TOXIC ORGANIC SOIL CONSTITUENTS AND THE
INFLUENCE OF OXIDATION.¹

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The investigation of infertile soils from various parts of the
United States has received considerable attention and has been con-
ducted along several converging lines. Earlier researches proved
that in many of the soils studied there is no correlation possible
between their mineral composition and their crop-producing power,
either as shown in the field or as shown in the laboratory by the use
of soil tests or solution culture tests prepared by making an aqueous
extract of the soil and growing plants therein as an indicator of
whether the soil solution itself was favorable or unfavorable to plant
growth. Such experiments showed, indeed, that the crop-producing
power of the soil is transmitted to its extract and that the extract
prepared from such unproductive or infertile soil is less suitable for
plant development than one prepared from a good soil. This differ-
ence in some cases was so striking that the plant development in the
extract of a soil, which nevertheless contained mineral plant nutri-
ents, was less than in pure distilled water free from any nutrient
material whatever. Such a result indicates, therefore, that in soils
which show this distinctive difference, there are present bodies which
interfere with the normal development of plants.

Further studies showed that the harmful influence of the extract
from such soils can be removed therefrom by certain treatments,

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