same animal are not significantly different from one another. It has, therefore, been possible with the present results to pool the results for the individual bones of the same cat and compare the two sets of results directly. This comparison shows that the difference between the slopes is statistically significant. The results are summarized in Table 1.

Table 1

	No. of osteons	Correlation coefficient (individual)	(pooled)	Slope (individual)	(pooled)
Cat 4 Mandible	74	0·934		0·532	
Femur	27	0·930	0·933	0·555	0·539
Cat 5 Mandible	28	0·942		0·431	
Femur	29	0·939	0·948	0·420	0·429
Left humerus	17	0·942		0·441	

The relationship $r = kR$ implies that the maturation rate (dr/dt) is proportional to r, that is, $dr/dt = -Ar$, where A is a maturation rate constant. On integration between the limits $r = R$ for $t = 0$, $r = r$ for $t = t$ we obtain $r = Re^{-At}$, where $A = -1/t \log_e k$. Using the k values obtained on the pooled data for each cat, and the appropriate times t for the dose-intervals gives $A = 4{\cdot}42 \times 10^{-2}$ and $3{\cdot}03 \times 10^{-2}$ days^{-1} for cats 4 and 5 respectively.

If, for simplicity, one regards the osteon as circular, the total volume deposition in time dt is proportional to $2\pi r\ (dr/dt)$, and thus also proportional to the area of the canal. This seems to suggest that the rate of formation of the osteon is not related to the osteoblasts already present and active but possibly to the number of mesenchyme cells available for differentiation into osteoblasts.

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Roe Deer as Host for *Muellerius capillaris*

IN December 1962, a young roe buck was received at this laboratory for post-mortem examination. Incidental to other lesions there were about a dozen soft greyish nodules about 1·25 cm. diam. scattered throughout the surface and substance of the lungs. Microscopical examination of direct smears from these lesions revealed large numbers of first-stage *Muellerius capillaris* larvæ and several live embryos encased in egg capsules. No adult worms were identified, but their presence is inferred by these findings.

Cameron[1] describes only sheep and goat as the host range of this parasite and no record appears to exist of its isolation from roe deer in the British Isles. Since the buck referred to was in good condition and had been free until about ten days before death in an area where sheep are numerous on hill and marginal grazings it is likely that this species was the original source of infection. Lungs of five other roe from the same area have since been examined, however, without evidence of *M. capillaris* infection.

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Plant Growth Response in a Simulated Electric Field-environment

THE physiological effects on plant growth and plant growth response of environmental factors such as moisture, light, temperature, and similar functions are well documented. Literature relating almost all aspects of these environmental conditions is also quite extensive. Yet little is known of the physiological influence on plant growth of the electric field environment which prevails at all times everywhere. This communication shows that sufficiently high electric fields have a definite effect on plant growth and the growth response. Even though the simulated environmental conditions have been magnified rather grossly, it can be argued that under certain conditions affecting the charge balance in the ionosphere (such as radiation damage due to nuclear explosions[1] and other forms of ionospheric radiation damage[2]), these conditions could indeed exist in the terrestrial microclimate.

It has been previously shown by me[3] that plants can be grown in laboratory environments in a manner simulating the natural electric field conditions if the moisture content and electrode configurations are properly maintained. In experiments conducted thus far, seedling orchard grass was planted in two identical plots 400 in.^{2} in area. A d.c. potential was applied to aluminium wire mesh electrodes of one environment. The electrodes were situated one below the soil and one suspended above the soil on an adjustable frame supported by polyethylene rods. The top plate was charged positive with respect to the soil in order to simulate natural field conditions with reference to the Earth and the ionosphere. Various experimental field conditions were then obtained by varying the applied potential or the distance between the soil surface and the anode plate.

Each experimental run was continued for about 30 days or more. Following the first two weeks of growth, the plants in each environment (experimental and control) were clipped to a height of 1 in. The clippings were then dried, and the dry weights compared. After the initial two week clipping, the plants were harvested at intervals of one week so that 3 harvests or more could be made within a 30-day period. The dry weight comparison, which represented a population of 35 plants or more in each plot, revealed the fact that the activated plants produced less growth when growth as dry weight matter of these plants was expressed as a percentage of the control plant growth as dry weight. Fig. 1 shows the results of several dry weight analyses expressed as plant damage and plotted as a

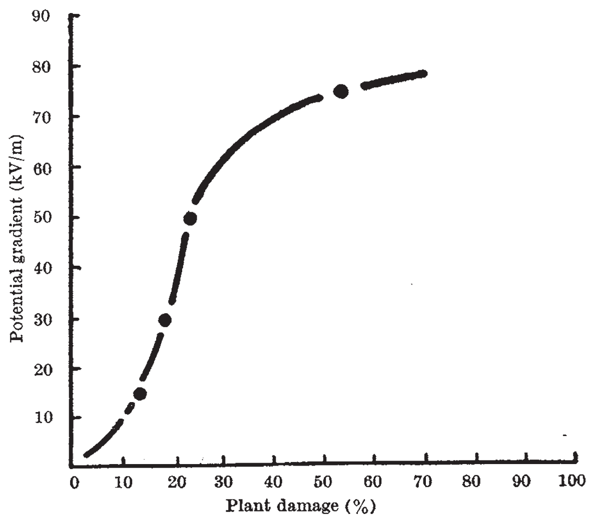

Fig. 1. Orchard grass plant growth response under various electric potential gradients based on an average of three dry weight comparisons of activated and control plants at each potential gradient condition