

	%
Harris' (vitamin-free) casein	18
Harris' (vitamin-free) starch	53
Crisco (commercial)	25
Mendel's normal salt mixture	4
	100

After 41 days on the above diet one rat had lost 19%, another 21%, another 24% and the fourth 26% of the respective original weight. Two animals had developed a mild xerophthalmia.

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In vitro Effects of Certain Drugs on Strongyloides.

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The success attendant on the oral administration of gentian violet and crystal violet in eradicating or greatly reducing *Strongyloides stercoralis* in the human host (de Langen,¹ Faust²) as well as in other primates suggested the desirability of testing *in vitro* the strongyloidicidal properties of several therapeutics. While it was not possible to secure living parasitic *Strongyloides* for this purpose, the several successive stages of the free-living generation of an indirect type of *Strongyloides fülleborni* from the red-spider monkey, *Ateles geoffroyi*, were available. These organisms had been cultured in undiluted moist feces. At the appropriate time, when active free-living males and females, rh₂, RH₂ and f₂ larvae were both numerous and active, the nematodes were drawn off in a few drops of clear water by means of the Baermann technic.

In the first instance these several stages were placed in 0.1% of each of the following reagents: crystal violet (cv); acriviolet (acv); acriflavine (acf); mercurochrome (mc), and hexyl resorcinol (hr). The results of this test are shown in the accompanying table.

In view of these results, showing the high potency of hexyl resorcinol in the dilution used, the organisms were then tested in 0.01, 0.002 and 0.001% dilutions of this drug. The tests in this case showed that the 0.01 dilution was almost as potent as the 0.1 dilu-

¹ de Langen, C. D. 1928. Meded. v. d. Dienst d. Volksgezondheid in Ned.—Indie. 15 pp. Weltevreden.

² Faust, E. C., *Internat. Med. Digest*, 1930, 17, 57.

TABLE I.
The effects of certain reagents in 0.1% solution on the free-living stages of
Strongyloides fülleborni.
 (25 or more specimens of each stage were used in this study.)

Time	Stages	cv	acv	acf	mc	hr	Controls
1 min.	♂	+	+	+	+	±	+
	♀	+	+	+	+	±	+
	rh	±	+	+	+	±	+
	RH	+	+	+	+	±	+
	f	+	+	+	+	±	+
2 "	♂	+	+	+	+	—	+
	♀	+	+	+	+	—	+
	rh	±	+	+	+	—	+
	RH	+	+	+	+	+	+
	f	+	+	+	+	+	+
5 "	♂	+	+	+	+	—	+
	♀	+	+	+	+	—	+
	rh	±	+	+	+	—	+
	RH	+	+	+	+	±	+
	f	+	+	+	+	±	+
10 "	♂	+	+	+	+	—	+
	♀	+	+	+	+	—	+
	rh	±	±	+	+	—	+
	RH	+	+	+	+	—	+
	f	+	+	+	+	—	+
20 "	♂	±	±	+	+	All stages dead	+
	♀	±	±	+	+		+
	rh	—, ±	±	±	+		+
	RH	+	+	+	+		+
	f	+	+	+	+		+
30 "	♂	—, ±	±	±	+		+
	♀	—, ±	±	±	+		+
	rh	—, ±	±	±	+		+
	RH	+	+	±	+		+
	f	+	+	±	+		+
1 hr.	♂	—	±	±	+		+
	♀	—	±	±	+		+
	rh	—	—	—	+		+
	RH	±	±	±	+		+
	f	±	±	±	+		+
12 "	♂	—	—	—	±		+
	♀	—	—	—	±		+
	rh	—	—	—	—		+
	RH	—	—	—	±		+
	f	—	—	—, ±	±		+

+ = alive and active; ± = alive but inactive; — = dead.

tion, while the 0.002 dilution required 20 minutes to kill the worms. The 0.001 dilution was not effective under 1 hour; in other words, it was about as lethal as 0.1% crystal violet.

Conclusions. These *in vitro* tests with the free-living stages of *Strongyloides fülleborni* indicate that crystal violet in 0.1% dilu-

tion is more lethal than acriviolet or acriflavine in the same dilution, while mercurochrome is essentially ineffectual. On the other hand hexyl resorcinol in 0.1 and 0.01 dilutions showed a much greater strongyloidicidal capacity than any of the other reagents, and in 0.001 dilution was practically as potent as crystal violet in 0.1 dilution.

Since these *in vitro* results are suggestive only and do not necessarily parallel the *in vivo* action of these reagents, there is need to determine if hexyl resorcinol and other drugs of this series are as effective as gentian violet or crystal violet in eradicating *Strongyloides* from normally or experimentally infected hosts.

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Changes in the Liver Following Cholecystgastrostomy and Cholecystduodenostomy.*

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The presence of severe liver damage following cholecystgastrostomy and cholecystduodenostomy in the dog has been demonstrated by Lehman,¹ Horsley,² Beaver,³ and Gatewood and Stanley.⁴ The changes noted have been of varying degrees, from simple lymphangitis to extensive necrosis and abscess formation. All agree that in their experiments a hepatitis of varying degrees developed following anastomosis of the gallbladder to the gastro-intestinal tract. However, these authors failed to obtain specimens of the liver for histological study with concomitant bacteriological studies of the normal liver, stomach, or duodenum in order that a comparison could be made with sections of liver removed at varying intervals after the anastomosis of the gallbladder to the stomach and duodenum.

In 1909 Walbach and Saiki⁵ demonstrated that areas of necrosis occurred in the liver of normal dogs.

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¹ Lehman, E. P., *Arch. Surg.*, 1924, **9**, 16.

² Horsley, J. S., *South. Med. J.*, 1927, **20**, 669.

³ Beaver, M. G., *Arch. Surg.*, 1929, **18**, 899.

⁴ Gatewood and Stanley, *S. G. and O.*, 1930, **50**, 40.

⁵ Wolbach, S. B., and Saiki, T., *J. Med. Research*, 1909, **21**, 279.