hitherto not been deposited electrolytically from aqueous solutions on a cathode, but this has been effected by Mr. R. Groves in this laboratory.

Mercury is the noblest metal on which we have succeeded in depositing these four metals by mere shaking. Amalgams of copper, bismuth, lead, tin, cadmium, and zinc show the effect in increasing amount, but only with molybdenum have we shown the presence of the catalytic metal by chemical means. The amount deposited must in all cases be very small. The electrode potentials of the four metals I have mentioned have never been accurately determined, but published work places uranium with manganese, titanium with zinc, and tungsten and molybdenum with cobalt and nickel in the list of electrode potentials of metals. These similarities are supported by the behaviour of the metals towards acids, the difficulty of reduction of their ions in aqueous solution to the metallic state, and such evidence. It is quite certain, in any case, that all four are more electro-positive than tin, and therefore than lead, copper, and mercury.

It is fortunate that each of the catalytic metals, as appears from measurements we are making, is quite insoluble in mercury. The very small concentration deposited on the amalgam by shaking thus forms a separate phase with practically no loss through solution in the mercury. It is this separate phase which is the catalyst for the hydrogen evolution which enables the small concentration to be detected.

A. S. RUSSELL.

Dr. Lee's Laboratory, Christ Church,
Oxford, Jan. 26.

Development of Golgi Apparatus in Water- and Soil-grown Roots of *Vicia faba* Seedlings.

WHILE *Vicia faba* is generally quoted as the type seed for successful germination in water under laboratory conditions, it is, nevertheless, noted that germination in sand is more rapid and much more reliable.

The rate of growth of a seedling root under normal conditions depends on the activity of the meristem, and of the region of elongation. This is directly related to the supply of available food material, which in turn is a function of metabolic rate, and consequently of respiration. The respiration of a non-hydrophyte, such as *Vicia faba*, might conceivably be adversely affected by growth in water. Two series of seedlings were therefore grown, one in water and one in sand, to determine whether the difference in growth rate was linked up with any constant cytological variation.

As has been already observed,[1] part of the food material visible in the cells of *Vicia faba* consists of Golgi apparatus, either in a reticular or granular form. The examination of fifty seedlings, varying in length from one to sixteen centimetres, showed that such a Golgi apparatus is commonly present in dermatogen and periblem in both water- and soil-grown roots. It may be temporarily absent in the primary root during the early stage of development of the secondaries. In the latter, as in the tertiary rootlets, it is also observed to occur. The fixation method used is described in detail in the paper referred to above. The sections were cut four to six microns thick.

FLORA MURRAY SCOTT.

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California.

[1] Scott, F. M., "Occurrence of Golgi Apparatus in the Seedling of Vicia faba", *Amer. Jour. Bot.*, **16**, No. 8, pp. 598-605; October 1929.

Swelling Pressure of Rubber.

MEASUREMENTS of the swelling pressure of rubber (Stamberger and Blow, *Koll. Zeitschr.*, **53**, 90; 1930) lead to the conclusion that the swelling pressure results from the attraction of solvent molecules by the molecules of gel. A simple formula expressing the variation of molecular force of attraction with dilution, $P = K/V^2$, has been applied and gives satisfactory results. In the present case P is the swelling pressure (MLT^{-2}), V is the volume of solvent bound to unit weight of jelly (L^3), K is a constant the meaning of which is obtained by substituting $P = K/V^2$ in the maximum work term $dA = P dV$.

K is characteristic for all solvents and jellies, and expresses the potential energy when unit volume of solvent is bound to unit weight of the gel. (The dimension of K is ML^5T^{-2}.)

The formula has been tested with all the data available and the constancy of PV^2 is fulfilled in a satisfactory manner.

Full details will be published shortly.

PAUL STAMBERGER.

The Netherland Government Rubber Institute,
Poortlandlaan, Delft,
Jan. 3.

The Black-necked Grebe.

I OWE thanks to the Writer of the Note on the black-necked grebe for correcting my error in naming Linnæus instead of Latham as responsible for the generic title of the grebes (NATURE, Feb. 7, p. 201); but when he goes on to say that the "name is a label and need have no meaning in itself", I must ask how a label can be justified that conveys a false meaning, as *Podiceps* does. Are misprints in scientific nomenclature to be reckoned indelible? That has not been the opinion of such ornithologists as Seebohm, A. H. Evans in the "Cambridge Natural History", and Prof. Alfred Newton, who all write *Podicipes*. In his "Dictionary of Birds", Newton notes about *Podicipedidæ*—"often, but erroneously, written *Podicipidæ*. The word *Podiceps*, as commonly spelt, being a contracted form of the original *Podicipes* (*cf.* Gloger, *Journal für Ornithologie*, 1854, p. 430, note), a combination of *podex*, *podicis*, and *pes*, *pedis*, its further compounds must be in accordance with its derivation".

HERBERT MAXWELL.

Monreith.

Embryology and Evolution.

IN NATURE of Jan. 10, Prof. MacBride appears to deny that a cross between two types of *Cavia* to which I referred, and which leads to Mendelian segregation, was an interspecific cross. Not only did Detlefsen,[1] who carried it out, regard it as such, but, also, the male hybrids were wholly sterile. In view of the latter fact, I did not suppose that Prof. MacBride would question its interspecific nature.

In spite of Prof. MacBride's disbelief in autocatalysis, I hope to demonstrate this phenomenon to students of the Natural Sciences Tripos next week, as I have done annually for some years.

J. B. S. HALDANE.

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Jan. 31.

Detlefsen, *Pub.* 205, Carn. Inst. Wash.

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