

ployed was too small. Until such studies are completed definite conclusions regarding the fate of this acid must be withheld.

TABLE I.

	No. of Animals	Liver Average %	Glycogen, entire body except liver Average %
Fasting controls	32	0.070 (0.036-0.093)*	0.067 (0.049-0.092)
Sodium propionate	21	0.313 (0.092-1.370)	0.077 (0.061-0.104)
" butyrate	5	0.063 (0.057-0.069)	0.054 (0.043-0.065)
" valerate	6	0.096 (0.075-0.122)	0.076 (0.064-0.091)
" caproate	8	0.084 (0.046-0.098)	0.074 (0.059-0.071)

* These are the ranges in the individual experiments.

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Results of Feeding Staphylococcus Filtrates to Monkeys.

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Attempts to produce in the lower animals symptoms resembling those in human volunteers fed with staphylococcus filtrates have not generally been successful. Barber stated that kittens, puppies and monkeys show no symptoms after ingesting large quantities of milk cultures of the toxic staphylococcus isolated by him: "or at all events, the symptoms are very slight." Unpublished work by Dack and others in the Bacteriology Laboratory of the University of Chicago has similarly given negative results. Rhesus monkeys of approximately 6 kilos have repeatedly been fed large amounts—up to 60-70 cc.—of staphylococcus filtrates of proved toxic power for man without in any instance producing the "food poisoning" symptoms observed in human volunteers. These consistently negative results led us to abandon for a time attempts to produce illness in monkeys by feeding toxic filtrates.

In March, 1931, opportunity was offered us through the courtesy of Dr. H. C. Clark, Director of Gorgas Memorial Laboratory, Panama, of repeating these experiments with a number of smaller monkeys of different species. The monkeys used were chiefly the red spi-

der (*Ateles geoffroyi*), black spider (*Ateles ater*), black howler (*Alouota palliata insonans*), and white face (*Cebus capucinus capucinus*). They were nearly all juvenile, weighing between one and 2 kilos. The filtrates fed were from staphylococcus broth cultures after 2 to 3 days' growth; their gastro-intestinal toxicity for man was in each instance established by their effect in 2 cc.-10 cc. amounts on human volunteers. Thirteen monkeys were fed amounts ranging from 5 cc.-20 cc. A rubber catheter was introduced into the stomach, and measured amounts of the filtrate were slowly injected by a graduated syringe. In five (2 red spiders, 2 black howlers, 1 black spider) definite symptoms were observed of a similar character to those described in human subjects.¹ These animals suffered from marked diarrhea and showed lack of appetite; they remained huddled in a corner and apparently experienced abdominal pain. The onset of the symptoms occurred about 2 hours after the filtrate was administered, corresponding to what is observed in man. In one instance vomitus was found on the floor of the cage. The condition of malaise lasted for approximately one day, after which recovery appeared to be complete. In one animal, however, the diarrhea persisted for about 8 days. In 3 other animals symptoms of slight malaise were noticed; these were perfectly definite in character, such as weakness, sluggishness and lack of interest in food, but were not accompanied by active gastro-intestinal disturbances. The other 5 animals were not visibly affected by the feeding. One of the monkeys that had diarrhea after being fed 10 cc. of filtrate on March 2 manifested slight malaise when given 20 cc. of a less potent filtrate 10 days later.

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**Changes in the Reducing Substances in the Liver and Muscle in
Experimental Streptococcus Septicaemia.**

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This paper deals with the effect of experimental streptococcus septicaemia upon reducing substances in the liver and muscle of rabbits. It was recently shown¹ that during the course of such an

¹ Jordan, Edwin O., *PROC. SOC. EXP. BIOL. AND MED.*, 1930, **27**, 421.

¹ Linton, R. W., *J. Exp. Med.*, in press.