

It would not, however, be safe to infer the use of alun in every case in which a reaction for alumina was obtained. Owing to the prone habit of cucumbers, and the liability to take up, in the creases of the pericarp, minute particles of clay, and further to the possibility of a slight solubility of such clay by prolonged contact with acetic acid, it may be that, where merely traces of alumina were found, these may be accounted for, as above suggested. It is however, noteworthy that 124 samples gave no reaction with tests for alumina. This fact seems to warrant the conclusion that, where *distinct* traces of alumina are found in solution, the use of alun is indicated.

The only preservatives found (other than the vinegar) were salicylic acid and sulphurous acid, the latter probably used as acid sulphite of lime. Twelve (12) samples gave reactions for salicylic acid; 137 samples gave no reaction.

Twelve (12) samples gave reactions for sulphurous acid. Of this number, 4 were prepared with mustard (so-called Chow-Chow). In view of the fact that mustard contains sulphur, which might under certain conditions (e.g. boiling with saltpetre) yield sulphurous acid, it is important to note that six (6) other samples of this class of pickle gave no reactions for sulphurous acid.

Sulphurous acid or a sulphite, may be employed either or both for the purpose of bleaching certain vegetable tissues (Cauliflower, onion, &c.), and as a preservative. Of course different manufacturers have different methods of working; and the objects aimed at by various trade practices, can only be surmised by an outsider.

This is the first occasion upon which pickles have been examined in this laboratory. We have no standard defined for this article of food, nor is it easy to formulate such. The United States Standards of 1906, define Pickles as "Clean, sound, immature cucumbers, properly prepared, without taking up any metallic compound other than salt, and preserved in any kind of vinegar, with or without spices; *pickled onions, pickled beets, pickled beans*, and other pickled vegetables, are vegetables prepared as described above and conform in name to the vegetable used."

The present report must be regarded as a first contribution to the study of pickles, as found on Canadian markets.

I beg to recommend its publication as Bulletin 163.

I have the honour to be, Sir,
Your obedient servant,

A. MCGILL,
Chief Analyst.