and lysolecithin in ether[14] were unsuccessful.

Chemically speaking, the purest lecithin has been prepared through the cadmium salt.[12] This procedure did give a very light-colored and attractive preparation, but a fat emulsion prepared with it was promptly fatal to a dog and the lecithin itself was fatal to a rabbit (Table II). The toxicity of lecithin prepared in this manner was found to be due to traces of cadmium which could be removed by treatment with hydrogen sulphide.

Summary. Thirteen samples of commercial lecithin were fatal to rabbits when administered intravenously at a level of 1.75 g per kilo body weight.

A method for preparing lecithin from egg yolk is described and it is shown that lecithin so prepared is harmless to rabbits when given by vein even at a level of 3.5 g per kilo body weight. Lecithin so prepared will acquire toxic properties if exposed to the air. Elevated temperatures accelerate this process. If the lecithin is stored under high vacuum, toxic properties will not develop within at least 228 days.

Egg lecithin prepared through the cadmium salt may contain sufficient quantities of cadmium to produce cadmium poisoning.

[14] Fiori, A., *Biochim. terap. sper.*, 1930, **17**, 267.

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In vitro Susceptibility of *Histoplasma capsulatum* to Therapeutic Agents.

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During treatment of 3 cases of histoplasmosis in the early months of 1945, it was decided to carry out *in vitro* susceptibility studies on the yeast phase of *Histoplasma capsulatum*.

Methods. Five-day-old cultures of *Histoplasma capsulatum* in heart-brain infusion broth (Difco) were used as the test organism.

The drugs tested were neoarsphenamine, neostam, sulfadiazine, sulfathiazol, stilbamidine.* Two antibiotics, streptomycin* and penicillin were likewise tested. The drugs were added to the media, before inoculation of the organism, in the following mg% concentrations: 100, 50, 25, 20, 10, 1, 0.1, 0.01, and 0.001.

The streptomycin was employed in the same manner, but in concentrations of 2500, 1250, 750, 250, 125, 100, 75, 50, 25, 12.5, 10, 7.5, and 5 units per ml. Penicillin was used in concentrations of 10, 5, and 1 units per ml.

Culture tubes of heart-brain infusion at pH 7.4, containing the desired concentrations of drugs in 10 ml, were inoculated, in duplicate, with 0.5 ml of a 5-day broth culture of the yeast phase of the test organism and incubated at 37°C. These cultures were examined for growth at the end of 7 days of incubation. Similar tests were performed in which the amount of inoculum was reduced to 0.2 ml of the 5-day culture of *Histoplasma capsulatum*. Each of these series, in duplicate, was repeated once with identical results.

A control series, in which drug-free culture medium was inoculated with the same quantity of inoculum as used in the drug series, was performed with each experiment.

The cultures were examined at the end of 7 days, and subcultures were made from all tubes which did not show growth or which were very cloudy. In tests using neoarsphenamine, stilbamidine, and streptomycin, some precipitate was formed when these agents were added to the heart-brain infusion broth. In the case of streptomycin, this was believed to be due to lipoid substances present in the streptomycin. In the case of stilbamidine,

* The stilbamidine and streptomycin used were kindly supplied by Merck and Co.

TABLE I.
In Vitro Effect of Various Concentrations of Therapeutic Agents on *Histoplasma capsulatum*.

Concn. mg%		100	50	25	20	10	1	0.1	0.01	0.001	*Control	
Neoarsphenamine		0	+	+	+	+	+	+	+	+	+	
Neostam		+	+	+	+	+	+	+	+	+	+	
Sulfadiazine		+	+	+	+	+	+	+	+	+	+	
Sulfathiazole		+	+	+	+	+	+	+	+	+	+	
Stilbamidine		0	0	0	0	0	+	+	+	+	+	
Concn. units/ml	2500	1250	750	250	125	100	75	50	25	12.5	10	7.5	5	1
Streptomycin	+	+	+	+	+	+	+	+	+	+	+	+	+	
Penicillin											+		+	+

0 No growth.
+ Growth.
* Control tube contained no drug and was always positive.

this was due to the sodium chloride present in the infusion broth, inasmuch as it is known that sodium chloride will produce crystallization of stilbamidine. The cause of the precipitate when neoarsphenamine was used is not known, but is probably related to the colloid-like properties of neoarsphenamine. This factor of precipitation undoubtedly reduced the amount of effective therapeutic agent present. At the time, it was impossible to determine the amount of each agent actually in solution.

Results. The results of these experiments are presented in Table I. On the basis of these experiments, it was found that neoarsphenamine in a concentration of 100 mg%, and stilbamidine in concentrations from 10 to 100 mg%, prevented the growth of *Histoplasma capsulatum*. As previously stated, the actual amount of neoarsphenamine and stilbamidine in solution was less than the tabulated concentrations.

The use of sulfadiazine, sulfathiazole, and neostam as well as streptomycin and penicillin exerted no inhibitory effect in the amounts used.

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Effect of Large Doses of Streptomycin and Influenza Viruses on Chick Embryos.

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(Introduced by V. E. Levine.)

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Search for an effective therapeutic agent against viral infections has been stimulated by the success attained in treating bacterial diseases with sulfonamides and antibiotics. However, since the problem is complicated by the intracellular growth of viruses, it is perhaps not remarkable that the results up to the present time have been almost consistently negative.[1] Recently a small quantity of streptomycin[2,*] became available to us. Because of the effectiveness of this agent against a number of bacteria which have been resistant to previously studied antibiotics and chemotherapeutic drugs, and its low toxicity for the

[1] Jones, D., Beaudette, F. R., Geiger, W. B., and Waksman, S. A., *Science*, 1945, **101**, 665.

[2] Schatz, A., Bugie, E., and Waksman, S. A., PROC. SOC. EXP. BIOL. AND MED., 1944, **55**, 66.

* The streptomycin was supplied by Merck and Company through the courtesy of Dr. D. F. Robertson. It consisted of remnants of lots No. 199, 209, 212.