The experiments outlined in the paper by the senior author were made in the spring of 1911. This spring Mr. Bates joined me and we made the following experiments.

EXPERIMENTS.

The object of the experiments was: (1) To determine again whether soil acts as a semi-permeable membrane; (2) to determine whether its efficiency as a semi-permeable membrane varies with the depth of soil column; (3) to measure the total osmotic pressure obtained in each case; (4) to find the influence of change of temperature upon the total osmotic pressure obtained in each case.

APPARATUS.

The apparatus used is illustrated in Fig. 7. Six tubes were prepared as follows: Each of the tubes A, 1.1 cm. inside and 15 cm. long, was covered at the lower end with one layer of cotton cloth. Each tube was fitted with a rubber stopper in which was inserted a glass tube between 1 and 2 mm. inside diameter.

The tubes were numbered 1, 2, 3, 4, 5 and 6. A definite weight of