

## SPECIFICATIONS

The capacity of the refrigerator<sup>1</sup> is approximately 44 cubic feet. The cabinet is insulated throughout with 4 inches of compressed cork, encased outside with painted plywood and inside with stipple-glazed asbestos sheeting. Internal lighting is provided with automatic operation on opening and closing the doors. Cooling is by means of a Prestcold plate type of evaporator and serviced by a Prestcold superprismatic condensing unit with a  $\frac{1}{4}$  H.P. integral electric motor. Air circulation is controlled by a fan drawing air over the evaporating unit. The fan is cut out by door-operating switches. An audible buzzer and warning light operate should the air temperature fall below 4° or rise above 7°. This system operates by independent batteries. The blood temperature is recorded by a Bristol single-pen recorder with the thermometer placed in a standard 1-pint blood transfusion bottle containing glycerol.

<sup>1</sup>Built and installed by Prestcold (East Anglia) Limited, Windsor Road, Bedford.

## Letter to the Editor

A PAPER TEST FOR OCCULT BLOOD IN FAECES  
USING ORTHO-DIANISIDINE

Sir,

Benzidine was commonly used in the past for the detection of occult blood in faeces. It is no longer generally available because of its carcinogenic properties and ortho-tolidine is now frequently used for both paper and tube tests. Huntsman and Liddell (1961) described a paper test using o-tolidine and sodium perborate which had several advantages over the more tedious tube tests. Recently, however, we have encountered considerable batch variation with o-tolidine, some batches being quite unsuitable for occult blood tests. Wahba (1966) described a tube test for occult blood in faeces using ortho-dianisidine. In order to overcome the problem of batch variation, while retaining the speed and simplicity of paper tests, we have modified the perborate test of Huntsman and Liddell by using o-dianisidine instead of o-tolidine.

The two stock reagents we use are a 2% solution of o-dianisidine in glacial acetic acid (A.R.), which will keep for two weeks if stored in the dark, and a 2% solution of sodium perborate in water. The sodium perborate is dissolved by warming to 56°C, and the solution then cooled immediately. This solution should be prepared freshly on the day of use. The working reagent is prepared by mixing equal volumes of these solutions, and should be used within one hour of preparation.

The method is carried out by placing a filter paper circle (Whatman no. 1) on a clean white tile. A thin smear of faeces, about the size of a postage stamp, is made in the centre of the filter paper, and six drops of working reagent spotted on to the centre of the smear. A definite blue or green colour appearing within two minutes, and spreading outside the area of the smear, is regarded as positive. A positive reaction is graded as + + + +, + + +, + + or + according to the intensity of the colour developing within two minutes.

In order to determine the sensitivity of the o-dianisidine paper test, we have compared results obtained by the above method with those obtained using the benzidine tube test, in which the sensitivity depends upon the concentration of benzidine solution used. Varley (1962) stated that if the test is carried out using 10% or 5% benzidine solutions, negative results could be taken to exclude gastrointestinal bleeding, but positive results were of doubtful significance. With 3% or 1% solutions, however, positive results could be accepted with a high degree of certainty, but some cases of gastrointestinal bleeding might be missed. We selected for comparison the tests using 3% and 5% benzidine, since these provide satisfactory upper and lower limits of sensitivity.

From the table it can be seen that there was good overall agreement between results obtained with the

**TABLE**  
RESULTS WITH ORTHO-DIANISIDINE PAPER TEST AND 3% AND 5% BENZIDINE TUBE TESTS COMPARED

<i>O-Dianisidine Paper Test</i>	<i>5% Benzidine Tube Test</i>	<i>No. of Specimens</i>	<i>O-Dianisidine Paper Test</i>	<i>3% Benzidine Tube Test</i>	<i>No. of Specimens</i>
Positive	Positive	21	Positive	Positive	8
Positive	Negative	0	Positive	Negative	2
Negative	Positive	2	Negative	Positive	0
Negative	Negative	32	Negative	Negative	14

paper test and the two benzidine tube tests. Where there was disagreement 5% benzidine gave two positive results which were negative by the paper test and 3% benzidine gave two negative results which were positive by the paper tests. These results suggest that the paper test described is slightly less sensitive than the tube test using 5% benzidine and slightly more sensitive than that using 3% benzidine. Thus it appears to be of satisfactory

sensitivity for the routine testing of faeces for occult blood.

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