

not usually so spectacular at Edmonton but if the Pacific air spreads over the whole of the Prairies, a general mild spell is produced which is a welcome relief from the cold wave which preceded it.

The lower layers of the Pacific airmass are gradually cooled as they move eastward across the Prairies, particularly when in contact with snowy ground, while at the same time the air will have picked up as much moisture as it can carry at the temperature which it acquires during travel. Its power of licking up snow from the ground therefore rapidly diminishes. In the Western Provinces there is a general tendency to measure the extent of the 'chinook' by the area which is wholly or partly denuded of snow and from this point of view the eastern margin of a 'chinook' will rarely be distinguishable beyond the Saskatoon-Swift Current line.

Precipitation.—The Southern Prairies in direct contrast with the Pacific Coast, have a rainy season from late May to early September and a dry season during the late autumn, the winter and early spring. The rainfall is moreover not dependable from year to year. It is principally caused by the action of summer cool waves from the Arctic regions. Moving southward these lift warm, moist air which has accumulated on the Prairies. The cooling due to the lifting, may produce general rains or local thundershowers. General rains, the more unusual phenomenon, come from the lifting of extensive moist airmasses moving northward from the Mississippi Valley and adjoining regions. Local showers, more common, arise from local ascent into a dry, cold upper airmass. Failure of frequent excursions of cool northern air into the Southern Prairie Region during the summer produces droughts. The districts most subject to drought extend from southeastern Alberta into southwestern Saskatchewan. By contrast, the Red River Valley of Manitoba and the Edmonton district of Alberta have the most dependable precipitation. In the Southern Prairies the highest annual precipitation occurs on the Manitoba lowlands and in the foothills of the Rockies where it ranges from 20 to 25 inches. The peaks of thunderstorm-frequency occur in these two regions, more than 20 days of thunderstorms annually in southeastern Manitoba and more than 25 days in western Alberta. Planting of wheat sometimes begins in southern Alberta in late March and generally proceeds at successively later dates eastward and northward: the average date at which wheat appears above ground in southeastern Manitoba is about April 25. These dates are subject, sometimes, to considerable delays because of short periods of wintry weather with precipitation in spring. Planting may, therefore, not be completed till the first week in May or, in some sections the planting of spring wheat may be abandoned in favour of the planting of coarse grains because of the lateness of the season. If, however, sowing is accomplished in good time, early commencement of spring rains is generally imperative if a good yield of grain is to be expected. When the rains are delayed, the topsoil dries out rapidly leaving the seedlings subject to being blown out by the strong winds of late spring. Blown-out soil may often be replanted with success if good rainfalls occur in late May. It is not unusual, however, for spring rains to be disappointingly light or spotty and June may commence with little rain. Crops then depend upon July rains and if these are again poor and spotty, the results are disastrous—only less so are those years when the early summer rains cause rapid growth and high hopes which are dashed by heat and drought in July. Drought or years of little rain appear on the average to be associated with the time of sunspot maximum, while good rains appear to be associated with years at or near minimum of sunspots. There is, however, no regular or dependable correlation with the course of the sunspot period, and, therefore, no seasonal predictions of rainfall can