

and, in particular, the need for cowmanship. In his third lecture the differences in husbandry arising mainly from fertility-rates are discussed with respect to sheep and pigs, and in his final lecture an attempt is made to bring the present and the immediate future into perspective. Prof. Nichols points out that intensive management is best reserved for the phases during which intensive production takes place in order to reduce wastage of stock and conserve feed resources. In general, intensive conditions—whether they refer to housing, to feeding, to control or to stockmanship—are most needed and are best applied to the peak periods of lactation, to before and just after parturition, and again to the finishing period of bacon, pork, mutton and beef. So far as cattle are concerned, as part of the requirements for intensification, the simple point of dehorning comes into the picture; in itself it enables saving in space as well as of energy to be made.

### Soil Science in New Zealand

THE New Zealand Society of Soil Science held its first conference, under the presidency of Mr. N. H. Taylor (director of the Soil Bureau, N.Z. Department of Scientific and Industrial Research), as Section M of the eighth New Zealand Science Congress at Auckland in 1954. The proceedings have now been published (N.Z. Soc. Soil Sci., 54 Molesworth Street, Wellington, N.Z.; pp. 32; 4s.), and the presidential address issued as a reprint from the *Transactions of the Royal Society of New Zealand* (82, 961; 1955; 1s.). In his address, "The Role of Soil Science in New Zealand Problems", Mr. Taylor discussed the subject under four main headings: problems arising from the interdependence of land use and society, and from the use of soils for engineering purposes, for the growing of plants or for the support of animal life. Practical examples mentioned are the selection of the most suitable sites for urban development, road foundations and pipe-line corrosion, while on the biological side are questions of irrigation and forestry or the relationship between soil and the incidence of dental caries. During the conference, symposia were held on forest soils, the aims and values of soil analyses and on the pumice soils. Full summaries of the papers read on each occasion are published in the proceedings, together with the discussion that followed. Shorter abstracts are given of the papers contributed at other sessions.

### Automatic Recording of Temperature and Vapour Pressure or Dew-point

IN normal measurements of the humidity of the air near the surface, readings are taken of dry- and wet-bulb temperatures, and the vapour pressure, dew-point and relative humidity are calculated from tables. For automatic recording there are available the thermograph, giving a continuous record of dry-bulb or wet-bulb temperatures, and the hair hygrometer, giving a record of relative humidity. Again, the vapour pressure and dew-point have to be calculated from tables. To study the water economy of plants, continuous records of vapour pressure and dew-point are needed, and to obtain these Dr. U. Berger-Landefeldt, of the Technical University of Berlin, has devised an automatic electrical recorder which he describes in the December issue of *Weather* (10, 405; 1955). Continuous readings of wet- and dry-bulb thermometers are made and are arranged by suitable circuits to solve the hygrometric formula and give continuous records of dry-bulb temperature,

vapour pressure and dew-point. Records obtained by the instrument are shown in the article, and it is explained how the large variations in vapour pressure of 8 mm. of mercury are due to the vigorous transpiration of the alfalfa plants over which the instrument was placed.

### Formation and Properties of Diamonds

IN a paper entitled "Diamant" (*Zprávy Výzkumného ústavu pro minerály v Turnově*, 4, 577+33 figs.; 1955; Czech, with Russian, English and German summaries), Dr. Primus Ružička offers an explanation of the formation of diamond by the reaction  $2\text{CO} \rightarrow \text{CO}_2 + \text{C}$  under great pressure, the pressure finally building up enough to break through the sedimentary rocks and emplace the pipes of kimberlite. He employs this theory to link up a number of observations: sharp octahedra and holohedral forms crystallized more slowly and at lower pressures than rounded crystals, which mostly belong to the ditesseral polar (blende) symmetry class. Type II diamonds crystallized slowly at a lower pressure than type I; and the lamellar structure common in type II diamonds is due to the intercalation of layers of a graphite or 'pseudo-graphite' structure. Bort is regarded as a late product, formed during and after the emplacement of the kimberlite. An explanation of the differences, particularly in crystal habit, between diamond from different localities is offered. In the final sections (pp. 91–114), the anisotropy of the hardness of diamond is discussed, particularly in connexion with the industrial applications of diamond.

### Earthquakes during February

DURING February the greatest earthquake was of magnitude  $7\frac{1}{2}$ , and had its epicentre south of Honshu, Japan, with depth of focus 450 km. Earthquakes of magnitude between 6 and 7 occurred on February 1 in the Marianas Islands; on February 9 and later, aftershocks in Lower California; on February 12 and later, aftershocks near the north-west coast of Luzon, Philippine Islands; and on February 19 in the Queen Charlotte Islands. A shock on February 1 in the Fiji Islands had a depth of focus of 600 km. The swarm of shocks, with the principal one on February 9, in Lower California (epicentre south of the point  $32^\circ \text{N.}, 116^\circ \text{W.}$ ) did minor damage in the Imperial Valley and at San Diego, and many of the shocks were felt in Los Angeles. Of this swarm, twenty-nine shocks greater than magnitude 5 occurred during February 9–17, and according to the seismological laboratory at Pasadena the later epicentres were somewhat to the east of the principal one. On February 14 an earthquake with its epicentre near the east coast of Honshu caused several injuries and minor property damage in Tokyo. Its magnitude was  $5\frac{1}{2}$  and depth of focus 60 km. On February 15 in Peru an earthquake was responsible for two deaths in the Callehon Huaylas region, while on February 20 in Turkey an earthquake at Eskisehir caused extensive property damage and was responsible for the deaths of four people; many others were injured.

### Open Days at the Atomic Energy Research Establishment, Harwell

THE Atomic Energy Research Establishment at Harwell was founded ten years ago, and, to mark the occasion, a series of 'open days' is to be held in the week ending June 2. On the first four days, members of both Houses of Parliament, correspondents of the British, Commonwealth and foreign