

NOTES

A NEW METHOD FOR THE PREPARATION OF SILICA GEL PLATES

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Previous methods of preparing silica gel media are based on a chemical reaction between sodium silicate and hydrochloric acid, or more recently between an organic orthosilicate and water (Ingelman and Jullander: *Nature*, **156**, 572, 1945; Ingelman and Laurell: *J. Bact.*, **53**, 364, 1947). In these methods undesired products of reaction are removed by washing, and nutrients are added by allowing the desired nutrient solution to soak in.

The availability of highly purified colloidal silica preparations suggested the possibility of preparing silica gels for bacteriological purposes simply and directly. This has been done with two commercial preparations. The material marketed under the trade name of "ludox" (du Pont) consists of a 30 per cent aqueous solution of colloidal silica. With this solution, diluted to 10 per cent silica, desired nutrients may be added and dissolved, the pH adjusted as desired, and the medium autoclaved in petri dishes, simultaneously bringing about gelation. A 10 per cent silica gel successfully replaces agar in Waksman's thiosulfate agar medium and supports growth of *Thiobacillus thiooxidans*, the colonies being similar to those on thiosulfate agar. Similarly a 10 per cent silica solution prepared from colloidal silica (Linde Air Products Company) yields identical results. With this product a colloid mill is necessary to disperse the dry silica powder in the liquid medium.

The silica gel plates prepared with these materials are rigid enough for easy streaking. They are not clear and transparent, as are those produced by the other methods, but are cloudy and translucent, although colonies may be seen through the thickness of the gel. Since silica gel is more susceptible to drying and cracking than agar, the plates are autoclaved in a canister, allowed to cool slowly, and incubated in a container containing some water.