

DISTRIBUTION OF NITROGEN IN THE GELATIN HYDROLYSATE
BEFORE AND AFTER ELECTROLYSIS.

	Nitrogen in original Hydrolysate. ¹		Distribution of Basic Nitrogen in Gelatin as Found by Van Slyke, ² %.	Cathode Solution after Electrolysis at P _H 7.5. ³		Cathode Solution after Electrolysis at P _H 5.5 ⁴	
	Nitrogen, Gms.	Distribution of Basic Nitrogen, %.		Nitrogen, Gms.	Distribution of basic Nitrogen, %.	Nitrogen, Gms.	Distribution of Basic Nitrogen, %.
Total nitrogen	61.0			6.21		0.99	
Total basic nitrogen	18.5			6.19		0.99	
Arginin nitrogen	10.1	55	58	4.70	76	0.62	63
Histidin nitrogen	3.6	19	17	0	0	0.15	15
Lysin nitrogen	4.8	26	25	1.49	24	0.22	22

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Immunologic studies of actinomycetes, with special reference to the acid-fast species.

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The serums of six out of eight actinomycotic cattle fixed complement with four different antigens prepared from *Actinomycetes* isolated aërobically from lesions in cattle, and not with antigens prepared from saprophytic strains. The complement fixation test may be of diagnostic value in this disease.

The serum of a rabbit immunized against *A. bovis* fixed complement with antigens prepared from *A. bovis* and *A. maduræ*, but not with antigens prepared from the acid-fast varieties *A. asteroides* and *A. gypsoïdes*, or from *Mycobacterium tuberculosis*. The

¹ 500 gms. of gelatin were hydrolyzed and the volume was brought to 2,000 c.c.

² Van Slyke, D.D., *J. Biol. Chem.*, 1911, x, 49.

³ 1,000 c.c. of the original hydrolysate were used for this experiment.

⁴ 130 c.c. of the original hydrolysate were used in this experiment.

serums of rabbits immunized against *A. gypsoides* fixed complement equally with antigens prepared from *A. gypsoides* and *A. asteroides*, and in lower dilutions with *M. tuberculosis*, but not at all with *A. bovis* and *A. maduræ*. The serums of rabbits immunized against *M. tuberculosis* fixed complement with the homologous antigen, and in lower dilutions, with antigens prepared from the acid-fast *Actinomyces*, *A. asteroides* and *A. gypsoides*, but not with *A. bovis* and *A. maduræ*. It would seem, therefore, that the acid-fast *Actinomyces* are more closely related to the acid-fast bacteria than to the non acid-fast *Actinomyces*.

A. gypsoides does not secrete a soluble toxine, but forms a very protent endotoxine. By careful vaccination there can be produced in rabbits an active protective immunity. The serum of such rabbits injected into guinea pigs gives the latter partial protection.

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The effect of sodium benzoate and sodium hippurate, and other drugs upon the glomerular circulation in the frog.

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The effect of injection of sodium benzoate and sodium hippurate on the circulation through the glomeruli of frogs' kidneys was studied by Richards's¹ method of direct observation. Sodium benzoate, .008 to .020 mil of a ten per cent. solution per gram frog, invariably causes increased circulation through the glomeruli, increasing both the number of functioning glomeruli, the number of active loops in each glomerulus, and the velocity of flow in each capillary. Sodium hippurate, .008 to .020 mil of a fourteen per cent. solution per gram frog, had the opposite effect. This harmonizes with the work of H. B. Lewis,² and F. B. Kingsbury and W. W. Swanson,³ who demonstrated that sodium hip-

¹ Richards, A. N., *Am. J. Med. Sc.*, 1922, clxiii, No. 1.

² Lewis, H. B., *J. Biol. Chem.*, 1914, xviii, 225. Lewis and Karr, *J. Biol. Chem.* 1916, xxv, 13.

³ Kingsbury, F. B., and Swanson, W. W., *Arch. Int. Med.*, 1921, xxviii, 220-36.