In a human volunteer 5 mg./kg. of ethyl chaulmoograte administered orally in a gelatin capsule was tolerated with some nausea but no emesis, while 10 mg./kg. brought about emesis in 63 minutes. Dr. H. I. Cole has told us that he has observed patients tolerant to 5 cc., or about 100 mg./kg., of ethyl chaulmoograte after taking this agent orally for some time.

Among the many peculiar pharmacological actions of *Cannabis sativa* is its rôle in the *Tai-Fong-Chee* oral method of administering chaulmoograte recommended by Travers.[8] Travers reports a mixture of 2 parts of powdered Hydnocarpus nut and 1 part of *Cannabis indica* to be well tolerated by humans. We have found 5 of 5 cats tolerate 200 mg./kg. of ethyl chaulmoograte if 100 mg./kg. of fluid extract of Cannabis is given simultaneously or previously.

Summary. Evidence is presented indicating that the emetic effect of the chaulmoograte is central. The action of Cannabis, atropine and morphine in abolishing the emetic response in dogs and cats is reported.

7629 C

An Inexpensive Tissue for Biological Testing.

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For some time we have been interested in reactions of the iris to various reagents and have observed that a strip of sphincter pupillae of the steer iris affords an excellent preparation for studying the effects of many drugs on unstriated muscle and its innervation. We suggest the adoption of this tissue for pharmacological studies because of its inexpensiveness, certainty and sensitivity of response, availability at any abattoir and its viability even after 3 to 7 hours post mortem. Precautions regarding preparation of iris strips are given elsewhere.[1, 2]

Besides demonstrating the antagonistic relaxing action of various concentrations of atropine against sphincter contraction by physostigmine one is able to produce opposite effects with histamine and

8 Travers, E. A. O., *Proc. Roy. Soc. Med.*, 1926, **19**, 1.

1 Miller, G. H., *J. Pharm. and Exp. Therap.*, 1926, **28**, 219.

2 Yonkman, F. F., *J. Pharm. and Exp. Therap.*, 1930, **40**, 195.

adrenalin. To date we have been able to demonstrate sphincter relaxation with so small a dose as 1-400,000,000 and a sphincter contracture with the minute dose of 1-1,000,000,000 of histamine. We suggest the study of the iris sphincter strip as a probable tissue for biological assay as well as its adoption in pharmacological laboratory teaching.

7630 C

Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation from Cigarette Smoke.*

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We herewith report a successful attempt to measure objectively the irritant properties of cigarette smoke. We used the conjunctival sac of rabbits according to the technic of Hirschhorn and Mulinos.[1] In Fig. 1, smoke from the burning cigarette which is protected from drafts by a jacket *h,* is passed by way of the ammonia tube *g,* through 3 cc. of water, saline or Ringer solution, at room temperature (21 to 30°C.), and at 37.5°C. maintained by artificial means, by immersion of cylinder *f,* in a water bath. A few experiments were performed using light mineral oil as a solvent for the smoke. By means of a filter pump, tube *e* sucks air through the cigarette and through the funnel-stopcock system *b.* The tipping bucket *a* empties water into the funnel, temporarily preventing ingress of air. This sucks air first through the cigarette and then the solution. The water drops to the bottom of the cylinder and leaves through tube *d,* by gravity. When the tube *b,* becomes free from water, all the air sucked through the system goes through this tube, and none through the cigarette. This cycle yields a puff, 100 of which averaged 24.8 cc. with the limits of 21 to 28 cc., and which requires 15 seconds to complete, 4 seconds of which are taken up by suction through the cigarette. It requires 15 minutes or 60 puffs to smoke one cigarette. Through each 3 cc. of solution is drawn the smoke from 5 cigarettes in order to insure saturation.

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[1] Hirschhorn and Mulinos, PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 168.