HYPOCHLORITE SOLUTIONS.

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(*Continued from p. 330, April* JOURNAL A. PH. A.)

(NO. 5) APPENDIX.

The popularity of inorganic hypochlorite solutions has resulted in the introduction of these under special trade names. This is also true of the "chloramine" type of compounds. Hence a glossary of such titles as could be found seems desirable and is here appended. It is divided into (1) organic chlorine antiseptics; (2) inorganic chlorine antiseptics; and (3) pharmacopœial synonomy for Labarraques Solution.

1. ORGANIC CHLORINE ANTISEPTICS.

Chloramine-T.—"The abbreviated name for sodium paratoluene sulphonchloramide. It is water-soluble."

Dichloramine-T.—"A still more powerful antiseptic than chloramine-T, having both hydrogens of the amino group of the toluene sulphonamide replaced by chlorine. This is not water-soluble but is used in oil solution."

Chlorazene.—"A trade name for chloramine-T." (N. N. R. 1922.)

Chlorolyptus.—A chlorinated eucalyptus oil containing 30 per cent. chlorine in relatively stable combination. Claimed to be a new chlorinated antiseptic. According to A. M. A. Chem. Laboratory, Chlorolyptus is a feeble antiseptic. (Y. B. 1920.)

Lysochlor.—Dichlorebenzene rendered soluble by soap. It is used in a 5 per cent. solution as a disinfectant of wounds. (Y. B. 1918.)

Halazone.—Parasulphonedichloramidobenzoic acid. (N. N. R. 1922.)

2. INORGANIC CHLORINE ANTISEPTICS.

Antiformin.—A strong alkaline solution of sodium hypochlorite prepared by treating chlorinated lime with soda, filtering off the sodium hypochlorite and adding sodium hydroxide to the filtrate. (Y. B. 1914.)

Caporit.—Formerly hyporit, according to Herzog a freshly prepared solution containing 40.3 per cent. available Cl, after 10 days 37.8 per cent., after 3 months 34.8 per cent. Solution was not well stoppered. Ordinary cork used. (Y. B. 1920.)

Chlorax.—A stable solution of chlorine, according to literature from Cl. Prod. Co. Analysis given as free chlorine 0.030%, lithium chloride 0.035%, calcium hydrate 0.010%, opium 0.016% and ethyl alcohol 0.078%. (Trade Literature.)

Chloron.—A stable solution of chlorine according to literature from Cl. Prod. Co. Analysis given as free chlorine 0.200%, calcium chloride 0.190%, mercurous chloride 0.030%, lithium chloride 0.035%, calcium hydrate 0.010%. (Trade Literature.)

Desazon.—A preparation given to soldiers to purify their drinking water. One ampul containing 0.2 Gm. 75 per cent. chlorinated lime, the other containing 0.35 Gm. ortezone (a combination of water and urea). The first capsule is sufficient to sterilize 1 liter of water and the ortezone is added to destroy the remaining chlorine taste and odor. (Y. B. 1916.)

Disinfecting Paste (Chlorinated).—Consists of boric acid 10 parts, talc 15 parts and chlorinated lime 2 parts made into a paste with water. (Y. B. 1918.)

Fecto.—A chlorine antiseptic described as an aqueous solution of alkaline hypochloritis with a trace of free chlorine. (Y. B. 1920.)

Hyporite.—According to Michaels is a pure calcium hypochlorite containing a little calcium chloride and a very little lime. In form of a powder. (Y. B. 1919.)

Hychlorite.—A solution of chlorinated soda, each 100 Gm. of which is said to contain sodium hypochlorite 4.05 Gm., sodium chloride 3.20 Gm., calcium hydroxide 0.17 Gm., inert salts 0.92 Gm. It contains not less than 3.85 per cent. of available chlorine. (N. N. R. 922.)

3. PHARMACOPŒIAL SYNONYMY.

Labarraque's solution was first introduced into the U. S. P. in the 1840 revision, under the official Latin title, *Liquor Sodæ Chlorinatæ.* This title continued until the revisions of 1880 and 1890, in which it was changed to *Liquor Sodæ Chloratæ.* In the 1900 and 1910 revision the original official Latin title, *viz., Liquor Sodæ Chlorinatæ*, was restored.

The official English title of the 1840 revision, *viz., Solution of Chlorinated Soda*, was used throughout.

Although the solution was originally known as Labarraque's Solution, this name was not introduced as a synonym until 1880. It appeared in all of the following revisions, however, in the index only of the 1900 revision. The last revision of the U. S. P., that of 1910, introduced the official abbreviation, *Liq. Sod. Chlorinat.*

The official Latin title for the revisions of 1880 and 1890, *viz., Liquor Sodæ Chloratæ*, might be looked upon as a misnomer. According to the nomenclature of the 1870 revision, *Sodæ Chloratæ* would be sodium chlorate, hence the title *Liquor Sodæ Chloratæ* would mean solution of sodium chlorate. Inasmuch as the solution contains a mixture of the chlorine salts of sodium, the above assumption might prevail.

The following is a list of Pharmacopœial titles and synonyms for Labarraque's Solution:

Belgian Pharmacopœia.

1854—Chloruretum Sodæ Liquidum.
Chlorure de Soude'.
Hypochlorite Sodique.
Chlorite de Soude.
Liquor de Labarraque.
Liquor natri chlorosi.

1855—Hypochlorite Sodique' Liquide.
Hypochloris Sodii Liquidus.

British Pharmacopœia.

1864—Liquor Sodæ Chloratæ.
Solution of Chlorinated Soda.

1885—Liquor Sodæ Chlorinatæ.
Solution of Chlorinated Soda.

French Pharmacopœia.

1837—Hypochlorite de Soude Liquide.
Hypochloris Sodius Aqua Solutus.
Chloure de soude.
Chlorite de soude.
Liquor de Labarraque.

1866—Same, except "chlorite de Soude" dropped.

1908—Soude (Chlorurede) Discous.
Natrium Hypochlorosum solutum.
Solution officinale D'Hypochloride de Soude.
Liquor de Labarraque.

German Pharmacopœia.

1872—Liquor Natri chlorati.
Blichfluessigkeit.
Liquor Natri Hypochlorosi.

India, Pharmacopœia of

1868—Liquor Sodæ Chloratæ.
Solution of Chlorinated Soda.

Italian Pharmacopœia.

1892—Ipochlorito di Sodio.
Hypochloris natrii.
Chloruro di soda.
Liquor di Labarraque.

London Pharmacopœia.

1838—Liquor Sodæ Chlorinatæ.
Solution of Chlorinated Soda.

Mexican Pharmacopœia.

1874—Hipochlorito de Soso.
Chlorue de Soso.
Chlorito de Soso.
Chloruro desinfectante.
Licor de Labarraque.
Hypochloris Sodicus aqua solutus.
1904—Hipochlorito de sodio liquido.
Hypochloris sodicus aqua solutus.

Portuguese Pharmacopœia.

1876—Soluto de Soda Chlorada.
Solutum Natri chlorati.
Soluto de Hypo-chlorito de Soda.
Chloruseto de Soda Liquido.

Spanish Pharmacopœia.

1884—Solucion de Hipochlorito Sodico.
Solutum hypochlorites sodici.
Hipochlorito de Sosa Liquido.
Churo de Soso Liquido.
Licor de Labarraque.
Hypochloris sodæ liquidus.
Chlorurum sodæ liquidum.
Chlorurum sodæ liquidum.
Liquor vel aqua ex Labarraque.
1905—Same.

United States Pharmacopœia.

1840—Liquor Sodæ Chlorinatæ.
Solution of Chlorinated Soda.
1850—Same.
1860—Same.
1870—Same.
1880—Liquor Sodæ Chloratæ.
Solution of Chlorinated Soda.
Labarraque's Solution.
1890—Same.
1900—Liquor Sodæ Chlorinatæ.
Solution of Chlorinated Soda.
Labarraque's Solution. (In index.)
1910—Liquor Sodæ Chlorinatæ.
Solution of Chlorinated Soda.
Labarraque's Solution.
Liq. Sod. Chlorinat.

ADDENDUM.

Since the publication of the first number of this review, several reprints and references have been received, relating to hypochlorite solutions. It was stated in the prefatory remarks that the review was incomplete. However an attempt was made to bring out the several phases of the work done so far. A complete bibliography with a classified index was considered, but after several months' work was set aside as being "never ending." One reprint received offers a "quick" process for preparing a hypochlorite solution. The procedure is as follows: Dilute 1 volume of chlorinated soda solution (2.8–2.9 per cent. avail. Cl) with 5 volumes of water, add 25 cc. of sodium bicarbonate solution (approx. 5 per cent.) for every liter of chlorinated soda, and mix well. Remove about 20 cc. of the solution, add to it a small pinch of phenolphthalein, and shake gently for two minutes. If no red color appears the solution is ready for use. If a red color appears add from 10 to 20 cc. more of sodium bicarbonate solution and repeat the test. The sodium bicarbonate solution is to be added until no red color appears when the phenolphthalein test is applied. (Rosengarten, J. A. M. A., Vol. 64, p. 1075.)

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