

# SCIENTIFIC PROCEEDINGS.

I (610)

## **Experimental pernicious anemia.**

By **HERMAN M. ADLER.**

*[From the Laboratory of the Danvers State Hospital.]*

These experiments were performed on rabbits; fourteen rabbits in all were employed. Olive oil was fed in varying doses. Two feedings of 10 c.c. of olive oil per kilo of body weight sufficed to kill after 5 days. 6 c.c. per kilo weight killed in six days when fed daily. 5 c.c. per kilo weight did not kill but produced secondary anemia with blood crises presenting the picture of pernicious anemia—blood count 4 to 5,000,000, Hb. 50 per cent. or less, achromia, irregularity in size and shape, polychromatophilia, stippling, blasts.

Eight rabbits were thus subjected to chronic poisoning with olive oil. Of these, three had previously been daily fed (for about a year) 0.3 gram quinine. Three rabbits had been treated for three months with intravenous injection of 0.01 gram quinine daily. The remaining two received daily feedings of olive oil without previous treatment. In all of these rabbits the blood picture of secondary anemia developed within a few days. In four the blood picture of pernicious anemia developed in from 2–3 months. The anemia was not constant but varied considerably. The weight curve approximately followed the appearance of the blood; dropping sharply as the anemia became apparent, rising as the anemia improved. Five of these rabbits showed marked impairment of nutrition during the entire course, the younger ones being decidedly stunted in their development. The three rabbits that had been fed quinine per os showed less severe disturbances and none of them have thus far (after 1½ years) shown the picture of pernicious anemia. The weight and blood

conditions improved markedly when the feeding of oil was suspended.

Calcium lactate, lime water, Fowler's solution and tincture of ferric chloride were fed at different times with the olive oil without, however, appreciably diminishing the effect of the oil. The action of the olive oil depends upon its content of triolein (oleic acid). Pure oleic acid was fed to a rabbit and found to be no more toxic than olive oil.

A noteworthy phenomenon in the chronically poisoned rabbits was a swelling of the heels, evidently hematmata, which came on suddenly in all of the rabbits, furthermore a crusted suppurating skin lesion which appeared on the inner surfaces of the ears of six out of eight of the rabbits.

The post mortem examination of the rabbits which died after only a few doses showed practically nothing except a slight congestion of the small intestine. In the autopsies on rabbits which had received many doses general absence of fatty deposits together with fatty changes in liver, heart and kidneys and an atrophic condition of the spleen and lymphoid apparatus were noted.

From this and from the appearances observed in human beings suffering from pernicious anemia, it is fair to assume that the lymphoid tissue, particularly of the intestine, is chiefly concerned in handling the fat absorbed from the food by the intestine.

## 2 (611)

### **The influence of age on the symptoms following thyro-parathyroidectomy.**

By **SUTHERLAND SIMPSON.**

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With regard to the question as to whether the thyroid and parathyroid glands become less and less essential to the organism as age advances there is some difference of opinion. Vincent and Jolly<sup>1</sup> found that in the various species of animals which they used (cats, dogs, foxes, monkeys, rats, guinea-pigs, rabbits), the symptoms following thyroidectomy and parathyroidectomy were

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<sup>1</sup> Vincent and Jolly, *Jour. of Physiology*, 1904, xxxii, p. 80.