It would seem that the loss of pigment and eyes in subterranean species is by no means immediate, and is effected much more slowly than their restoration with the light. This is perhaps less surprising on reflection that the swift physiological response to light in higher animals includes a persistent effect—the 'after image'—which is longer in duration than the latent period of response to the stimulus; application and deprivation of light are here not of equal value when considered as environmental strains potent to disturb the constituents, and if they are not equally able to alter a temporary balance it may be they are also not equally able to alter the permanent architecture of animal cells. We should also recall that the effects of radiations, when affecting protoplasm, obey the rule required of any physiological stimulus that there be sufficient intensity applied for a specific minimum of time. This holds good in the physiology of vision and is well seen in the production of heritable effects by X-rays, as well as in therapeutic experience, both with radiations and radium; it may therefore be equally applicable in the case of such genetic modifications as may conceivably be produced by the prolonged effect of light (or its deprivation) on gonadal cells.

MICHAEL PERKINS.

5 Little Cloisters,
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Vitamin Contents of Grass Seeds from Treated Plots.

I HAD noted on my farm for many years the animals, especially pigs, that had been fed on home ground and home grown wheat and barley thrived better than those fed on purchased barley meal and 'cake'.

Following upon this, I pegged out in one of my fields two areas: one area was dressed with dung from animals to which foods containing a high content of vitamin B had been given; the other area of grass in

the same field received artificial manure. The spreading of the dung on the grass was at the rate of twenty loads to the acre, and the spreading of the artificial manure was at the following rate: basic slag 10 cwt. to the acre, kainit 3 cwt. to the acre, and sulphate of ammonia 1 cwt. to the acre.

In July of this year the grass was cut by hand and the seeds from the grasses of each area were kept absolutely separate. The seeds from these grasses were threshed out by hand and were fed to rats with the view of demonstrating the vitamin content of those grass seeds which had been grown on the dunged area and that grown on artificial manure.

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Chart No. 1 demonstrates the growth curve of rats fed on dunged grass seeds, and chart No. 2 demonstrates the growth curve of rats fed on the artificial manured grass seeds. I attribute the increased growth, as shown in Chart No. 1, on the dunged grass seeds, as due entirely to the vitamin B present in the excreta of the animals which had been fed on a high vitamin B content diet. This raises an extremely important point that vitamin B is present in the embryo of grass seeds and is entirely dependent, or certainly to a large extent, on the food consumed by the animal the excreta of which is used for the manufacturing of dung.

Further details will be published at a later date.

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Oct. 12.

Handling Molten Lead.

SEVERAL letters were published in issues of NATURE during September and October 1928 (vol. 122, pp. 349, 507, 610) under the title "Can the Hand be thrust in Molten Lead without Injury?" In reply to the inquiry, two correspondents testified from personal experience to the safety of the demonstration. As few people seem to have done the experiment even in these days, it may be of interest to publish the following description of it which has just come under my notice in a volume published so long ago as 1594 entitled "The Jewell House of Art and Nature". By Hugh Platte. (Printed by Peter Short, dwelling on Breadstreet Hill, at the signe of the Star and are to be solde in Paules Churchyard.)

"How a man may safely put his finger and hand into molten lead, without danger of burning."

"Take of quicksilver one ounce, Bole Armoniack of the best two ounces, Camphire half an ounce, common Aqua vitae two ounces, first beate, and then mingle all these well together with a pestle in a brazen mortar, then annoint your hands al ouer thrughly well with this ointment, and be sure that your hands are cleane without itch or scabbe. I did see a Dutchman called Haunce, a prety nimble Chimist, who after he had set some lead on the fire in a melting pot, till it became blewish and exceedingly hot, hee stirred the same first with his forefinger vp and downe, pretending to see whether it were not too hot to endure in the palme of his hande, and afterwards telling his fellow that it was of a good temper, he caused him to poure the same out being some half a pound in weight into the palme of his hande, first prepared as before, and presently he poured it into his other hand, and so out of one hand into another fiew or sixe times together, till in the ende he threw the same cold upon the ground. This hee did for a pot of the best Beere in a garden in Southwarke about ten or twelve yeeres sithence, in the presence of myself and diuers others."

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Regeneration of Spines in *Echinus esculentus*.

REGENERATION of the spines in *Echinus esculentus* is considered worthy of record, and is of importance with regard to the short fine spined forms which are sometimes obtained in the trawl or dredge. It seems probable that such natural, fine spined individuals, which are sufficiently strange to be regarded, not unreasonably, as a different species, may have been