POT EXPERIMENTS WITH COARSE PUMICE SOIL.

The following is a record of pot experiments carried out with red clover on pumice soil from the Mamaku Plateau (Rotorua County), situated 1,800 ft. above sea-level.*

The soil used was forwarded from the Mamaku Experimental Farm in clean sacks supplied from the Laboratory.

The seed was red clover from Blenheim, supplied by the Biologist, and germinated before planting on 15th September, 1916.

Fertilizers: The water-soluble fertilizers were shaken with water and sprinkled on the soil. The insoluble substances were applied in finely powdered form. The stable manure was shredded as finely as possible. All fertilizers were thoroughly incorporated with the soil before filling into the pots.

The pots were kerosene-tins cut lengthwise, and treated inside with paraffin-wax. Holes for drainage were provided, and the soil was filled in over a layer of clean broken bricks. Twenty pounds of damp soil was used in each pot, all pots after filling being of a uniform weight of 25 lb.

Pot No.	Dressing.					Weight per Pot
	Finaly ground lime carbonat	-0				Grams.
1	Finery ground nine carbonat	.e	• •		• •	240.00
4	"		• •		• •	02.00
3	11			• •		16.40
4	Control (no manure)					
5	Spent iron oxide from gaswe	orks				8.20
6	Superphosphate (19.5 per ce	nt. P_2O_5)				4.10
7	Control (no manure)					
8	Ferrous sulphate (pure)					1.23
9	Iron oxide (red hydrated as	used at g	asworks)			8.20
IO	Basic slag (17.8 per cent. P2	O ₅)				4.10
II	Makatea phosphate (37.4 per	cent. P.	() ()			4.10
12	Basic slag and superphospha	te (equal	parts)			4.10
13	Rotted stable manure		•••	••		164.00

Watering.—The pots were watered at intervals, the original weight of 25 lb. being maintained.

Early Growth. — The pots were examined comparatively on 20th October, when the order of growth appeared to be as follows: Nos. 12, 6 - 13, 10 - 11 - 9 - 4, 5, 8 - 7, 3 - 1, 2. At 20th November the order of growth remained apparently the same. The basic - slag pot seemed of a darker green than the other phosphate pots. The leaves of the iron-oxide and ferrous-sulphate pots were also somewhat darker, but those of the spent-oxide pot were rather off colour.

* Articles on pumice soils which may be consulted with advantage will be found in the *Journal* for May, 1912 (p. 374), and June, 1913 (p. 622).