seen in several bands, and are interstratified with fine-grained sandstone and at places with coarse interstratified rocks. At the Little Kaiwhata they strike 20° west of north, while the dip is to the west at 50°. The strike of the beds carries them through a dividing spur to the main watercourse of the Kaiwhata. At this point, about half a mile from the smaller stream, the fine-grained sandstones and shales strike 10° west of north, with a dip of 45° to the west. These rocks are very fissile, the colour bluish, and the thickness of the bands is 2 ft. to 4 ft. The upper beds are thinner, while the dip in places is almost flat, and elsewhere they are vertical. They are associated with beds of conglomerate, which conform with the general strike and dip of the interbedded rocks. In places they no way differ from the same beds more intimately connected with the typical coal-rocks, but at times they assume the appearance of a slaty breccia, the fragmental inclusions being angular and set in a matrix which has undergone induration.

These beds are interstratified with coal-rocks similar to those of the coast, being the same coarse gritty rock with fine laminations, wavy in places, and possessing coal in veins and pockets. As on the coast, they are associated with the mudstones, shales, and conglomerates. The whole beds, however, differ in the mode of their occurrence in having associated with them another rock of the series, which is a coarse dyke-like mass of sandstone of a grey colour. This rock has plant-remains, which occur in great frequency towards to the west in the high range to the south of Bismarck Creek.

Of the coal-rocks, the conglomerates in this section are of much greater extent than elsewhere, and the component materials are much larger, the boulders being in places 4 in. and 6 in. in diameter. The dip of these beds at a point one mile above the Little Kaiwhata junction is to the west at an angle of 40°. At the junction of the Lower division of the Upper Cretaceous rocks with the Miocene beds, these coarse conglomerates, together with the massive beds of sandstone, give way to shales and finer sandstones, so that the line of demarcation is not so striking as might be expected.

In the small section, as shown on the East Coast Road, which is no more than half a mile wide, the gritty coal-rocks again appear. They occupy the crown of the hill, and to the east they are covered by the limestone of the Upper division, while the Miocene clays, shales, and conglomerates, rising from the valley of the Pahaoa, overlie them on the west. The associated conglomerates are not exposed, nor the clays and shales to any extent. The coarse, dyke-like rock mentioned elsewhere occurs, however, and rises in vertical walls from the adjoining beds in a way highly suggestive of volcanic material. The coal-rocks have a general north and south strike, while the dip is 40° and to the west.

Continuing the section across the intervening limestone through to the coast, the Lower division, consisting of sandstones and shales, are found to be much shattered and contorted, making it at places almost impossible to determine the strike and dip. At places the dip is low, at others high and in opposite directions. Its true angle is, however, always high, and the prevailing direction of the dip is easterly. This section along the East Coast Road is the shortest of the rocks of the Cretaceous system, and with the limestones it represents the remnants of the denuded syncline explained in describing the strata elsewhere. The trough of the syncline (the Miocene rocks of the lower Kaiwhata) is absent, together with a portion of the underlying beds. Further south it is reduced to still less dimensions (as regards its component beds) till nothing but the limestone rocks, dipping east, is left at Waikikino.

The coal-rocks continue a little south of the East Coast Road as sandstones with plant-remains, and associated with conglomerates, occurring as isolated patches in the swamp-land on the coast-line and in the tide-way. Of the remainder of the strata constituting the Lower division of the upper Cretaceous rocks little can be said other than that the rocks on the east slope of the Maungaraki mountains on the East Coast Road continue north, and occupy the area between the limestone and the Miocene rocks; while, as mentioned elsewhere, in the extreme west are the coarse, thick-bedded sandstones and shales, with and without plant-remains, dipping under the Miocene beds in the north and under the Middle division occupying the lower ranges in the valley of the Kuamahanga River.

(*b.*) *Middle Division.*—These rocks occupy two regularly-shaped areas, the one being in the valley of and in the country drained by the Kuamahanga River, and the other in the gorge of the Kaiwhata River, about three miles from its mouth, while an exposure of this rock occurs in the Little Kaiwhata Creek at its junction with the larger stream. The Kuamahanga area is about four miles in length and two in width, and the general trend north and south. It is bounded on the south by the Miocene rocks of the Pahaoa Valley, and forms the lower ranges at the head of the Pahaoa River. In this area of the Middle Division, like the Miocene beds, these do not raise themselves anywhere to any height; and, although they are found as a rule at higher elevations than the younger beds, yet they never are on any but the subsidiary ranges and spurs, and are confined to the outlying ranges lying to the west of the Maungaraki Range. On the west they are bounded by the foot-hills of the Taipo Ranges and the Miocene beds of the Kuamahanga River, on the east by the Lower division, and on the north by the Secondary rocks of the Brocken.

The Kuamahanga area and the small rock-exposure in the Little Kaiwhata are made up of a bluish-coloured micaceous sandstone, to the exclusion of other rocks. In the upper tributaries of the stream plant-remains are frequent. At places the rock is a little less micaceous, otherwise they present no variety throughout its whole extent. The strike is difficult to determine with any exactness, for the beds, although finely bedded, are twisted and much disturbed. The rocks being soft, they have given way to movements that would not have affected some of the older rocks. The best examples of the strike and dip are seen about two miles west of Wharau. Here the strike is approximately 30° west of north, and the dip westerly at high angles.

The second and perhaps the most important area of this division is seen in a small exposure in the gorge of the Kaiwhata. It is about a mile and a half in length, with a width estimated at