

in 4 equally divided doses daily to each of 4 patients suffering from pernicious anemia. In these doses the substance was well tolerated and in all instances promptly improved the appetite.

The hematological observations are recorded in Table I. The initial hemoglobin estimations made by the Sahli method on the 4 patients varied between 26 to 41%, the erythrocytes between 0.9 to 1.7 millions. After the treatment was instituted the maximum reticulocyte responses were 6.0, 5.0, 3.5, and 3.5% on the 7th, 3rd, 10th, and 3rd days respectively. The reticulocyte counts were made by Dr. Nathan Rosenthal. There were no rises in hemoglobin or erythrocyte counts except in case 2 where the hemoglobin mounted from 39 to 60% in 20 days without a corresponding increase in red blood cells. Ajinomoto ash contained only negligible traces of iron. Its copper content was not determined. The treatment with Ajinomoto was continued for 11 days, 27 days, 17 days, and 7 days respectively. Liver extract and hog stomach extract therapy was then instituted (Table I) with subsequent prompt rises in hemoglobin and erythrocytes.

Sodium-glutamate in the form of Ajinomoto is not an effective substitute for liver extract in the treatment of pernicious anemia. However, it is not completely devoid of activity, as indicated by minimal but definite reticulocyte response in 4 cases of the disease.

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A Recently Described Virus Disease of Parrots and Parrakeets Differing from Psittacosis.

THOMAS M. RIVERS.

From the Hospital of the Rockefeller Institute for Medical Research, New York.

The widespread outbreak of psittacosis in 1929 and 1930 incited experimental work that quickly resulted in the discovery of the fact that the disease is caused by an agent capable of traversing bacteria-tight filters. Thus the first filterable virus indigenous to parrots was found. Since Amazon parrots were believed to be the chief source of the infection, workers in Brazil sought for evidence of psittacosis in their country. Pacheco, Bier, and Meyer¹⁻⁴ encoun-

¹ Pacheco, G., and Bier, O., *Compt. Rend. Soc. Biol.*, 1930, **105**, 109.

² Pacheco, G., *Compt. Rend. Soc. Biol.*, 1931, **106**, 372.

³ Pacheco, G., and Bier, O., *Arch. Inst. Biol., São Paulo*, 1931, **4**, 89.

⁴ Meyer, J. R., *Arch. Inst. Biol., São Paulo*, 1931, **4**, 25.

tered a disease in parrots that subsequently was shown to be induced by a filterable agent. According to their reports, the etiological agent passes Berkefeld N candles, is not cultivable on ordinary media, produces areas of necrosis in the liver and spleen in which are found acidophilic nuclear inclusions similar to those seen in *herpes febrilis* and Virus III infections, and is not pathogenic for pigeons, chickens, mice, guinea pigs, or monkeys. Moreover, these workers state that the clinical picture observed in infected birds is similar to that seen in avian psittacosis, and believe that the strict adaptation of the virus to the *psittacidae* accounts for the absence of human psittacosis in Brazil.

Dr. Pacheco sent me some of his virus in order that its activities might be compared with those of a virus known to have caused psittacosis in human beings. This comparison has been made, and I can confirm the results of the experimental work reported by the Brazilian investigators. The virus is not retained by Berkefeld V and N candles, nor is it cultivable on ordinary media. Parrakeets are susceptible, while canaries, chickens, rats, mice, guinea pigs, and rabbits are insusceptible. Numerous acidophilic nuclear inclusions are found in the specific lesions. I do not agree, however, with the conclusions that the strict adaptation of the virus to parrots and parrakeets accounts for the absence of human psittacosis in Brazil. On the contrary, my experiments with the virus indicate that another filterable virus disease of parrots has been discovered. Its difference from psittacosis is manifested by the facts that the causal agent is nonpathogenic for mammals and produces lesions in avian livers and spleens in which numerous acidophilic nuclear inclusions are found, instead of the "minute bodies" first described by Levinthal⁵ as characteristic of psittacosis.

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Cumulative Effects on Protein Utilization of Highly Milled and Whole Wheat Flours.

J. F. LYMAN.

From the Laboratory of Agricultural Chemistry, Ohio State University.

When digestibility of food constituents is determined by the conventional method the experiment is of such short duration that

⁵ Levinthal, W., *Klin. Woch.*, 1930, **9**, 654.