

A large baking company in New York is saving approximately £100,000 a year by following weather predictions closely. When the weather is to be fine, about one-half of the firm's products are distributed in the city and one-half through small retail shops scattered through the suburbs. But when the weather is stormy, 75 per cent. is kept in the city or distributed at points close to suburban railway-stations. The company has discovered that when the weather gets bad enough, about one-half of its women customers in the suburbs will telephone their husbands in the city asking them to buy bread and other bakery products either before they get on the train or just after they leave it. Savings on unsold goods amount to the total mentioned.

The most important, and certainly the most sensational, advance in weather forecasting was claimed early this year by Dr. C. G. Abbot, United States weather physicist. After experiments lasting more than twenty-five years, Dr. Abbot believes that by a proper combination of observations on solar heat, air-mass movements, and local disturbances it is possible to predict weather at least two weeks ahead with almost perfect accuracy. Last year his system worked so well that he was able to forecast almost to a drop how much rain would fall in Washington and on what days. Dr. Abbot is confident that he has developed a workable system, and his predictions so far certainly prove his claim.

This explanation of the types and causes of New Zealand weather was written by Miss D. F. McLeod and is reprinted from the *Education Gazette*.

Cyclones and Anticyclones

An *anticyclone*, or high, is a high-pressure area in the atmosphere from which pressure decreases outwards in all directions. There is a tendency for air to move outwards from high-pressure centres towards low-pressure centres; but this is greatly modified by the rotation of the earth.

Consequently, in the atmosphere the winds blow parallel to the isobars instead

of across them, though, near the ground, surface friction causes the winds to blow across the isobars in a slightly slanting direction (at an angle of about 10° to 30°). Winds thus blow round the anticyclone in a counter-clockwise direction in the Southern Hemisphere (see Fig. 1). The anticyclones in our latitudes are often large enough to cover Australia. They generally bring fine weather, with a calm or light breeze such as land and sea breezes or mountain and valley winds near the centre. Although anticyclones in this area move eastwards, they may remain stationary for a week or so, with consequent long spells of fine weather.

A *cyclone*, or low, is a low-pressure area. In the Southern Hemisphere the winds blow round the centre in a clockwise direction (see Fig. 2). Cyclones mean changeable weather and rain. Meteorologists generally restrict the use of the term "cyclone" to centres of severe storms and use the term "depression" to describe the average low.

New Zealand weather is dominated by a belt of high pressure which consists of eastward-moving anticyclones. The most recent research indicates that these anticyclones are not, strictly speaking, part of what geography books term "the tropical, high-pressure, belt." They originate from strong outbreaks of cold air which flow northward into the southern Indian Ocean from the Southern Ocean.

These outbreaks usually occur in the rear of deep cyclones of the Southern Ocean and have a tendency to occur in a rhythm of about a six-day period. As a result anticyclones usually pass a given locality separated by a six-day period, and thus there is a scientific backing for the recurrence of wet or fine weekends.

Figure 3 shows the "favourite" tracks of these anticyclones across New Zealand at different seasons of the year.

To the south of this high-pressure belt passes a succession of *antarctic depressions*, the centres of which are well to the south of New Zealand—e.g., about 70 degrees south latitude.

Winds

As may be seen from Fig. 4, a counter-clockwise circulation of air round the