Radioactive Elements in Plants

THE continued interest in the relation of radioactivity to plant growth focuses attention on the paucity of information available as to the presence of radioactive elements in plants. K. Kunasheva and B. Brunowsky, of the Biogeochemical Laboratory of the Academy of Sciences at Moscow, who have already published work dealing with the presence of elements of the thorium series in duckweed, have reported in a letter to the Editor the results of quantitative determinations of uranium in the same species. They find the uranium content to be $9{\cdot}5 \times 10^{-5}$ per cent. By the same method the radium content was found to be $2{\cdot}38 \times 10^{-11}$ per cent. On the basis of these figures, the ratio Ra : U for duckweed is calculated as $2{\cdot}7 \times 10^{-7}$, that is, within the limits of error in measurements, uranium is in equilibrium with radium. Details of the method and results of the measurements are to be published in a forthcoming issue of the *Proceedings of the Biogeochemical Laboratory of the Academy of Sciences*.

A New Genus of Mesembryanthemum

The late Dr. N. E. Brown left a manuscript note of six species of shrubby South African mesembryanthemums. He included these in a new genus, *Mestoklema* (Gr. *Mestos*, full, *klema*, a small branch), and full descriptions of the species appear in the *Gardeners' Chronicle* of August 29. *Mestoklema* is allied to the older genus *Delosperma*, but differs in its peculiar branched habit, the very small flowers, the persistent, hardened, subspinose cymes, and the closed cells of the capsule, which are provided with cell wings.

The South Sandwich Trench

To the north and east of the South Sandwich Islands in the South Atlantic on the edge of the Weddell Sea, the *Meteor*, and later *Discovery II*, took some unexpectedly deep soundings exceeding seven thousand metres. This area was further sounded in the most recent cruise of *Discovery II* and is provisionally mapped in a paper by Dr. N. A. Mackintosh on "The Third Commission of the R.S.S. Discovery II" in the *Geographical Journal* of October. The trench seems to extend in an arc about a hundred miles to the east of the line of volcanic peaks which constitute the group of South Sandwich Islands. On the north it ends in about lat. 55° S., and in its northern part it is widest and deepest, falling to below eight thousand metres. To the south it narrows to a cleft of more than seven thousand metres, less than ten miles wide in its deepest parts. This remarkable cleft has not yet been traced south of about lat. 61° S., where it seems to curve towards the west, south of the ridge joining the South Sandwich and South Orkney Islands.

'Polaroid'

DEMONSTRATIONS of some technical uses of the new polarizing material 'Polaroid' are being given by appointment with Messrs. Polaroid Products, Ltd., 39 Lombard Street, E.C.3 (Telephone, Mansion House 2997). This firm is the representative agent in Great Britain of the American manufacturers of the polarizing film described by Prof. A. F. C. Pollard in NATURE of August 22 (p. 311) and now named the International Polaroid Corporation, New Jersey, U.S.A., with its laboratories in Boston. The film, which formerly consisted of nitrocellulose, but now consists of the less inflammable cellulose acetate, contains sub-microscopic crystals of herapathite with their optic axes oriented in one direction parallel to one another, and is made in the two grades designated Types I and II. Type I is intended for use in optical systems and instruments, whereas Type II is intended for use over light sources when plane polarized illumination is required. Type I may be obtained clear or dyed in various colours. Type II is not optically clear, but polarizes light just as efficiently as Type I and is cemented to one side of glass sheet. Messrs. Polaroid Products, Ltd., supply Type I film, cemented between glass plates of optical quality sufficiently good for most purposes and mounted in bakelite rims with an aperture of 4 cm. Disks, ½–4 in. diameter, and squares of the same dimensions, with the film cemented to one side of the glass only can also be supplied immediately. The American concern is now manufacturing film 2–2½ ft. wide, and, we are informed, will supply 'Polaroid' in production quantities in the near future. Amongst the technical applications of 'Polaroid' to be seen at the demonstration there is the elimination of glare by motor-car headlights, a very striking and beautiful stereoscopic cinema projection in natural colours, a large apertured stereoscope which can be viewed by several people at the same time, a strain viewer and some effects with colourless 'Cellophane' cut out to form pictures which in polarized light appear in a variety of interference colours. In addition, a lamp is arranged to give strong polarized illumination so that the texture of the skin may be examined by the aid of a 'Polaroid' screen.

A Fairthorne–Salt Mathematical Film

A CINEMA film to show the qualitative properties of the differential equation $x + x = 0$ has been produced by R. A. Fairthorne and B. G. D. Salt and can be obtained from the former at Kirk Michael, Hillfield Road, Farnborough, Hants. It shows two disks of variable radius, revolving at constant speed. The radius of one represents the acceleration x, so the length of a string unrolled from it represents the velocity $\dot{x}$. The radius of the second disk is equal to the length of this string, and so represents this velocity, and the length of a string unrolled from it represents the distance x. By arranging that the length of this second string, taken in a certain direction, is numerically equal to the radius of the first disk, we get the differential equation. This arrangement may be regarded as embodying the fundamental ideas of the differential analysers used by Dr. Bush at Massachusetts Institute of Technology or Prof. D. R. Hartree at the University of Manchester. The film can be obtained on 35 mm., 16 mm. or 9·5 mm. stock. The methods used can be extended to other differential equations, as was explained in a paper by Mr. Fairthorne read before the International Congress of Mathematics at Oslo last July.

ERRATUM.—In the summary prepared for NATURE of Dr. I. V. Newman's paper before the Linnean Society of New South Wales on the angiospermic carpel (NATURE, August 1, p. 209), the third conclusion, that "the legume is not a foliar structure", is incorrect. It should read "the evidence is compatible with the legume being a foliar structure".