

The Ngatarawa Series is found in two localities, Ngatarawa and Te Mata. The soil characteristics are similar in both cases, being sandy loam to free loamy sand overlying stony gravel at an average depth of 18 in. The soils of this series dry out rapidly. The available potash and phosphate is low, and the analyses indicate that with sufficient moisture phosphate dressings might be applied with advantage. In reaction the soils are acid, being well below neutral.

NGATARAWA SERIES.—TYPICAL ANALYSIS.

Sample No.	Depth.	Available		pH.
		Phosphate.	Potash.	
2457 ..	In. 0-6	0.012	0.026	5.7
2458 ..	9-15	0.003	0.010	6.3

The Havelock Series does not cover a very large area and does not vary to any extent except in texture. The subsoils consist of a particularly heavy clay, in some places forming a shallow pan. The topsoils also are fairly heavy and do not break down well when cultivated.

The available potash is fairly low, especially in the subsoil, and the available phosphate, although high in the topsoil, drops markedly in the subsoil, suggesting that added phosphates have been retained in the topsoil. The pH values vary somewhat.

HAVELOCK SERIES.—TYPICAL ANALYSIS.

Sample No.	Depth.	Available		pH.	Soluble Salts.	Texture.
		Phosphate.	Potash.			
1983 ..	In. 0-6	0.037	0.010	6.7	Per Cent. 0.077	Sandy loam.
1984A ..	6-12	0.004	0.007	6.5	0.011	" "
1984B ..	12-18	Trace	0.005	6.6	0.084	Clay.

The Hastings Series covers a fairly large area, with a large range of sub-types. These sub-types also vary considerably, owing to such external factors as high water-table and deposits from different rivers. The topsoils in the heavier types present some difficulties in cultivation and require seasonable conditions to be right, before breaking down to a good tilth. The lighter-textured types, on the other hand, break down fairly well. This series is particularly well supplied with available potash and phosphates, while the pH values range from 5.2 to 7.2.

HASTINGS SERIES.—TYPICAL ANALYSIS.

Sample No.	Depth.	Available		pH.	Soluble Salts.
		Phosphate.	Potash.		
2459	In. 0-6	0.046	0.053	6.0	Per Cent. 0.053
2460	9-15	0.042	0.026	6.3	0.033

The Pakowhai Series is found near the present Ngaruroro River and does not cover a very large area. It is derived from flood deposits of that river and does not vary as much as some of the other types. The whole series is very fertile, but is subject to repeated flooding. This series is associated with good phosphate and potash figures, while the pH tends to be near neutral or higher—perhaps sometimes too high for apples.

PAKOWHAI SERIES.—TYPICAL ANALYSIS.

Sample No.	Depth.	Available		pH.	Texture.
		Phosphate.	Potash.		
1671	In. 0-6	0.040	0.066	6.0	Silt loam.
1672B	12-18	0.031	0.030	7.4	"

The Kaiapo Series is also somewhat scattered and varies considerably in texture. The limiting factor in these soils is the presence of a high water-table. This hampers the work of cultivation and during very wet period the soils become very water-logged. The soils are very fertile, being high in phosphates. Better drainage in this series seems essential.