

IDEA EXCHANGE

This section of the BULLETIN is being devoted to new ideas which have proved of value in CDC activities. The purpose of this section is to exchange ideas among operating units of CDC. Contributions from the field are solicited. Any idea developed locally that can have wider application, even if not new, is welcome. Send it in!

USE OF POLYVINYL ALCOHOL TO PRESERVE FECAL SMEARS FOR SUBSEQUENT STAINING

Developed by

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Fecal samples are often mailed to distant laboratories for diagnosis, either preserved with formalin or phenol or in an unpreserved condition. These procedures are adequate for the subsequent identification of any protozoan cysts and helminth forms present, but protozoan trophozoites are almost always destroyed or rendered unrecognizable.

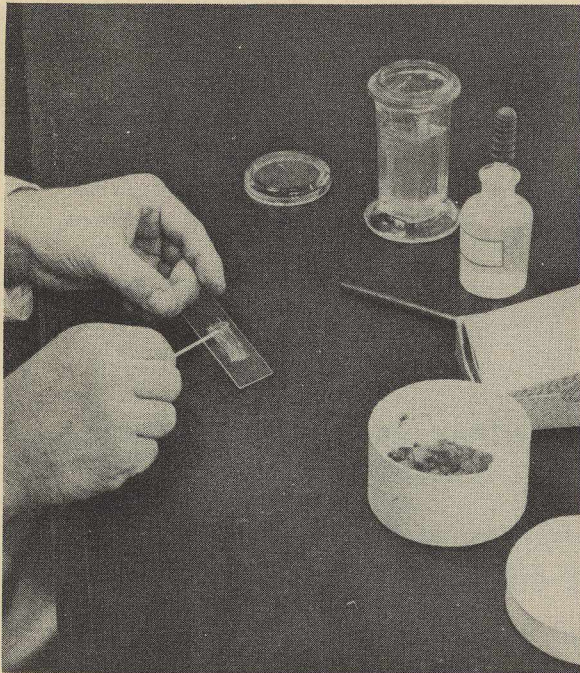
This idea* involves a method which makes it possible to submit trophozoite material in fixed smears on slides, to be stained and examined when received in the diagnostic laboratory. A fixative is added to water-soluble polyvinyl alcohol,** which then serves the dual purpose of fixing the fecal and forming a temporary mount during shipment.

The mounting medium is prepared by dissolving, in a water bath, 5 grams of Elvanol in the following solution: glacial acetic acid, 5 cc.; glycerol, 1.5 cc.; Schandinn's fixative (2 parts of saturated aqueous mercuric chloride to one part of 95% alcohol), to 100 cc.

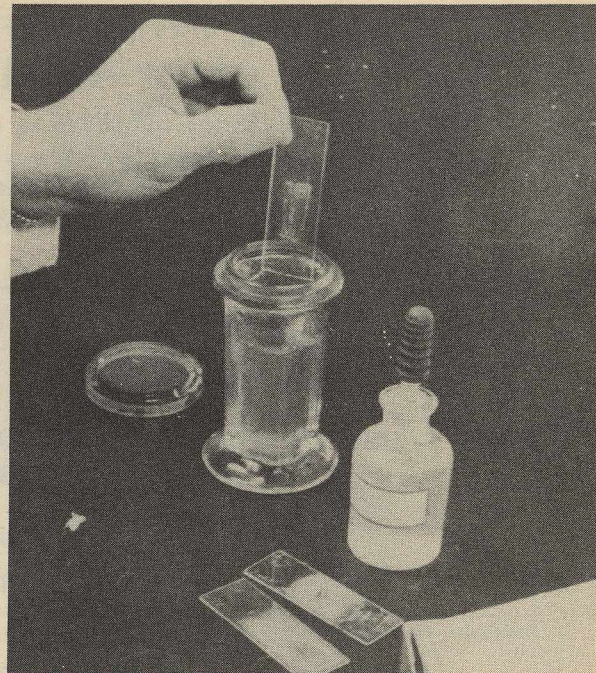
Preliminary experiments show that protozoan cysts and trophozoites as well as helminth eggs are well preserved by this method. Fecal smears prepared in this manner may be submitted to the laboratory with a reasonable assurance that the intestinal parasites present will be recognizable following staining with iron-alum hematoxylin.

* Published in Science, Vol. 106, No. 2741, July 11, 1947. The formula for the mounting medium has been modified since publication.

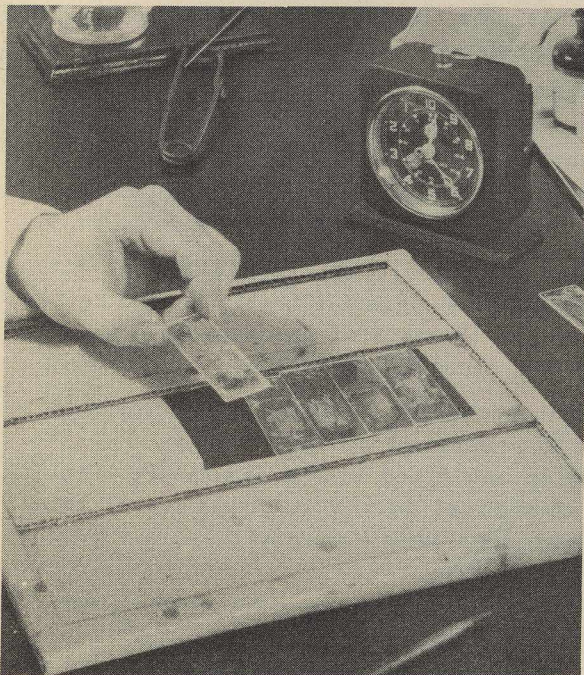
** The product used is specified as "Elvanol 90-25" (formerly polyvinyl alcohol, Grade RH-349-A, Type B, medium viscosity), obtainable from the E. I. duPont de Nemours & Co., Electrochemicals Dept., Niagara Falls, N.Y.



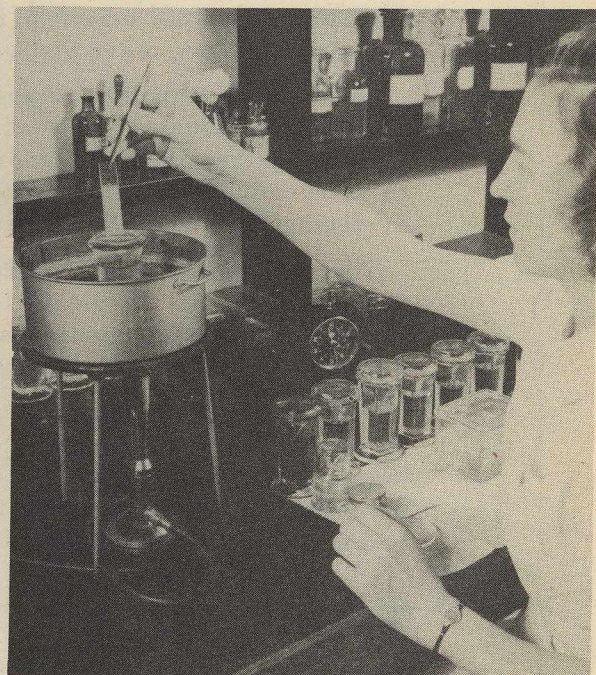
1. A thin fecal smear is prepared on a clean slide in the usual manner. The smear should not be permitted to dry.



2. The smear is covered with Elvanol solution by dipping the slide into a Coplin jar containing the solution. The Elvanol may also be applied over the smear with a medicine dropper.



3. The slide should be set aside to dry for two to four hours, depending upon the room temperature. When completely dry, the slide is ready for mailing in any container in which the smears will not be subjected to pressure.



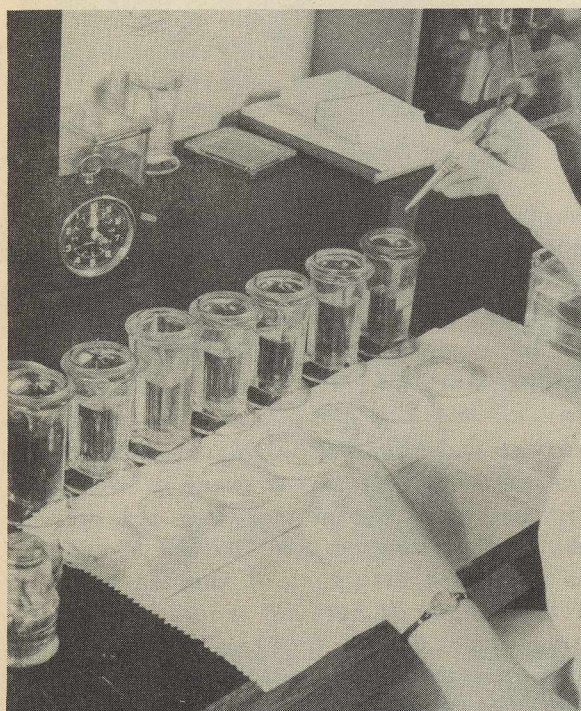
4. Upon receipt in the laboratory, the slide is soaked in a five percent aqueous solution of glacial acetic acid at 50° - 60° C. until all of the Elvanol film has been dissolved from the smear. This usually takes about five minutes.



5. The slide is then rinsed in tap water for three minutes.



6. From tap water, the slide is immersed in 70 percent iodized alcohol for five to ten minutes to remove crystals of mercuric chloride.



7. Staining with iron-alum hematoxylin follows in the usual manner, and a cover slip is put over the smear.



8. The smear is now ready for diagnostic examination. Any trophozoites present in the original material can be found in the stained preparation.