Barium sulfate and litharge are the best injection media. Baruim sulfate is prepared by precipitating it from barium hydroxide with ammonium sulfate, the precipitation being done at about 57° C. This gives a very fine flocculent mass that will enter many of the smaller arteries and veins. An aqueous suspension is used. Red lead and litharge are employed in either aqueous suspension or in oil.

The plates are exposed to the x-rays varying lengths of time depending on the size and density of the object and the amount of current used.

The paper is illustrated with lantern slides of the prepared objects.

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The selective bacteriostatic activity of sulfanilic acid.

By JOHN W. CHURCHMAN.

[*From the Department of Hygiene, Cornell University Medical School, New York City.*]

In a recent communication to this Society report was made of a selective bacteriostatic property exhibited by acid fuchsin. From a study of the effect of this dye on spore-bearing gram-positive aërobes and on the commoner gram-negative bacteria its selective activity was shown to be just the reverse of that exhibited by gentian violet and the other basic tri-phenyl-methane dyes: the latter kill the gram-positive aërobes and spare gram-negative bacteria, while acid fuchsin kills the gram-negatives and spares the gram-positive aërobes.

Magenta is one of the basic tri-phenyl-methanes and has the same effect on bacteria as gentian violet. From magenta, acid fuchsin differs only (so far as chemical structure is concerned) by the presence in its molecule of sulphonic-acid groups. Since the two dyes are—with this exception—identical, and since they have—so far as gram-positive aërobes and the commoner gram-negative bacteria are concerned—exactly opposite effects, it was clearly indicated to determine whether the sulfonic acid groups in acid fuchsin were responsible for its ability to kill gram-negative organisms while sparing gram-positive aërobes.

The behavior of sulfonic acid groups was tested by a study of sulfanilic acid. It was found that this substance behaves exactly like acid fuchsin: the commoner gram-negative bacteria, when exposed to it at 45° C. are readily killed, gram-positive aërobes under the same treatment remaining uninjured. This would seem to be proof that the reverse selective property of acid fuchsin (reverse, that is to say, as compared with gentian violet) depends on the sulfonic-acid groups which it contains.

Since opposite selective activities have thus been demonstrated for two dyes (magenta and acid fuchsin)—one of which kills gram-positive spore bearers and spares gram-negatives, while the other does just the reverse—and since the chemical group in the latter substance which is responsible for its selective activity has been determined, data would seem to be at hand for the determination of the fundamental cause of the difference between these two types of organisms.

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Detoxication in the organism of the fowl.

By CARL P. SHERWIN and JAMES H. CROWDLE.

[*From the Department of Chemistry, Fordham University, New York City.*]

Various organic compounds more or less toxic to the organism have been fed to human beings as well as to many of the lower animals, but little work of this kind has been carried out with the fowl.

Previous investigation has shown that the first action of the animal body is an attempt at complete oxidation of the foreign molecule. Should this fail, an effort is next made to render the compound less toxic by means of reduction with or without subsequent oxidation. If neither of these types of reactions sufficiently alters the foreign substance, recourse is finally had to a synthetic type of reaction by which the original compound is joined in most cases with another compound or radical.

It may be said in general that the effect of oxidation or reduction upon a compound of this kind is to produce either an alcohol