

pure lipoid (acetone insoluble fraction of tissue lipoids) properly prepared is, in our experience, by far superior to any watery or alcoholic extracts, as well as to those reinforced by cholesterin.<sup>1</sup> We found, however, that in order to obtain constant results it is not sufficient to merely ascertain the chemical composition of antigen, but its physical state as well. By changing the method of emulsifying the alcoholic solution of acetone insoluble tissue lipoids in salt solution, we obtained emulsions which were essentially different from one another. In general, the emulsions can be divided into two groups: those opaque and those only slightly opalescent and fluorescent. The two types are essentially different; thus no amount of dilution of the opaque emulsions will give them the fluorescent appearance characteristic for the second group of emulsions even though the degree of opalescence can be approached.

We found that the results of Wassermann tests performed on the same sera with these two emulsions give different results, and in general the opaque emulsions are more anticomplementary and the fluorescent are more antigenic. The opaque emulsions of antigen give the results comparable to those obtained with cholesterinized alcoholic extracts, namely, one obtains more positive reactions in treated cases as well as in a certain percentage of normal cases and misses a number of reactions in early stages of syphilis, whereas the fluorescent-opalescent emulsions, though missing a certain number of treated cases, are very much more sensitive and specific at the same time.

## 53 (1231)

**The influence of subcutaneous injections of morphine upon the hydrogen ion concentration of the urine in the dog and rabbit.**

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The subcutaneous administration of morphine (morphine sulphate, 10 mg. per kilo body weight) to fasting dogs results in the

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<sup>1</sup> We are reporting elsewhere a comparative study with different antigens on over 20,000 cases.

excretion of a strongly alkaline urine, which may persist for a period of twenty-four hours or more. The alkalinity is undoubtedly due to the presence of carbonates since addition of acid to the urine causes effervescence of carbon dioxide. After the urine has resumed its usual acid character a subsequent injection of morphine may fail to elicit an alkaline urine although the hydrogen ion concentration may be diminished appreciably. On the day of morphine introduction there is usually a definite increase in the elimination of the total urinary nitrogen.

Rabbits fasted until they excrete a strongly acid urine show no significant change in the hydrogen ion concentration of the urine nor is the total nitrogen altered even though very large doses (80 mg. per kilo) of morphine are subcutaneously introduced. These results are in accord with the well-known resistance of rabbits to morphine narcosis.

#### 54 (1232)

#### **The determination of oxygen in blood.**

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This requires 5 minutes for human blood, unless a little sapanin has been added to the ammonia, in which case 15 seconds may suffice for the laking.

The apparatus for determining carbon dioxide in blood, described in the Proceedings for the meeting April 21, 1915, can be used with equal facility and accuracy for determination of oxygen. 6 c.c. of ammonia made by diluting the concentrated solution with 200 parts of water, are introduced into the apparatus with 5 drops of caprylic alcohol. The apparatus is evacuated and the air extracted from the ammonia by shaking for a few seconds. The extracted air is expelled and the process completed to make certain that none is left.

2 c.c. of blood are then introduced. The blood and ammonia are mixed and allowed to stand until the blood is laked. Then half a c.c. of saturated potassium ferricyanide solution is in-