It is not definitely established whether it is a test for antitoxin; it is possible that the phenomenon may be due to agglutinoids, or to a diphtheria antibody not noted heretofore.

Nicolle, Debains and Césari[4] have described a qualitative test for toxin and antitoxin which is based on a precipitin reaction. It is evident from the results above that while the test may be specific for the diphtheria bacillus and for the other organisms used by them, it should be subjected to further investigation before it can be accepted as specific for toxin and antitoxin as defined by Ehrlich's guinea-pig test.

101 (1848)

Action of some purin derivatives on the isolated bronchus.

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In connection with a study of the effects of various drugs on the isolated bronchi of pigs the authors studied a number of purin derivatives. The effects of caffein or trimethyl xanthin in doses of 1–20 mgm. in 25 c.c. of Locke's solution gave the following results; small doses produced no effect on bronchial muscle or occasionally a very slight constriction. After large doses of caffein a little relaxation of the normal bronchial preparations was noted. When, however, such bronchial preparations were first brought into a state of high tonus or contraction, as for instance on treatment with muscarin, the relaxing effect of a subsequent dose of caffein was much more marked. On the whole, however, the results obtained indicated that caffein has a very weak dilator effect on the bronchus.

Following experiments with caffein, observations were made on the effects of theobromin or 1–3 dimethyl-xanthin and theocin or 3–7 dimethyl-xanthin. It was found that both dimethyl-xanthins produced much greater broncho-dilatation than trimethyl-xanthin or caffein. The authors were unable to obtain a mono-methyl xanthin but they did study the effects of xanthin itself. Although

[1] Nicolle, Debains and Césari, *Comp. rend.*, 1919, clxix, 1433.

xanthin is very slightly soluble nevertheless even very minute quantities of the substance (1 c.c. of 1–200,000 solution) introduced into 25 c.c. of Locke's solutions in which the preparation was suspended were found to produce a very marked relaxation. Hypoxanthin acted in the same way. Going a step further experiments were made with minute quantities of guanidin and adenin and both of these were found to produce relaxation of the bronchus and seemed to be comparatively more potent even than xanthin. Passing to the nucleosid guanosin, the pharmacological action became different. Guanosin produced no effect. A few experiments with adenin nucleotid showed that it also was inactive. Finally tests made with solutions of thymus nucleic acid and yeast nucleic acid gave also no effect on the bronchial muscle.

102 (1849)

Effect of cocaine on the growth of lupinus alba: a contribution to "phytopharmacology."

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The effects of cocaine and its decomposition products were studied on the growth of seedlings of the plant *Lupinus alba.* The seeds were soaked in water and allowed to sprout in a suitable medium, following which the length of the straight roots grown by this plant was measured and the effects of cocaine and other chemicals on the growth of the roots were investigated. The plants were placed in solutions of nutrient salts (Shive solution) and the various drugs were added to such solutions. Controls were made on seedlings suspended in Shive solution diluted one half with distilled water. It was found that the effect of cocaine and its decomposition products on the growth of lupinus was very different from the effect of the same substances on animal tissues. Whereas cocaine is very toxic for animal tissues such as smooth and skeletal muscle, nerves, etc., it required strong solutions of this alkaloid, namely 2 per cent. of cocaine hydrochloride to inhibit