The commercial is supposed to be a 15 volume solution; that is one which yields fifteen times its own volume of oxygen gas.

The results of these experiments was that 56 per cent. of the samples contained from 7 to 9 volumes of oxygen, 8 per cent. contained no hydrogen peroxid, and the remaining 36 per cent. were regarded deficient inasmuch as they contained less than two per cent.

Regarding acidity, a good reaction for hydrochloric acid was obtained in thirty-three samples, and for sulphuric acid in twelve. Sometimes one only was present, sometimes both. Boric acid was present in small amounts in eighteen cases, and barium in two. These acids are either residues from the process of manufacture or they are added with a view of giving greater stability to the preparations. From whatever cause, they are objectionable impurities.

To obtain the best results from medication it is necessary to have the purest drugs; hence the necessity of securing those of the most reliable makes, and in original packages from the manufacturer, unless they can be secured fresh from a reliable druggist.

Now, while it is important to obtain pure drugs, it is equally important to preserve them in this state. Many drugs deteriorate in quality if proper precautions are not used for their preservation. Dental medicines are particularly prone to do so, for the dentist uses the majority of drugs so slowly that a supply will last him much longer than the physician. So the care of drugs is a very important factor in their preservation. In way of illustration, we will enumerate a few that deteriorate if not properly cared for.

From the above analysis of hydrogen peroxid we see that there is a considerable and variable difference in the quality of the solutions, even in those of the same make at different times, and the quality is roughly indicated by the differing tendency to spontaneous decomposition in different bottles.

The purer the solution the less liable is it to decompose, and this is, in a degree, independent of the strength of the solution and the temperature at which it is kept.

Solutions of the commercial articl⁵, however, are very unstable and should be kept in glass-stoppered bottles, protected from light and heat. Hydrogen peroxid, ordinarily obtained, gives up a part of its oxygen at a temperature of about 34° F. and the amount is increased in proportion as the temperature is raised. Hence the necessity of keeping in a cool place, such as an ice-chest or water cooler.

Among other drugs used in dentistry that are affected by light, heat or exposure may be mentioned:

Bichlorid of mercury solutions.—They are gradually decomposed on exposure to light or in contact with organic matter.