APPENDIX A.

Report from Professor Abel, F.R.S., to H.E. General Lefroy, C.B., F.R.S., on the Character and Composition of Samples of Soil from Bermudas.

LABORATORY, 18 BILLITER STREET, E.C.,
January 4th, 1873.

To PROFESSOR ABEL, F.R.S., etc.

Liebig, in his report to Lawes and Gilbert on the composition of the soil of the various plots under experimental cultivation at Rothamsted, has suggested the adoption of a uniform method by all chemists in the examination of soils, so as to lead to comparative results. The method he has adopted is the following, viz.:

1. Solution in dilute acetic acid (one part of strong acid to four parts of water). This he considers the measure of plant food in the soil at immediate disposal.

2. Solution in dilute hydrochloric acid (also 1 to 4). This yields the quantity which by the action of weather gradually disintegrates and becomes proximately available.

Of the remainder, that which is soluble in strong hydrochloric acid shows the readily decomposable part of the soil, though requiring a longer time for disintegration than that dissolved by weak acids, while the part which is rendered soluble only by fusion (when the examination is carried so far) represents the ultimate capability of the soil to renew its fertility after the lapse of time.

It is obvious, if a uniform method of analysis such as this were adopted by all chemists, it would materially enhance the value of their work, by giving comparable results.

In the analysis of the Bermuda soils, which I have now to report, I have adopted, as far as possible, this plan of analysis, omitting the solution in weak hydrochloric acid, and using instead strong hydrochloric acid. The quantity dissolved by this re-agent represents the readily