

The excretion of the dye by dogs 2 and 4 was 82% of normal.

The rate of disappearance of the injected fat from the blood stream was measured for each dog and the results are shown in Table II. The first examination of plasma fatty acids was made from 2 to 9 minutes after the completion of the injection, and at these times fatty acid concentrations were between 1110 and 1940 mg %. Utilization of the injected fat, as judged by its disappearance from the blood stream, was rapid in all 5 dogs, and by the time 4 hours had elapsed, the concentration of plasma fatty acids approached the preinjection levels.

The dogs were sacrificed by an overdose of nembutal 24 hours after the last injection. All organs were examined grossly and lungs, liver, kidney, spleen, small intestine, and heart studied microscopically. The lungs of all 5 dogs were free of lipoid granulomatous lesions and the lungs of only 2 dogs showed a few inflammatory foci. The reticulo-endothelial elements of the spleens and livers contained moderate amounts of blood pigments, a finding that indicates that some hemolysis had occurred. In dog 4, lipid-like material was found in the reticulo-endothelial cells of the liver and in the capillary loops of occasional glomerular tufts. Dog 2 had a few shrunken and scarred glomeruli adherent to the cap-

sule. Protein containing fluid was found in the glomerular and tubular spaces. Dog 5 was pregnant and 2 of its 6 fetuses were dead. The fatty acid contents of the livers of dogs 1-4 were normal (Table I). The liver of dog 5, as judged by microscopic examination, was free of abnormal amounts of fat.

Comment. It is shown here that by the use of glycerol monostearate as stabilizer, an olive oil emulsion in which the fat remains dispersed for several months can be easily prepared. This emulsion is well tolerated by dogs when injected intravenously at rates of 1 cc per minute per kg, and is rapidly removed from the blood stream. Although dogs that had received as many as 31 injections were not free of tissue responses, the reactions observed were quite mild in character.

In confirmation of earlier findings,^{1,2,4,7} it was observed here that intravenously administered fat rapidly disappears from the blood stream. The rate at which this occurs suggests that the administered fat is taken up by the liver for it has been shown that lipids disappear slowly, if at all, from the plasma of hepatectomized dogs.¹⁶

Summary. 1. The preparation of a stable olive oil emulsion in which glycerol monostearate was employed as the emulsifying agent is described. 2. Observations on its use for intravenous feeding in dogs are recorded.

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Excretion of 17-Ketosteroids by Patients Suffering from Poliomyelitis.*

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It has long been recognized that the incidence of poliomyelitis is greater for children than for adults (Fanconi¹). Since the excre-

tion of 17-ketosteroids increases rapidly during adolescence it was thought possible that a low androgen excretion may be directly or indirectly associated with an increased incidence to poliomyelitis. The excretion of 17-ketosteroids by poliomyelitis patients was, therefore, investigated.

The urine specimens from a total of 39

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¹ Fanconi, G., *Die Poliomyelitis und Ihre Grenzgebiete*, Benno Schwabe and Co., Basel, Switzerland.

TABLE I.
Excretion of 17-Ketosteroids by Patients Suffering from Poliomyelitis.

No. of patients	Sex	Age range	Type of poliomyelitis	Mg 17-Ks. excreted/24 hr range	avg
10	Male	5-13	Bulbar (4) Spinal (4) Bulbar-Spinal (2)	0.2-1.8 0.8-4.8 0.9-2.0	1.0 2.5 1.5
1	Female	7	Spinal	2.3	
15	Male	14-39	Bulbar (3) Spinal (8) Bulbar-Spinal (4)	11.4-36.0 3.4-27.1 14.9-22.1	19.0 10.3 19.0
13	Female	14-35	Bulbar (3) Spinal (8) Bulbar-Spinal (2)	3.1-7.2 2.0-21.1 8.6-14.6	5.4 8.0 11.6

patients entered at the University of Minnesota Hospital during the 1946 epidemic were studied. Of these, 11 were under age 13, 11 were females over age 14, and 15 were males over age 14. In some cases urine specimens were collected from the same patient on more than one occasion and these were subjected to separate analyses. All specimens had been stored in a frozen condition since the time of collection. The 17-ketosteroid fractions were prepared from 200-400 cc aliquots of 24-hour specimens by a modified Callow technic (Callow, *et al.*²) and were colorimetrically assayed by the technique of Holtorff and Koch³. The results are shown in Table I.

² Callow, N. H., Callow, R. K., and Emmens, C. W., *Biochem. J.*, 1938, **32**, 1312.

³ Holtorff, A. F., and Koch, F. C., *J. Biol. Chem.*, 1940, **135**, 377.

The values for the 17-ketosteroid excretion of the patients suffering from poliomyelitis for the most part fall within the normal ranges reported by others (cf. Talbot and Butler⁴) and as found in our own laboratory. These data thus tend to indicate that there is no relationship between the condition of poliomyelitis and the excretion levels of 17-ketosteroids. No significant differences were observed for the 17-ketosteroid excretion of patients suffering from different types of poliomyelitis.

Summary. The 17-ketosteroids excreted into the urine by patients suffering from different types of poliomyelitis showed no significant variations from normal excretion levels.

⁴ Talbot, H. B., and Butler, A. M., *J. Clin. Endocrinology*, 1942, **2**, 724.

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Growth Promoting Activity of Vitamin B₁₂ in Rats Receiving Thyroid Substance.

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The retarded growth observed in young rats fed toxic doses of thyroid powder is counteracted by liver.^{1,2} Extracted Liver Residues

¹ Ershoff, B. H., *Proc. Soc. Exp. Biol. and Med.*, 1947, **64**, 500.

² Bethell, J. S., Wiebelhaus, V. D., and Lardy, H. A., *J. Nutrition*, 1947, **34**, 431.

(Wilson) had "anti-thyrotoxic" activity when fed at a level of 10% in a diet containing 22% casein.³ Reticulogen also was effective in reversing the growth retarding action of thyroid substance in chicks fed a diet devoid of animal protein.^{4,5}

³ Ershoff, B. H., *Arch. Biochem.*, 1947, **15**, 365.