soluble pigments which have shown negligible or no biological activity.

As both Mann and Zechmeister show that solutions of β-carotene tend to isomerize with heat or standing, and upon isomerization have a lowered molecular extinction coefficient with altered absorption maxima, we would direct the attention of workers to the necessity for the use of as little heat as possible in preparing β-carotene extracts of dried grass, and the further necessity for as rapid estimation as possible of the β-carotene in the solution.

Both of us have suggested the use of chromatographic methods for the separation of β-carotene from all other pigments occurring in dried grass[3,4], and we propose to communicate with other workers interested in this subject in order to promote examination of methods which may produce more concordant results than are obtained at present.

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Preparation of Silicic Acid Jellies for Bacteriological Purposes

For the preparation of jellies intended for the cultivation of micro-organisms, agar-agar is generally used. For some purposes, however, it is desirable to have an opportunity of obtaining cultures of bacteria or fungi on inorganic gels to which only known substances are added. Agar-agar is an organic substance varying in composition and containing other organic substances, which may influence the cultivation of bacteria. Attempts have been made to prepare gels, for example, of silicic acid; sodium silicate and hydrochloric acid were used for the purpose[1,2,3,4]. But this method entails certain difficulties. Instead we have tried to make silica gels for bacteriological purposes from *ortho*-silicic acid tetramethyl ester, $Si(OCH_3)_4$. When water is added to this silico-compound, silicic acid and methanol are formed, and the solution is transformed into a firm coherent gel as clear as glass. This gel formation was observed by Grimaux[5].

The simplest method for the preparation of these gels is to autoclave a mixture of the silico-ester and a suitable nutrient solution in the usual way in a test-tube, in which the gel is formed, the tube being sterilized simultaneously. After the sterilization, the tube must not be cooled too fast as the gel is then apt to crack. The best way of avoiding bubbles and cracks during sterilization of the gel is to employ boiled water or boiled nutrient solution.

During the hydrolysis, however, methanol is formed, which does not completely disappear on auto claving and prevents more delicate bacteria from growing. In order to enable such bacteria to grow it is necessary to remove the methanol entirely and to this end a more complicated method must be employed. We therefore propose the following method. 1 ml. $Si(OCH_3)_4$ is mixed with 10–20 mm water, when there appears a slight turbidity. The solution is centrifuged until it becomes clear and then poured into tubes or other suitable vessel. The solution becomes a clear gel when the vessel have been left standing at room temperature for some days or are kept warm in an autoclave in the usual way. Water is poured over the gel, and the methanol diffuses into the water and is thus removed. The water is replaced by a suitable nutrient solution to which buffer substances may be added to give the gel a suitable *p*H. The tubes must be kept at a temperature high enough to prevent the growth of bacteria. When the gel has absorbed the nutrien substances for some time, the liquid above the surface of the gel is poured out, the tubes are autoclaved in the usual way, and are then ready for use

The silica gels are more apt to dry up than agar agar, so they ought to be kept in moist air, for example, in a closed jar with some water in the bottom.

The gels have been tested by cultivation of *Bac vulgatus*, *Leuconostoc mesenteroides* and *Schizosaccharomyces* Pombe, and in all cases the results were positive. Investigations concerning the applicability for bacteriological purposes of silicic acid gels from the methyl ester will be continued by Dr. H. Laurell.

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Enamel Cuticle (Nasmyth's Membrane) and Tartar Deposition in the Ferret

A form of parodontal disease has been previously described, in which the initial lesion of the gum was caused by the impingement and eventual penetration of salivary calculus[1,2]. Both tartar deposition and gingival disease were prevented by including in the diet short lengths of bone with small amounts of muscle, tendon and periosteum left *in situ*. The latter attachments fed separately had no prophylactic influence, and their importance lay in their providing the main inducement to gnawing of the bone by the animals. The tartar-preventing action of bone-gnawing was largely due to the mechanical friction of the hard bone against the tooth surfaces, and its curative effect on established parodontal lesions was also demonstrated.

While the precise cause of these calcareous accretions is still undetermined, a series of recent observations has led me to believe that the enamel cuticle