forty miles of them, as far as Calgary, on the Canadian Pacific railway, and from there southward to the international boundary it keeps at about the same distance from the mountains. North of Calgary the western edge of the great sheet of till crosses the Red Deer and North-Saskatchewan rivers at approximate elevations of 3,000 feet above the sea, the latter in long. 115° W. Further north it is stated by Dr. Dawson to cross the Peace river in lat. 56° N., long. 119° W. To the south its boundary everywhere lies on the United States side of the Forty-ninth parallel of latitude. North of or near this geodetic line it covers all the country of the plains without regard to elevation, with four exceptions, viz., the upper portions of the Sweet Grass hills above 4,660 feet, the Cypress hills above 4,400 feet, the Hand hills above 3,400 feet, and Rocky Spring plateau above 4,100 feet.

The general character of this great sheet of drift is remarkably uniform throughout, being essentially composed of a gray, more or less sandy clay, massive in character, and holding numerous pebbles and bowlders. It is largely composed of the débris of the Cretaceous and Tertiary rocks that surround or immediately underlie it, consisting probably of the parts of these strata that were rotten from long exposure to the weather during the ages that intervened between the close of the Laramie period and the commencement of that of glaciation. By this latter agency the rotten rock was kneaded up, with the bowlders and pebbles transported from a distance, into a homogeneous mass. That the till is local is clearly seen where the underlying rock has any very marked characteristic by which it can be recognized—as, for instance, the rocks of the Edmonton series of the Laramie, which are associated with numerous beds of lignite. Overlying these rocks, and especially for some distance south of a lignite outcrop, the drift is filled with pieces of lignite sometimes as large as a hen's egg, and the whole mass becomes dark in color from its presence in minute fragments. Another instance is recorded by Dr. Dawson where the drift has a distinctly reddish tint, derived from some neighboring reddish clays of the Laramie formation. The bowlders are, however, largely of eastern origin, being composed of granitoid gneiss, mica-schist, quartzite, diabase-trap, gneiss-conglomerate, and stratified Paleozoic limestone, those of limestone, as well as an occasional one of the other rocks, being usually irregular in shape, with smooth, polished surfaces and sharply marked glacial striæ. The pebbles included in the till throughout the western portion of the district, where they consist largely of white quartzite, the same as that composing the Miocene gravels on the Cypress and Hand hills, are doubtless partly of local origin, having been derived from the gravel on these hills, or from other areas that have been entirely denuded away. Some are also probably derived from the parent beds of Cambrian quartzites in the Rocky Mountains. A few of gneiss are almost everywhere met with, and while the western quartzites