Fig. 1. Diagram of potometer for measuring rate of water uptake in small germinating seeds (not drawn to scale)

as shown in Fig. 1. A ground-glass plate with a small opening in the middle, and a cover-glass or a glass slide to cover up the opening are used to close the potometer.

Before use the capillary is filled completely with water from a pipette through the Petri dish, and the free end of the capillary inserted into a beaker filled with water. A fitting filter paper is quickly inserted into the Petri dish and will absorb water from the capillary. By lifting the free end of the capillary from the beaker, an air-bubble can be introduced into the capillary, which is then lowered again. The potometer is then left open until the bubble has risen to the horizontal part of the capillary. Now the potometer is made air-tight with the cover using any sealing agent and left until the bubble has come to a standstill, indicating that the air inside the Petri dish has been saturated with water vapour. The cover is removed, a measured amount of seeds speedily spread on the filter paper and the cover instantly replaced. When a cover without an opening is used, the air pressure in the Petri dish might be increased by the closing procedure, which will result in a backward move of the air bubble, but when an opening is made in the plate, it can be quickly put in place. The opening has to be immediately closed by sliding the cover-glass smeared with 'Vaseline' sideways over it. Rate of water uptake is determined by reading the movement of the air bubble against a millimetre-scale behind the capillary.

It is advisable to have the potometer in a fixed position in a constant-temperature room and do the handling with the help of forceps and not by hand, in order to avoid temperature changes.

In our laboratory water uptake in photo-sensitive lettuce seeds has been determined by this potometer. The results will be published elsewhere.

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Oct. 25.

[1] Kruyt, W., "A Study in Connection with the Problem of Hormonization of Seeds" (Dissert. Amsterdam, 1954).

A Slide-trap Method for the Isolation of Soil Fungi

The slide-trap method of isolating actively growing soil fungi, described by C. J. La Touche[1], was used in an investigation of the fungus flora of a podsolized *Calluna*-heathland soil. The method was found to be highly selective of rapidly growing species and indeed, with very few exceptions, only permitted the isolation of *Trichoderma viride* from the surface soils. A modified slide-trap was designed which greatly reduced this selectivity and permitted the isolation of a wide range of species.

The modified slide-trap consisted of a shallow chamber (Fig. 1, *Y*) covered by a glass microscope slide (Fig. 1, *X*). A 'Perspex' strip (3 in. × 1 in. × $\frac{3}{32}$ in.) formed the base of the chamber, narrow lengths ($\frac{1}{8}$ in. × $\frac{3}{32}$ in.) of the same material formed the four walls and the chamber was divided into two unequal parts by a crosspiece. Chloroform was used for joining the 'Perspex' surfaces.

The chamber was stored in alcohol and sterilized by flaming when required. Melted agar was introduced into the larger section of the chamber by means of a sterilized pipette, where it spread evenly to form a thin layer (Fig. 1, *Z*). The chamber was then covered by a sterilized glass slide, which was firmly fixed in position by two wire paper clips when the agar had solidified. All manipulations were carried out under a sterile hood in an inoculating room.

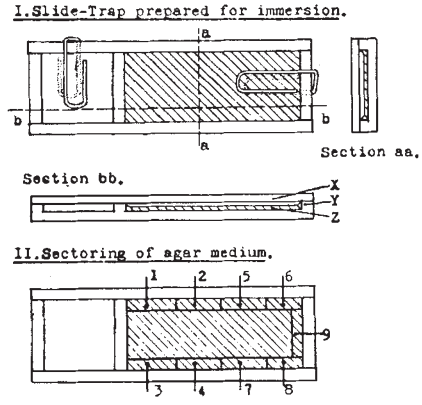

Fig. 1. Modified La Touche slide-trap

Slide-traps were immersed vertically into the soil to such a depth that the larger portion of the chamber was completely buried. The slot-shaped hole to receive the slide-trap was conveniently prepared with a square-ended chisel blade. Traps were buried in groups and were protected from rain by an inverted U-shaped piece of zinc sheeting.

After a suitable period of incubation in the soil, during which fungal hyphæ penetrated between the glass and 'Perspex' surfaces and colonized the agar medium, the slide-traps were returned to the laboratory. In routine isolation work the slide-traps were opened and portions from the edges of the agar medium were removed and plated. Usually nine small sectors of agar were removed, four from the upper part of the isolation chamber (Fig. 1, II, 1–4) and five from the lower part. These two groups of agar strips were plated separately, thus enabling a rough distinction to be made between those mycelia which penetrated the traps from the upper and lower levels of the soil sampled. Generally, two, three or four species were isolated from each slide-trap.

These modified slide-traps were economical of time and materials and were simple to use; the results obtained by their use were in close agreement with those obtained by the immersion tube method[2] and will be discussed in greater detail elsewhere.

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[1] La Touche, C. J., *Trans. Brit. Mycol. Soc.*, **31**, 281 (1948).
[2] Chesters, C. G. C., *Trans. Brit. Mycol. Soc.*, **24**, 352 (1940).