Acriflavine Emulsion

SIR,—Dr. J. Walker Tomb's letter (*Journal*, January 29, p. 256) describing an alternative formula for acriflavine emulsion raises some interesting points. The formula he suggested was as follows:

Acriflavine *B.P.*	1 gm.
Lime water *B.P.*...	500 ml.
Olive oil *B.P.*	500 ml.

Professor L. P. Garrod and Mr. G. L. Keynes, in their article on the use and abuse of antiseptics (December 25, 1937, p. 1286), criticized the *B.P.C.* emulsion in regard to its high oil content. In the light of this criticism the above formula represents an improvement on that of the *B.P.C.* in that it contains less oil and more water. Dr. Walker Tomb mentions the enhanced action of acriflavine in an alkaline medium, and I presume he intends his emulsion to have an alkaline reaction. This will probably be so when using *B.P.* edible olive oil (acid value not more than 2.0), because it can be calculated that the alkalinity of lime water is neutralized by an equal volume of olive oil when the latter has an acid value of approximately 2.5. On the other hand, it should not be forgotten that for external preparations, such as oily liniments, the *B.P.* recognizes olive oils possessing acid values not exceeding 6.0. In view of this some confusion may arise, and it will depend largely upon the choice of oil as to whether the finished emulsion is alkaline, neutral, or acid in reaction. Moreover, if lime water emulsions of acriflavine became popular circumstances might arise when it would be very convenient to keep a "stock" ready made. This would create a further difficulty in the case of the formula under discussion, because such a "stock" mixture would eventually become acid, due to the progressive hydrolysis of the glycerides in the olive oil. May I therefore suggest a modification which would preserve the usefulness of the formula and at the same time free it from the disadvantages described—replace the olive oil by liquid paraffin containing enough oleic acid to form a soap with the calcium hydroxide of the lime water, but leaving an excess of the latter sufficient to give the finished product the desired alkalinity. In this way an emulsion is obtained which is simple to prepare, reasonably stable, and cheap. The formula is as follows:

Acriflavine	0.1 gm.
Solution of calcium hydroxide ...	60 ml.
Oleic acid	0.5 ml.
Liquid paraffin	40 ml.

The lime water, of course, should be freshly prepared. Although the proportion of oil is purposely as small as possible, more than sufficient is present to provide lubrication and to prevent dressings from sticking. The viscosity of the emulsion when made with *B.P.* liquid paraffin is fairly high, and if desired a more mobile and less expensive product can be obtained by using a good-quality oil of lower viscosity, such as is used in the preparation of nebulae for spraying the nose and throat. At this hospital good results have been obtained with an oil of specific gravity 0.850, 50 ml. of which at a temperature of 37.8° C. flow from a Redwood No. 1 viscometer in not less than 70 and not more than 75 seconds. The oil complies also with the limit tests for sulphur compounds and acidity described under the *B.P.* monograph for liquid paraffin. Although there is some tendency for the finished emulsion to separate on standing, homogeneity is quickly and easily re-established by shaking.—I am, etc.,

W. A. WOODARD,
Pharmacist.

Royal Southern Hospital,
Liverpool, March 5.

Raw or Pasteurized Milk

SIR,—The letter of Dr. Bernard Myers (*Journal*, March 5, p. 537), and the evidence he quotes regarding the danger of raw milk and the safety and nutritive value of pasteurized milk, should surely convince even the most complacent as to the urgent necessity for strong action being taken immediately by all those responsible for our milk supplies—including the Government. One of the chief reasons for delay is, I believe, the lack of uniformity of opinion in our hospitals and in the medical profession. Many hospitals provide their patients with ordinary raw milk, which is neither pasteurized nor sterilized by boiling, and they do not buy milk from a tuberculin-tested herd even in localities where such milk is easily obtainable. Many doctors still advise the consumption of raw milk with the object, they say, of developing immunity in the children who drink such milk. Some, the "whole-hoggers," advise all raw milk from the start. "Let the child take its chance," they say; "the sooner it develops immunity the better"—truly a policy of kill, cripple, or cure. Others adopt what they fondly imagine is a more scientific method. They start the child on milk from tuberculin-tested cows, and gradually replace such milk with increasing quantities of ordinary raw milk. One wonders how they estimate the dose of tubercle bacilli—presumably by the pint or half-pint!

In our campaign for pure and safe milk supplies do not let us forget, or fail to draw attention to, the danger of acquiring other diseases from infected milk. Many epidemics of scarlet fever and of typhoid have been traced to infected milk; and what of undulant fever? Many of our herds are infected with *Br. abortus*, the proportion of infected cows varying from 10 up to 50 or 60 per cent. and over. Consider the deaths of children under 2 years from infective enteritis or diarrhoea. According to the figures published in the epidemiology section of the *Journal*, sixty or seventy children are at present dying *weekly* from this disease in the 125 great towns in England and Wales alone. Nothing is more certain than that these figures will be enormously increased in the summer months. I believe I am right in expressing the opinion that many of these deaths and much misery and unhappiness could be prevented were these children to be given sterilized milk.

One word of criticism. Why does Dr. Myers write of "tuberculin-tested milk"? There is no such thing. One often hears milk from tuberculin-tested cows so described, and the designation "tubercle-free milk" is also often used. The tuberculin test is not infallible, and such loose phrases create in the consumer a false confidence and security. The only milk which can be correctly described as "tubercle-free" is that which has passed a thorough bacteriological examination.—I am, etc.,

Dundee, March 5. F. R. BROWN.

Safe Milk and Safe Butter

SIR,—I have been interested in the Association's advertisements and most pleased to see publicity being given to such an important question. It is a pity that the advertisement has not been more carefully prepared. It contains one very grave mistake; it says: "About 2,000 deaths a year in Great Britain are due to bovine tuberculosis, a disease which is carried by unsafe milk." Bovine tuberculosis is caused by unsafe butter as well as by unsafe milk, and as the plea of the advertisement is to purify the milk and not to test the herds, I feel that this paragraph should be altered. Boiling, pasteurizing, etc.,

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