TABLE II.
The Coagulation Time in Glass and Lusteroid Tubes of Venous Blood with and without Additions of Cephalin, and of Plasma before and after Incubation with Cephalin. Human Subjects with Various Hemorrhagic Disorders.

	Subject											
	1 Post-hemorrhagic, with thrombopenia		2 Post-hemorrhagic, with thrombocytosis		3 Thrombopenic (nonhemorrh.)		4 Hemophilic		5 Hypoprothrombinemic (dicoum.)		6 Heparinized†	
Determination*	Glass	Lust.	Glass	Lust.	Glass	Lust.	Glass	Lust.	Glass	Lust.	Glass	Lust.
Clot. time, blood (sec)	360	480	480	420	540	1440	5100	12900	690	2760	1860	2940
Ceph. clot. time, blood (sec)	75	81	86	112	99	201	830	1449	204	579	220	480
Ceph. clot. time, plasma 0′ incub. (sec)	74	90	71	96	87	192	238	618	92	235	203	792
20′ incub. (sec)	80	109	76	64	100	329	345	2296	157	860	532	>3600
Blood platelets (thous./mm³)	20		510		18		430		180		154	
Plasma prothr. (%)												
1-stage meth.	90		100		90		100		22		95	
2-stage meth.	72		70		108		110		20		90	

* For methods see footnotes under Table I.
† 40,000 units Lederle Heparin intravenously over a period of 48 hours. Man, wt 65 kg.

veniently done at the time the blood is collected by one of the standard bedside methods,[2] or in the plasma by the two-stage method.[5] Naturally occurring increases in the antithrombin content of the blood are seldom encountered, and require no especial technical provision in clinical studies.

Summary. The rate of coagulation of whole blood in paraffin coated or lusteroid tubes after addition of a standard suspension of cephalin, gives a rapid and reliable estimation of the anticephalin activity of the corresponding plasma. The extent of the difference between the rate of coagulation of blood in glass and lusteroid tubes supplies an additional estimate of this activity. The response to the clot accelerating action of cephalin does not seem to be significantly affected by the platelet content of the blood; the presence of hypoprothrombinemia may, however, exaggerate the delay in the response.

[5] Smith, H. P., Warner, E. D., and Brinkhous, K. M., *J. Exp. Med.*, 1937, **66**, 801.

14759

Effect of Penicillin and Patulin on Fowl Pox.*

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The effects of penicillin and patulin upon the infection of fowl pox, contagious epithelioma, of the chorioallantoic membrane of the developing chick embryo have been determined.

Procedure. Forty-five eggs which had been incubated for 11 days were prepared for inoculation by the technic described by Good-

* This work was supported by a grant from the Mallinckrodt Chemical Works.

pasture *et al.*[1] The inoculation was done by gently rubbing a small piece of infected membrane over the center of the chorioallantoic membrane after it had fallen away from the shell. The opening in the shell was closed by sealing a glass cover slip with a petrolatum-paraffin mixture. All 45 eggs were inoculated and divided into 3 groups of 15 each. Group 1 served as the control; 0.25 cc of saline containing 100 Oxford units of penicillin was placed upon the inoculated membrane of each embryo in Group 2 one hour after inoculation and every 24 hours thereafter for 4 days; 0.25 cc of saline containing 0.1 mg of patulin was placed upon the membrane of each embryo in Group 3 one hour after inoculation and every 24 hours thereafter for 4 days. At the end of 5 days the membranes from the live embryos were removed for gross and microscopic study and for subsequent inoculation of 10-day-old chicks; 0.5 cc samples of fluid from immediately under the membrane of 10 embryos receiving penicillin were collected for assay of the penicillin present.

Results. The membranes from all of the control embryos and from all of those receiving penicillin showed the typical lesions of fowl pox on gross as well as on microscopic examination. Ten 10-day-old chicks inoculated with material from the control membranes as well as ten 10-day-old chicks inoculated with material from the penicillin-treated membranes developed typical fowl pox lesions in 3-5 days.

Assay of the embryonic fluid from 10 penicillin-treated embryos showed a concentration of 20 Oxford units per cc, which is approximately twice what one would expect if uniform distribution occurred throughout the embryo and if there was no destruction of the penicillin by the embryo.

Only 5 of the 15 embryos receiving patulin survived the 5-day treatment. The membranes from this group were necrotic in the center but tissue around the margin showed typical inclusion bodies in and hyperplasia of the epithelium.

Summary. Neither penicillin nor patulin have any inhibitory effect upon the infection of fowl pox of the chorioallantoic membrane of the developing chick embryo.

[1] Goodpasture, E. W., Buddingh, G. J., Richardson, L., and Anderson, K., *Am. J. Hygiene*, 1935, **21**, 319.

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14760

Thiamine Utilization of Rats Maintained on Diets Containing Dextri-Maltose.

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Najjar and Holt[1] maintained human subjects for a period of 18 months on a purified diet similar to rations employed in nutrition studies with rats. The experiment was designed to establish the minimum thiamine requirement of man. Dextri-maltose served as a source of carbohydrate in the ration. The percentage employed was not given, but in all probability it comprised 50 to 60% of the diet. Despite the fact that the authors stated that repeated examination of the ration failed to show any trace of thiamine, the minute quantities of this vitamin required for the maintenance of health of their subjects suggested that (1) the diet carried appreciable thiamine or (2) the particular carbohydrate had a favorable influence on intestinal "synthesis" of thiamine. The latter possibility was investigated by Najjar and Holt who

[1] Najjar, V. A., and Holt, L. E., Jr., *J. A. M. A.*, 1943, **123**, 683.