

REPLY TO DR LEATHER.

In our paper we did not discuss Table III in any detail because as we stated the dissolved atmosphere in the soil is under further investigation. It is sufficient to say that the gas was not obtained in the manner suggested in the opening lines of the above note. The dissolved gas begins to come out directly the pressure is lowered by the working of the pump, and no sharp line can be drawn to indicate precisely what fraction of the extracted gas was free and what dissolved. For this reason we refrained from making any estimate of the amount of the dissolved atmosphere except to say that it is small. No comparison can be instituted between the data in Table III and those on page 44 owing to the difference in experimental conditions, and, moreover, the first and second lots of 30 c.c. recorded in Table III, on the composition of which Dr Leather bases part of his argument, certainly contained some of the free air. The successive extractions were not made on successive days: in some cases there had been practically no interval between them.

The conclusion we drew from the experiments was that the atmosphere dissolved in the surface films of water and other substances is almost devoid of oxygen and consists mainly of carbon dioxide with some nitrogen. This seems to us to be a legitimate deduction from the figures, and we do not think we can go any further at present. Dr Leather says that the Pusa soil behaves differently. The figures he quotes, however, seem to lead to the same conclusion: in his case also the amount of gas is small and it appears to be poor in oxygen. Where then is the difference?

A. APLEYARD.
E. J. RUSSELL.

ROTHAMSTED EXPERIMENTAL STATION,
HARPENDEN.

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