PERCENTAGE OF TOTAL NITROGEN.

Periods.	Urea N, per cent.	Ammonia N, per cent.	Creatin and Creatinin N, per cent.	Purin N, per cent.	Undetermined N, per cent.
I. (Fore period).....	88.5	3.64	2.51	0.16	5.19
II. (First injection period)	85.7	3.75	2.50	0.20	7.86
III. (First post injection period).....	86.5	3.61	3.33	0.24	6.32
IV. (Fore period).....	86.7	3.65	3.20	0.19	6.26
V. (Second injection period)	87.0	3.92	3.73	0.16	5.19
VI. (Second post injection period).....	84.2	4.29	3.62	0.17	7.72

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Experiments on the diffusibility of cholesterol-esters and of lecithan compounds.[1]

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I. CHOLESTEROL ESTERS.

It has been shown in this laboratory that ether solutions of various biological substances pass through rubber membranes into ether.

We have found that cholesterol-benzoate, cholesterol-stearate, cholesterol-oleate and cholesterol-palmitate dissolved in ether will readily diffuse through rubber into ether.

Cholesterol-stearate with a molecular weight of 652.61 diffuses, whereas the various lecithans, with molecular weights considered to be 770 to 785, do not. If we assume that the diffusion of a substance depends on the size of its molecules, the above facts strengthen Hiestand's conclusion that the molecular weight of egg-yolk lecithin is 1446, which figure he obtained by a molecular weight determination.

[1] This study is one of a projected series on *lipins*, which in turn constitutes a section of a comprehensive plan of research on the composition of protoplasm as well as the structural and dynamic relationships of cell constituents and products. These investigations are now in progress in the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons, and under the auspices of the George Crocker Special Research Fund.

II. LECITHAN COMPOUNDS.

Koch[1] has lately described the preparation of various compounds with lecithans, but it is uncertain whether these compounds are colloidal mixtures, mechanical mixtures or true chemical compounds. It seemed of interest to study the behavior of these substances in ether solution, when subjected to dialysis in rubber bags suspended in ether.

The preparations used in these experiments were made according to the method described by Koch. For the dialysis tests the solutions of the lecithan compounds were evaporated to dryness at 38° and the residues ground up with ether. The extracts were filtered and the filtrates placed inside of rubber bags and dialyzed against ether for thirty-seven days. The dialysates were tested every week to see if the substance combined with the lecithan diffused.

Compounds of lecithin with glucose, lactic acid, strychnin, digitonin, salicin, urea, creatin, creatinin and caffein were prepared. It was found that the glucose and lactic acid dialyzed completely, the strychnin, digitonin and salicin dialyzed partially, while urea, creatin, creatinin and caffein did not dialyze at all.

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The relative importance of stroma and parenchyma in the growth of certain organs in culture media.

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In experiments carried out about fifteen years ago, one of us observed that during the regeneration of skin, the epithelial cells are able to penetrate into and to grow in coagula of blood and of blood plasma.[3] This suggested to him that it might be

[1] Koch, *Journ. Pharm. and Exp. Ther.*, 1911, ii, p. 239.

[2] We wish to express our thanks to Dr. D. L. Harris, director of the Pathological Laboratory at the City Hospital, who put the facilities of his laboratory at our disposal at a time when our laboratory had not been finished; and also to Dr. M. G. Seelig, who very kindly assisted us in a number of our experiments.

[3] *Archiv f. Entwicklungsmechanik*, Bd. VI., 1898; *Johns Hopkins Hospital Bulletin*, January, 1898; *American Journal of Anatomy*, Vol. III., 1904.