A cholesterinized extract regularly used in the Wasserman test in a dilution of 1 : 70 with salt solution was employed. One c.c. of this extract was measured into a small tube and one c.c. of salt solution added to it. This was mixed and centrifuged, after which the supernatant fluid was poured off and the sediment suspended in 70 c.c. salt solution. This mixture was tested for anti-complementary, hæmolytic and antigenic properties side by side with a suspension prepared by slowly adding 70 c.c. saline to 1 c.c. antigen.

It was found that the suspension prepared from the sediment which resulted from mixing equal amounts of salt solution and antigen was considerably less anticomplementary as well as less hæmolytic than the suspension prepared by adding salt solution to antigen in the regular manner. It was further found that the antigenic properties of the suspensions resulting from either of the two modes of mixing with salt solution was about the same. Similar experiments gave the same results.

Clinical studies may ultimately establish that salt solution suspensions of the lipoid sediment possess high specificity and that the occasional non-specific Wassermann reaction given by cholesterinized antigens may be avoided by employing resuspended antigen-salt solution sediments.

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A phyto-pharmacological study of some heart drugs.

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A number of heart drugs or poisons belonging to the digitalis group were examined in respect to their toxicity for plant protoplasm. The method used was the same as that followed by the authors in a study of cocaine, alcohols, quinine alkaloids, etc.[1]

[1] Macht, D. I., and M. Livingston, *J. Gen. Physiol.*, 1922, iv, 573.

The effect of the drugs was studied on the growth or elongation of the hypocotyls of three-day-old seedings of *lupinus albus.* The following drugs were examined, digitoxin, digitalin (German, Merck), digitalin Kiliani, digitonin, strophanthin U. S. P., ouabain or crystalline strophanthin and bufagin. Those principles which were not soluble in water were used in a 1 per cent. solution of ethyl alcohol, the control in such cases containing also the same amount of alcohol.

It was found that most of the above bodies were not very toxic for the plants, with the exception of bufagin. Thus digitoxin 1:100,000 gave a growth of 87 per cent. as compared with the control plants in normal Shive solution. Digitalin, Merck in the same concentration gave a growth of 86 per cent. Digitalin Kiliani in concentration of 1:500,000 gave a growth of 49 per cent., while solutions from 1:100,000 gave a growth of 98 per cent. Digitonin solution 1:100,000 gave a growth of 82 per cent. Strophanthin U. S. P. 1:100,000 gave a growth of 73 per cent. and ouabain in the same concentration gave a growth of 85 per cent.

The effects of bufagin were very different. Whereas Abel and Macht[2] found this to be an extremely potent drug for animals, its toxicity for the heart being compared to that of digitoxin and strophanthin, it was found to be very little toxic for plant protoplasm. Thus, while ouabin exerted practically no inhibition on the growth of the lupine (97 per cent) and strophanthin U. S. P. in concentrations of 1:100,00 gave 73 per cent. growth and 1:50,000 gave 63 per cent. of growth, it was found that bufagin in solutions 1:100,000 gave only 20 per cent. of growth and in solutions of 1:50,000 gave only 15 per cent. of growth as compared with the normal controls. This difference in the toxicity for plants between bufagin and the strophanthins and the other heart drugs studied is of special interest in the first place because bufagin from a zoopharmacological and chemical standpoint is classed with the digitalis principles and in the second place because that poison is of animal origin. This agrees with the many other instances found by the authors of the *much greater toxicity of many poisons of animal origin as compared with poisons of plant origin for plant protoplasm.*

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2 Abel, J. J., and D. I. Macht, *J. Pharm. and Exper. Therap.*, 1910-11, iii, 319.

The authors have also made a study of some galenical preparations and more particularly of tincture of digitalis in respect to their toxicity for lupinus albus. It was found that various dilutions of tincture of digitalis containing the same amount of alcohol were progressively less toxic for the lupinus so that a curve could be plotted expressing the relationship between the toxicity of the various concentrations and the growth of the plant, running more or less parallel to a similar curve obtained for the toxicity of digitalis by the cat method.

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An effect of x-rays on crossingover in drosophila.

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In Drosophila melanogaster when a white-eyed, long-winged female is crossed with an eosin-eyed, miniature-winged male, the daughters are all heterozygous and may be represented by the formula $\frac{w\ M}{W^e\ m}$, indicating that one of the X chromosomes carries the determiners for white eye-color (w) and long wings (M) while the other carries the determiners for eosin eye-color (W^e) and miniature wings (m). If such a heterozygous female is bred she will have four kinds of regular sons irrespective of the male with which she is crossed, since the regular sons obtain their X chromosomes from their mother only. In two of the kinds of sons the characters will appear as they entered in the original cross, *i. e.*, one kind will be white-eyed and long-winged and the other eosin-eyed and miniature-winged; these make up the noncrossover classes. In the other two kinds of sons the characters will be interchanged, *i. e.*, one kind will be white-eyed and miniature-winged and the other eosin-eyed and long-winged; these make up the crossover classes. It is usual in work on