this method appear to have been published in Great Britain.

We have carried out a preliminary survey of atmospheric moulds by the plate method during the twelve months December 1947–December 1948. A 9-cm. Petri dish containing Sabouraud's agar has been exposed for ten minutes at the same hour each morning of six days every week on the roof of Llandough Hospital, near Cardiff. The resulting colonies have been counted five days after exposure, kept under observation for a further five days, and so far as possible determined generically.

During the twelve months, 2,988 colonies in all have been counted, made up as follows: *Cladosporium*, 1,542; *Penicillium*, 380; *Pullularia*, 108; *Phoma*, 82; *Botrytis*, 69; *Aspergillus*, 34; *Alternaria*, 21; *Oospora*, 20; *Mucor*, 12; *Monilia*, 11; *Stemphylium*, 7; *Cephalosporium*, 7; *Rhizopus*, 4; *Trichothecium*, 2; *Nigrospora*, 1; *Papularia*, 1; *Verticillium*, 1; *sterilia* (white), 440; *sterilia* (red and white), 167; unidentified, 79. While the total number of colonies fluctuated widely week by week (and still more day by day), there was a marked maximum around mid-July and an equally marked minimum around mid-January. Among individual types *Cladosporium* was highest in summer, *Penicillium* in spring and autumn, *Pullularia* in May, *Phoma* in April and *Botrytis* in autumn. The work is being continued and a fuller account will be published elsewhere.

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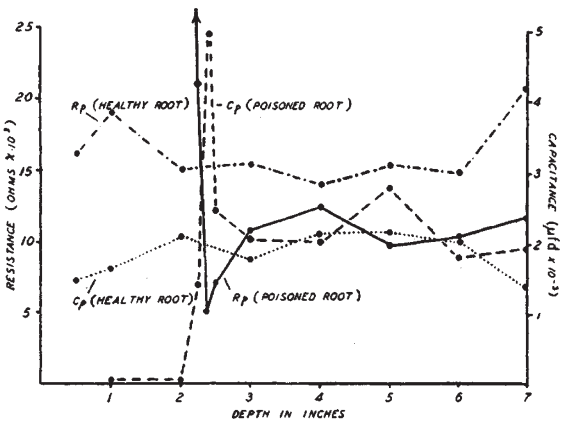
Diagnosis of Death in Roots

We have been interested in devising a simple method for determining the depth to which roots or underground stems of perennial weeds have been killed following the application of a poison to their tops, and have obtained useful results by means of a simple electrical method.

The equipment consists of a probe and a portable A.C. bridge. The probe, designed for robustness, consists of two metallic tips, for example, nickel-plated needle tips at $\frac{1}{8}$-in. separation, projecting $\frac{1}{8}$ in. from a glass tube in which their bases are held by means of a beeswax–resin mixture. The bridge is supplied from a 1,000 c.p.s. hummer with filter, and measures equivalent parallel resistance and capacitance (R_p and C_p). The probe is inserted into the root with the plane of the needles passing through the geometric axis of the root, and the bridge is then balanced.

On ascending from a lower, healthy portion of a root poisoned at its top, R_p decreases to a minimum and then increases. The decrease is attributable to the tissues becoming progressively more injured by poison[1] as the probe is moved upwards. The subsequent increase in resistance is attributable to the dead tissues having become desiccated. The lowest point of dead tissues is usually within one quarter of an inch of the locality at which the resistance is minimal. Thus in the accompanying diagram, R_p is minimal at a depth of $2\frac{3}{8}$ in. in the poisoned root. This root was dry and shrunken at a depth of $2\frac{1}{4}$ in. but exuded latex at a depth of $2\frac{5}{16}$ in. on being wounded[2]. Similar minima for resistance have been encountered in other roots where visual evidence of death is not so clearly marked. A particular convenience of the electrical method for diagnosing the lowest point of dead tissue is that it does not require destruction of a plant or its tissues. The diagram also illustrates the degree of variation found in a normal healthy root.



Graph showing variation of R_p and C_p in a healthy root and a poisoned root of skeleton weed (*Chondrilla juncea* L.). The lowest point of dead tissues in the poisoned root is close to the the point at which R_p is minimal ($2\frac{3}{8}$ in. deep)

The values obtained for C_p do not give a true indication of the phase angle of the tissues, because they include the effect of a comparatively constant capacitive film around the probe tips. In fact, this series capacitance due to the film, together with the variations in resistance of the tissues between the probe tips, accounts for almost all of the variations recorded for C_p. Although the readings for C_p do not provide any additional information, they do serve as a useful cross-check on the location of the point of minimal resistance, the maximal value of C_p always corresponding with the minimal value of R_p.

We propose to publish further details elsewhere.

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