

4. A modified "N.N.N." medium is suggested.
5. On this medium the Leishman-Donovan bodies from spleen punctures or peripheral blood develop into flagellates at all hydrogen-ion concentrations tested, *i.e.*, between P_H 6.8 and P_H 8.2 and the flagellates grow at least to P_H 9.0.
6. Cultures on this modified medium show post-flagellate forms and perhaps Cornwall's "thick tails."

ABSTRACTS OF THE COMMUNICATIONS,
PACIFIC COAST BRANCH.

San Francisco, California, February 15, 1922.

136 (1883)

Further observations on anaphylactoid phenomena from different agents, including histamin.¹

By **PAUL J. HANZLIK** and **HOWARD T. KARSNER**.

[From the Department of Pharmacology, Leland Stanford Junior University, San Francisco, Cal., and the Department of Pathology, Western Reserve University, Cleveland, Ohio.]

Of the twenty-five different agents which were injected intravenously into guinea pigs, the following caused anaphylactoid symptoms: Colloidal arsenic, kaolin, blood charcoal, colloidal iron, ten per cent. sodium chloride (?), tragacanth, toxified agar, lung extract, glacial acetic acid, copper sulphate, fuller's earth, sodium oxalate, sodium citrate, tannin, tartar emetic and histamin. Especially noteworthy were the results after injection of histamin, which produced symptoms with the very small dosage of 0.00011 mgm. per gram of animal. All of these agents, except the chloride and citrate, produced thrombi in the pulmonary blood vessels. The appearance of pulmonary thrombi (platelet) after the injection of histamin agrees with the observation of Dale and Laidlaw, who detected the presence of platelet thrombi in the blood of

¹ This investigation is supported by a grant from the Therapeutic Research Committee of the Council of Pharmacy and Chemistry of the American Medical Association.

cats in histamin shock. Histamin also causes agglutination of human, avian, guinea pig, dog and cat red blood corpuscles "in vitro," which is consistent with the formation of thrombi and emboli "in vivo."

The following agents, caramel (50 per cent.), cane sugar, casein, calcium lactate, lutein extract, horse serum, colloidal gold (sensitive), colloidal gold (protected) and colloidal sulphur (saturated), did not cause anaphylactoid symptoms. Pulmonary thrombi were not demonstrable after cane sugar, sodium chloride, casein, calcium lactate, horse serum and colloidal gold (sensitive).

Cane sugar and sodium chloride (hypertonic solutions) have been advocated and used for the prevention and treatment of anaphylactoid symptoms. The rationale of this is not understood, but is alleged to be concerned with alterations in the physical-chemical properties of the colloids of the blood. Accordingly, attempts were made to treat anaphylactoid symptoms produced by kaolin, histamin, acacia, and beef serum by preliminary injections of 50 per cent. cane sugar and of 10 per cent. sodium chloride. However, the results obtained were uniformly negative as to prevention of symptoms and thrombi.

Intraperitoneal injections were made with the following agents, allowing at least one hour after administration for development of symptoms; agar sol-gel, toxified agar, horse serum, beef serum, lung extract, histamin, colloidal gold (sensitive), colloidal sulphur (saturated), Congo red, glacial acetic acid and copper sulphate. With the exception of copper sulphate, the results were uniformly negative. The intraperitoneal injection of copper sulphate in the same dosage as was used intravenously, caused anaphylactoid symptoms and death in 40 minutes. Pulmonary thrombi were definitely present after intraperitoneal injection of histamin only.

137 (1884)

Urinary excretion of salicyl after the administration of salicylate and salicyl esters.

By **P. J. HANZLIK, FLOYD DE EDS and ELIZABETH PRESNO.**

[From the Department of Pharmacology, Leland Stanford Junior University, San Francisco, Cal.]

Using sodium salicylate as a control, the excretion of methyl