

runs along the face of the northern continuation of the Pembina escarpment, with a mean elevation of 1,600 feet. In the great depression drained by the Valley river its width is from a quarter to half a mile. It is composed chiefly of sand, but it also contains very many large boulders of dark-gray and reddish gneiss, mingled with others of Paleozoic limestone.

Proceeding a little further to the west, the whole surface of Duck mountain is found to consist of irregular ridges and knolls of gneissic debris rising in some parts to a height of 2,000 feet above Lake Winnipeg, or 2,700 feet above the sea. This rugged tract extends southward over the summit of the Riding mountain, and it is not improbable that the Brandon hills (which have been described to me as having somewhat similar characters to those already mentioned) may be a southern continuation of the same extensive ridge.

Proceeding still farther westward along the Forty-ninth parallel of north latitude to the westward margin of what has been known as the second prairie steppe, a wide belt of rounded morainic hills is reached, lying on a sloping pre-glacial surface rising gradually from east to west. This hilly country, which has been known since the time of the early voyageurs as the Missouri Coteau, was well described by Dr. Dawson in his report on the geology and resources of the Forty-ninth parallel. It has also been identified by Professor T. C. Chamberlin as the continuation of the great terminal moraine of the second glacial period, which has been traced by himself and others from Dakota eastward to the Atlantic Ocean. From the northern boundaries of Dakota it has been traced by Mr. McConnell northwestward in Canada for two hundred miles to a point on the South-Saskatchewan river, twenty-five mile above the elbow, crossing the line of the Canadian Pacific railway in the vicinity of Secretan station. North of this point its course is not at present known, and it must be borne in mind that north of the Fifty-first parallel of north latitude the plains lose to a great extent their eastern slope, the summits of the Duck mountain, in long. 101° W., being equal in height to the general surface of the country due west of them in long. 113° W., or more than five hundred miles distant. Since, then, the slope on which the moraine constituting the Missouri Coteau was deposited becomes very indefinite or dies out a little north of the South-Saskatchewan river, it is not improbable that the course of the moraine itself is much changed, so that it may curve around and join others that are now known to the east or west of it. It is, however, more probable that it is here an interlobate moraine, and that as a definite entity it does not extend much further north than its present known limit.

West of the Coteau the till is of essentially the same character as that to the east of it, and numerous detached ridges of "rolling hills" or terminal moraines are known to occur. In describing the vicinity of the Cypress hills Mr. R. S. McConnell classes with the Coteau, as being "covered with