

## NOTES ON SOILS ANALYSED.

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THE results of the analyses of certain samples received during the past three years are here collected. Many of these are of considerable interest, but as they refer to types already investigated, to isolated types requiring a preliminary report for some Government officer or for some special reason, and there is not sufficient information to warrant more than brief notice here, it is deemed advisable to publish them together in order that the results may be placed on record. (See accompanying table.)

*Mokotua, Southland*, soils (C1189/1-2) were analysed at the request of the Live-stock Division to ascertain if any cause could be found for the unthrifty condition, terminating in scouring, anæmia, emaciation, exhaustion, and death of cattle fed on the pasture and turnips grown on this land. These soils are lower in available phosphoric acid than the majority of Southland soils which have been analysed, and the lime-magnesia ratio is unbalanced. No. C1189/2 was from a grass-paddock, No. C1189/1 from a turnip-field.

*Cape Farewell, Collingwood*, soils (D105/1-4) are samples analysed at the request of the Live-stock Division in order to ascertain whether any cause existed for a deficiency disease in sheep pastured on the land. It will be seen that the total and available phosphoric acid is very low, and the available iron is also low, while the potash is present in good amounts.

*Kohatu, Motueka Valley, Nelson*, soils (D1020).—This is another instance of a soil having an unbalanced lime-magnesia ratio when extracted by strong acid, though the reverse is the case when weak acid is used. The matter is fully discussed in the *Journal* of the Department for December, 1915 (Vol. xi, p. 498). The Fields Instructor in forwarding this sample reported, "The top soil averages 6 in. deep, and will not grow anything but native grass (very short), poor fern, and stunted manuka. This poor area is well defined, and in places the boundary is almost a straight line. When it is cultivated it will not grow either root or corn crops, and after cultivation goes back into native grass and fern. There is a considerable area of similar country in the valley."

It will be noticed that this soil is well supplied with plant-food, especially phosphoric acid, both total and available; therefore the only reason apparent for the sterility is the unbalanced lime-magnesia ratio. The matter is being further investigated.