factor together with gastric juice inactivated by heat, provoked no response.

The foregoing facts partially explain why certain normal guinea pigs exhibit a hematopoietic reaction to the administration of liver extracts. This response is a tool which may prove its usefulness in the quantitative assay of the therapeutic potency of commercial liver extracts, and in various studies concerning the physiology of hematopoiesis and the pathogenesis of pernicious anemia.

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THE ANAEROBIC CONDITION OF SOILS IN POROUS PORCELAIN CONTAINERS

IT has generally been assumed that one of the virtues of porous clay pots for plant containers is that the material provides for the aeration of the soil through the walls of the pot. Jones[1] has demonstrated the fallacy of this assumption and his conclusions are strikingly supported by data obtained in some soil potential studies.

In an attempt to measure the potentials of soils in pots in the presence of growing plants it was thought advisable to protect one series of buried electrodes from contact with plant roots. The device used was to place ordinary bright platinum foil electrodes on glass stems into the same soil as that contained in the pot in porous porcelain capsules sealed at the top with picein.

These and the same type of electrodes without protection were imbedded in soil in one-gallon pots at a depth of about four inches. The soil in the pots was kept at a uniform moisture content of about 50 per cent. saturation. Potential measurements were made after the electrodes had been in place about a month. A saturated KCl-calomel electrode was placed in contact with the soil at the surface.

Considerable work with soil potentials has shown that aerated soils will give Eh values ranging from +.4 to +.7 volts, depending on the hydrogen ion concentration and the technique employed. Potentials below +.1 volts indicate an extreme anaerobic condition.

In the work under discussion the potentials listed in Table 1 were taken from a number of pots with different treatments.

It was anticipated that the electrodes exposed to plant roots would be negative to those enclosed in the porous porcelain capsules. The reverse was found to be true and the magnitude of the difference indicates an extreme anaerobic condition in the latter.

TABLE 1

POTENTIALS OF SOILS AT BARE AND PROTECTED ELECTRODES

Soil acidity	Potential (Eh) of electrode		Potential difference
	Bare	Protected	
pH	Volts	Volts	Volts
6.9	+.56	−.26	.82
6.8	+.60	−.14	.74
6.75	+.58	−.08	.66
4.6	+.72	−.11	.83
4.6	+.96	−.19	1.15
4.6	+.73	−.04	.77

The results indicate that oxygen does not dissolve and diffuse through the moisture in the walls of the capsule rapidly enough to supply the microorganisms in the soil within the capsule. They should be applicable to any static moisture film. The thickness of the film, the activity of microorganisms and the movement of the film either by convection or flow would govern the difference.

This evidence is a by-product of an investigation that was originally planned with another objective. It is one of many instances of the utility and versatility of the potentiometric method of studying soil properties.

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[1] Linus H. Jones, "Aeration of Soil in Plant Containers," *Florists Exchange and Horticultural Trade World*, 79: 11–39, 1932.

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