In one fifteen-and-one-half-day transplant which was attached to the mesenteries of the host, the outer portion of the graft was covered with brown feathers, the inner portion possessed white plumage, and the characteristic brown pigment was lacking in the lower leg and foot. Furthermore, typical Brown Leghorn feathers covered the greater portion of the right wing of the host. Although this latter condition may have been due to a somatic variation, Dr. Harry L. Kempster, professor of poultry husbandry at the University of Missouri, joins me in the view that the pigmentation of the wing feathers has been induced by the graft. This case seems to indicate a mutual interaction between the host and transplant or between the hereditary constitution and the environment.

A diffusion gradient apparently does not explain these latter cases, since some well-attached grafts developed colored plumage and other less well-attached transplants possessed white feathers. Experiments are in progress which may shed additional light on the problem.

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NEW OBSERVATIONS ON THE EFFECTS OF CALCIUM DEPRIVATION:

The authors have observed that a profound neurological disturbance develops in growing rats maintained on diets very low in calcium (0.01 to 0.02 per cent.) which has heretofore not been associated with a deficiency of calcium. The neurological picture, which is quite complex, is suggestive of a diffuse lesion involving the cortex, basal ganglia, spinal cord and peripheral nerves.

The nervous condition is best demonstrated by subjecting the experimental animals to short and mild galvanic shocks from an induction coil after they have been on the low calcium ration for six weeks or more. This stimulus causes the rats to collapse. The rats remain conscious, but they respond poorly and sluggishly to all stimuli. They show little ability to right themselves or to grasp objects with their paws. The fore limbs remain relatively normal, but there is always a paralytic foot drop of one or both hind limbs. Immediately after the onset of the collapse, the tail becomes anesthetic, while the head and trunk appear to be hyperesthetic. After a lapse of about 24 hours, the head and trunk also become anesthetic. The normal propulsive locomotion of these animals is greatly altered, and they generally show a retropulsive response which is not observed in the normal rat.

The effects of the disturbance appear to be rever-

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