

The true diagnosis of Vincent's infection can be made only in a medical or dental laboratory with the use of the microscope. Whenever the uncomfortable symptoms of a persistent sore mouth are experienced, that person should immediately consult his dentist or his physician for treatment. Vincent's infection cannot be treated at home with household remedies. In the first place, it could not be properly diagnosed, and the danger of its becoming acute, with serious after-results, would be great.

In case a dentist or a physician is not available, the treatment should be the use of a mouth wash at frequent intervals until skilled treatment can be obtained. Undoubtedly the micro-organism causing this disease cannot live or keep its virulent nature in the presence of air or free oxygen. Although it might continue to exist for some time in the presence of oxygen, it will not multiply. It is evident, then, that any oxygen-liberating compound will check the growth of these organisms. For this purpose there are three outstanding drugs which may be used as an efficient mouth wash. They are hydrogen peroxide, potassium permanganate and sodium perborate.

Hydrogen peroxide is capable of liberating 10 volumes of oxygen. When used as a mouth wash, diluted with equal volumes of water and used at frequent intervals, forcibly working it back and forth in the mouth by contraction of the lips and cheek muscles, it will serve very well as a temporary measure.

Potassium permanganate in 1:5000 dilution is good, although it has a disagreeable taste. Sodium perborate is readily soluble in water, and when freshly dissolved liberates about nine per cent oxygen. It is a good home remedy. The solution should be freshly prepared; the perborate should be kept in a cool place; instructions should be given to purchaser. Any of these remedies will serve as a temporary expedient until the services of a dentist can be secured; but it is dangerous to delay treatment if it can be possibly obtained.

During the acute stage the toothbrush should not be used, as it is likely to cause a hemorrhage by forcibly removing the diseased membrane. This would furnish more pabulum for bacterial growth.

Although the outlook in Vincent's infection is favorable and the condition usually responds quickly to competent treatment, neglect may result seriously as the micro-organisms causing this disease have been isolated from other more serious diseases such as meningitis, peritonitis and diabetes. Most cases of Vincent's infection can be cured with proper treatment.

TIN-PLATED LEAD TUBES. THEIR USEFULNESS AS CONTAINERS FOR TOILET PRODUCTS.*

BY R. VAN WINKLE AND W. G. CHRISTIANSEN.

In Europe, particularly in France, tin-plated lead tubes have come into quite extensive use for the marketing of various creams. In view of the toxic effects produced by the assimilation of lead, it became of definite importance that the extent to which materials packaged in tin-coated lead tubes become contaminated with lead be known. For this study both American and imported tin-plated tubes

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were used and as examples of creams of interest Squibb Dental and Shaving Cream were selected because in this way non-soapy and soapy creams were being examined.

PERFECTION OF TIN COATING.

The tin layer on the inside of numerous lead tubes was examined with a high-powered magnifying lens. In none of our examinations were we able to find a perfectly uniform tin coating. Striations were always observed parallel to the sides of the tube. The bluish luster of lead could be observed along these striations in contrast with the silvery appearance of the tin. In the head of the tube near the orifice cracks in the tin surface were very apparent wherever a sharp bend occurred. From the above examination we were inclined to believe that the tin-plated lead tubes had exposed lead surfaces. To show this more markedly we subjected the tin-plated lead surface to the action of a solution of ammonium nitrate and ammonium sulfate. The latter solution has a solvent action upon lead but not upon tin. By adding potassium dichromate to this solution we obtained a yellow lead dichromate precipitate wherever the lead surface was not covered by tin. The latter tests confirmed our examination with the magnifying lens. In these examinations it might be stated that the foreign make tube showed itself superior to the American manufactured tube.

CORROSIVE ACTION ON TUBES.

It was found that 5% solutions of either dental or shaving cream produced some corrosion of the tin-plated lead tubes; p_H solutions ranging from 9-11 which includes both our dental and shaving cream showed no corrosive action indicating that the cause was not due to the p_H but to some constituent of the creams. Shaving cream showed a greater corrosive action on the tin-plated lead tubes than dental cream. Tubes containing the latter after eight months' storage only showed slight signs of corrosion. No change was observed in either the dental or shaving cream when packaged in tin-lined lead tubes under normal conditions of storage.

LEAD CONTENT OF CREAMS.

American Tubes.

Shaving Cream—Tin-Plated Lead Tube.			Dental Cream—Tin-Plated Lead Tube.		
Time of storage.	Temp. of storage.	% Pb in cream.	Time of storage.	Temp. of storage.	% Pb.
3 weeks	0° C.	0.015%	3 weeks	0° C.	0.007%
	20° C.	0.006%		20° C.	0.001%
	80° C.	0.016%		80° C.	0.008%
8 weeks	0° C.	0.010%	8 weeks	0° C.	0.001%
	20° C.	0.012%		20° C.	0.002%
	80° C.	0.039%		80° C.	0.003%
8 months	20° C.	0.025%	8 months	20° C.	0.006%
Plain Lead Tubes—Controls.			Plain Lead Tubes—Controls.		
3 weeks	0° C.	0.064%	3 weeks	0° C.	0.015%
	20° C.	0.035%		20° C.	0.003%
	80° C.	0.057%		80° C.	0.010%
8 weeks	0° C.	0.018%	8 weeks	0° C.	0.008%
	20° C.	0.035%		20° C.	0.010%
	80° C.	0.038%		80° C.	0.017%
8 months	20° C.	0.048%	8 months	0° C.	0.017%

Foreign Tubes—France—Krieg and Zivy.

Dental Cream—Tin-Plated Lead Tube.

Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.	Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.
6%	1 month	20° C.	0.0%	8.30%	2½ months	20° C.	0.0%
	2½ months	20° C.	0.002%		2½ months	80° C.	0.0012%
6.90%	2½ months	20° C.	0.0%	9.10%	2½ months	20° C.	0.0001%
	2½ months	80° C.	0.002%		2½ months	80° C.	0.0002%
7.60%	2½ months	20° C.	0.0008%	9.80%	2½ months	20° C.	0.0%
	2½ months	80° C.	0.0004%		2½ months	80° C.	0.0002%

Results of 0.0001–0.0002% in the above chart are within the experimental error and may be considered practically zero.

Shaving Cream—Tin-Plated Lead Tubes.

Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.
6%	1 month	20° C.	0.0%
	2½ months	20° C.	0.004%

Method of Analysis.—The method used varied slightly according to whether dental or shaving cream was being analyzed. The contents of an entire tube (50–90 Gm.) were taken for each analysis. The creams were decomposed by nitric acid, thereby putting the lead in solution as lead nitrate. From the latter solution which was thoroughly filtered and extracted with ether the lead was precipitated as the sulfide. The latter was removed from the solution, washed, dissolved and the resulting solution fumed with sulfuric acid. Upon dilution the lead precipitated as $PbSO_4$ which was filtered off and weighed.

In all of the above work our regular pure tin tubes were used as controls. In no case were we able to get a qualitative test for tin on creams stored in the same or in lead tubes which were tin plated.

From a comparison of our quantitative results the superiority of the foreign make tube over that manufactured in America is very apparent. This was indicated in our preliminary examination. Of the tubes manufactured by the firm of Krieg and Zivy those containing the maximum amount of tin as would be expected are the best. We are under the impression that this type of tube is being extensively used in Europe. Although the above data cannot be considered sufficiently extensive to definitely draw a conclusion, it is very indicative of the fact that tubes such as those containing 9% tin, as a coating, would be quite satisfactory from the standpoint of a container for dental or shaving creams.

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DIETHYL BARBITURIC ACID IMPORTS INTO THE UNITED STATES INCREASING.

Diethyl barbituric acid imports into the United States are increasing, there having been imported for consumption during the first seven months of 1928 an amount equal to that imported during the entire calendar year of

1927—15,000 pounds. Imports for consumption of diethyl barbituric acid and sodium salt in 1924 amounted to 1221 pounds valued at \$2218 and the 1927 imports of "Diethyl barbituric acid and derivatives" amounted to 15,502 pounds valued at \$132,084. An increase in the invoice price for "Veronal" is noted from \$1.82, in 1924, to \$8.50 in 1928.