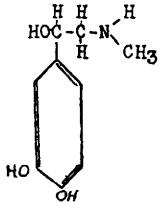
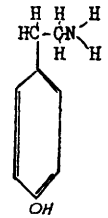
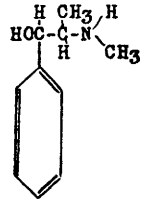


Adrenaline
Jowett[6]



Tyramine
Barger-Dale[6]



Ephedrine
Ladenburg[5]

It properly belongs to the group of "sympathomimetic amines" of Dale.[6]

The acute toxicity of ephedrine is low, the m.l.d. lying between 100 and 145 mg. per kilo in rats. These doses cause cocaine-like convulsions, which are probably the cause of death.

Further chemical and histological investigations of the plant are being made and a method of assay has been devised.

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### The experimental transmission of leishmaniasis to animals.

By H. JOCELYN SMYLY and CHARLES W. YOUNG.

[*From the Department of Medicine, Peking Union Medical College, Peking, China.*]

On December 18th, 1922, an autopsy (No. 3853) was performed on a patient who had died of kala-azar that day in the Peking Union Medical College Hospital. The spleen was found to be unusually heavily infected with *Leishmania donovani*, spleen smears showing hundreds of organisms in every field under the 1.9 mm. oil immersion objective. A portion of the spleen was taken, using sterile precautions, ground in Rosenow's tissue crusher, and mixed with 0.85 per cent salt solution to make an emulsion which easily passed through a fine hypodermic needle. The same suspension was used to inject the following series of animals, all of which were injected intraperitoneally except the dogs which were injected intravenously:

[5] Ladenburg, A., and Oelschaegel, C., *Ber.*, 1889, xxii, 1823.

[6] Barger, G., *The Simple Natural Bases*, 1914.

2 dogs received 5 cc. and 4.5 cc. respectively; 2 guinea pigs, 0.5 cc.; 2 white rats, 0.5 cc.; 2 black mice, 0.3 cc.; 5 hamsters, 0.3 cc.

The hamster (*Cricetulus griseus* M-Edw.) is a species of field mouse which we describe more fully in another paper read at this meeting.

The results of these inoculations were as follows:

Dog 1—Blood culture positive on 38th day. Died after 5 months. No autopsy.

Dog 2—Blood culture positive on 42nd day. Autopsy after 4½ months. Spleen sections showed intracellular *L. donovani.*

Guinea pigs—Spleen smears negative at autopsy on 95th and 131st days.

White rats—Smears of spleen, liver, and marrow negative at autopsy on 29th and 90th days.

Black mouse 1—Autopsy on 111th day. Smears of spleen and liver positive. Sections of spleen, liver, and marrow show intracellular *L. donovani.*

Black mouse 2—Autopsy 121st day. Smears of liver and spleen positive.

Hamster 1—Autopsy 45th day. Liver and spleen smears positive.

Hamsters 2, 3, 4, 5—Autopsies on 8th, 116th, and 351st days. Smears of liver and spleen all positive. Sections of liver, spleen and marrow positive for intracellular *L. donovani.*

On August 25th, 1923, material from another autopsy (No. 4358) was used for the injection of another series of animals. This case was a very light infection, smears and cultures taken at autopsy from spleen and liver being negative for *Leishmania,* but smears from the bone marrow (rib and femur) being positive. Similar technique was used in the injection. The animals were all injected intraperitonially, their respective doses being as follows:

2 dogs with 10 cc. and 5 cc. of spleen emulsion; 2 dogs with 10 and 5 cc. of liver emulsion; 5 hamsters, 1 with 1 cc. spleen emulsion, 2 with 1 cc. liver emulsion; 2 with 1 cc. marrow emulsion respectively.

The resulting infections were as follows:

Dogs—All negative for *L. donovani* by liver puncture and sternum puncture on 102nd to 107th day. Still living.

Hamster 8—Autopsy 105th day. Spleen smear positive for *L. donovani.*

Hamsters 9, 11, 12—Liver punctures positive for *L. donovani.* Autopsy smears of spleen and liver positive for *L. donovani.* on the 116th to 144th days.

Hamster 10—Liver puncture on 131st day positive for *L. donovani.* Still living.

Inoculations into white mice were made from both autopsies, 13 mice being used; all died of injury, the Chinese white mouse being extremely small; no results were obtained for comparison.

Considerable attention has been given by other workers to experimental *Leishmania* infections in dogs, mice, and other animals. The point of chief interest in these studies is in the observation for the first time that the hamster *(C. griseus)* is easily infected with *L. donovani.* The minimum infective dose has not been determined, but the fact that animals were successfully infected by liver and spleen emulsion which was negative on microscopic examination of smears and on culture indicates a high susceptibility. The infection in these hamsters has run a chronic course without any apparent tendency to spontaneous recovery. One infected hamster lived almost a year, and was then killed as it looked sick and had an abscess in the cheek. As a rule they showed no apparent ill effect. At autopsy the spleen was always greatly enlarged, in one case as much as fourteen times the normal weight in proportion to body weight. Smears of spleen and liver showed *L. donovani* in enormous numbers, while sections of the organs showed the organisms in innumerable swarms within large cells probably endothelial. Passage of the virus was easily effected to other hamsters.