

O 816 and 817 are two coarse sandy soils, forwarded at the instance of the district Fields officer, from a littoral area at Wharenui, Cape Campbell, Marlborough, between the Wharenui Railway-station and the sea, and about 4 chains from it. These soils are well provided with all mineral plant-foods, but suffer from the extremely coarse texture common to sandy soils. The high content of available phosphoric acid will be again noticed—a frequent character in sea-littoral soils. Improvement methods should be based on an attempt to improve the coarse texture by applications of organic manure or by green-manuring, or by applying soils of finer texture, such as those containing finer particles.

M 651 and 652 are samples from the Te Arai Settlement, Gisborne, Section 5, Block IX. These are soils of very fine texture. M 651 would probably be very hard to cultivate, from the large percentage of fine silt and clay and low percentage of coarse and fine sand. M 652 has a much better texture. The amount of salt present is small, and affords no reason for suspecting that the land would prove infertile from this cause, although further inundation from salt or brackish water might increase the amount of salt present. Owing to the absence of any lime requirement and the high amount of all plant-foods present, this land should grow excellent pasture. The high amount of available potash and phosphoric acid present should be noted.

ORCHARD SOILS.

P 1245 and 1246 are soils from the Huapai Orchard Settlement, North Auckland. P 1245 was a sample of the stiffer soil of the district, considered especially suitable for apples. P 1246 is a much more friable soil found in patches and considered more suitable for citrus fruits. (The occurrence of patches of good soil is most noticeable in all poor gum-land soils. May not each patch mark the previous site of some gigantic kauri-tree, which is known to shed bark and leaves and so build up a mound of decaying organic matter within the circumference of its spread of branches?) The analyses of these soils disclose the fact that available and total phosphoric acid is present only in traces, while the other essential plant-foods, especially nitrogen, are present in fair proportion. The application of phosphatic manure must therefore be an essential feature in any fruit-farming operations.

P 399-402 are some orchard sandy-loam soils from the Te Mata Road, Havelock North, Hawke's Bay. The outstanding feature of these soils is the deficiency of available and total phosphoric acid. Application of phosphates must form an important part of any scheme of improvement.

SOILS OF FINE TEXTURE.

L 974, a fine sandy loam from Tokirima (Wanganui River basin), is an interesting soil, as it is from a country originally growing fern, and therefore easily brought in to pasture, but which, notwithstanding, grows very good pasture. There are many thousand acres of this type, and it probably owes its low primitive type of vegetation to the fact that the soil is derived from recent volcanic-mud showers.