from the other sources mentioned above sometimes required addition of carbon dioxide-free ethanol in order to cause crystallization.

Arginine absorbs carbon dioxide from the air, but this may be driven off by boiling the solution of recrystallization.

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FAILURE OF ALFALFA TO PREVENT THE HEMORRHAGIC SWEETCLOVER DISEASE[1]

IN 1922, Schofield[2] showed that the feeding of poorly cured sweetclover hay may induce in the bovine a disease characterized by a diminished clotting power of the blood. The disturbance of the clotting mechanism has since been found to be due to a deficiency in prothrombin.[3,4] Continued administration of a toxic diet results in severe, usually fatal hemorrhage.

In a recent paper on one phase of this problem, Quick[5] concludes from experiments with rabbits that "Diet is the important means for controlling the disease. The incorporation of 5 per cent. of dehydrated alfalfa meal with the toxic hay was found sufficient to prevent the development of the disease or even any demonstrable reduction of prothrombin." It is also stated that "The animal appears to be able to store this accessory factor [from alfalfa], for it is very difficult to produce sweetclover disease in animals that have been fed relatively large amounts of alfalfa. This explains why some animals are far more resistant than others to the same lot of spoiled hay." Quick points out the practical significance of these conclusions and suggests the relation of this accessory factor to the anti-hemorrhagic vitamin K which is required by the chick for normal blood coagulation and is present in alfalfa. These conclusions, of significance in agriculture and in studies of factors affecting the mechanism of blood coagulation, are not in agreement with the results of our experiments with rabbits. The details of these experiments will be recorded elsewhere, but the salient features will be presented at this time.

We have found no indication that alfalfa exerts a protective action against the sweetclover disease. Rabbits have been fed alfalfa to the amount of 50 per cent. of the diet along with toxic hay and toxic extracts. Nevertheless the symptoms of the disease have appeared. Freshly cut alfalfa constituting 12.9 per cent. (dry weight) of the ration and kiln-dried alfalfa constituting 10 per cent. each in a diet of toxic hay failed to inhibit the action of the toxic principle. Likewise a commercial alfalfa hay of excellent quality when incorporated to the amount of 10 per cent. in a toxic hay was ineffective in checking the onset and fatal termination of the disease.

A marked variation within a group of rabbits of similar age in reaction to a given toxic hay has been observed in our experiments. Animals found susceptible in a preliminary test on a uniform diet have maintained their susceptibility in further subjection to the action of the toxic principle. In like manner resistant animals in as far as they have been tested have been resistant in later trials on the same hay. Furthermore, no significant differences have been observed between groups of rabbits having had alfalfa or no alfalfa during the period prior to a test on toxic hay. These and related considerations arising from experiments on some 150 rabbits suggest that the variation in a group of rabbits in reaction to a given toxic hay is due to the inherent characteristics of the animals; there is no evidence in our experiments that the variation results from previous feeding.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

STATIC ELECTRIC PROPERTIES OF A NEW BAKELITE PLASTIC

RECENTLY the Bakelite Corporation has put on the market a new plastic designated as polystyrene XMS–10023. It was described as an excellent electric insulator. In the search for some material that could be used as insulator in static electric experiments the writers tested this material by electrometric methods. While amber has all the desirable properties for an insulator it is rather expensive and, particularly, not easily obtainable in larger dimensions. XMS–10023 can be molded readily into any given shape without restriction as to size.

The electric resistivity was compared to that of amber and of a shellac-coated hard rubber, with the approximate relative results shown in the following table:

[1] Contribution from the Department of Genetics (Paper No. 226), Wisconsin Agricultural Experiment Station in cooperation with the Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture. Cooperative investigations with the Biochemistry Research Laboratory, Department of Agricultural Chemistry, Wisconsin Agricultural Experiment Station.

[2] F. W. Schofield, *Can. Vet. Record*, 3: 74–78, 1922.

[3] L. M. Roderick, *Am. Jour. Physiol.*, 96: 413–425, 1931.

[4] A. J. Quick, *Jour. Biol. Chem. Proc.*, 114: lxxxii, 1936.

[5] A. J. Quick, *Am. Jour. Physiol.*, 118: 260–271, 1937.