported from Carse. The third, on August 23, was the greatest. It was felt over a wide area around Tarbert, including Carse, Clachan (a village in Kintyre, five miles from Carse), Whitehouse, Campbeltown, Rhu, Lochgilphead, Ardrishaig and Glenbranter. The Rev. R. E. Ingram, *S.J.*, is of the opinion that this was the earthquake which was recorded on the seismograms at Rathfarnham Castle near Dublin at 16h. 32m. 04s. G.M.T. Unfortunately the shock was not recorded at the British seismological observatories, since it was not of sufficient magnitude.

## PUBLISHING IN BRITAIN

**B**ROADSHEET No. 392, "Publishing and Book-selling" (Political and Economic Planning; 2s. 6d.), deals with publishing, bookselling, distribution and the present state of the market. The output of new titles has steadily risen since 1950 from 17,072 to 19,962 in 1955, of which 5,770 were reprints and new editions. Turnover has also steadily increased, from £37,158,652 to £46,270,953, of which 35.7 per cent is for export, compared with 30.7 per cent in 1950. Most of the business is in the hands of the 370 firms who are members of the Publishers' Association and are responsible for at least 90 per cent of the turnover, the largest output coming from H.M. Stationery Office, with 1,380 titles. Next come Collins (529); Oxford University Press (389); Hutchinson (364); Heinemann (266); Longmans (266); Macmillan (241); and Hodder and Stoughton (221).

It is difficult to get any idea of the true economic state of the publishing industry, for almost all the firms are private companies which do not publish their accounts. Printing and binding costs are now