

and continued to increase rapidly until the maximum number was reached on the thirteenth day in Case 2. These curves agree with the results obtained by practically all who have made similar observations.

Cases 3 to 8 were operated upon for other purposes. The record of the platelet counts in these cases is also illustrated in Fig. 1. It is evident that the striking increase which is observed after splenectomy does not occur. In fact, in 4 cases, the platelets diminished, as they do after many other procedures and conditions.<sup>2</sup> A decrease is noted in case 5 (excision of cervical polyp and herniorrhaphy), case 6 (herniorrhaphy), case 7 (herniorrhaphy) and in case 8 (hydrosalpinx, excision of cystic ovary). It is of course possible, if further observations had been made in these cases, that the platelets would have been found increased after the sixth day as in cases observed elsewhere.<sup>5</sup>

A slight, transient increase in the number of platelets occurred in case 3 (cholecystoduodenostomy) and in case 4 (posterior gastroenterostomy after cauterization and eversion of a peptic ulcer).

*Conclusion.* Increase in the number of platelets after splenectomy or other operations, according to certain observers,<sup>1</sup> appear to be rather constant in rabbits. The behavior of platelets after splenectomy in humans is very different from that after other operations. After splenectomy there is usually an abrupt rise to a high level beginning immediately after operation. After other surgical procedures the variations are inconstant. The number of platelets may decrease or increase.

## 5862

### Experimental Edema Produced by Plasma Protein Depletion.

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A study was made of the water and chloride metabolism of dogs during the development of low serum protein edema. The sites of deposition of water and chloride were determined by analyses of tissues obtained at autopsy.

Dogs were fed a diet of known amount and composition. After a control period of one to 2 weeks, blood was removed every day for 1 to 7 days, was deprived of its plasma, and the washed cells suspended in calcium-free Locke's solution were returned to the animal. Blood and urine analyses were performed during both the control and experimental periods.

At suitable junctures in the experimental periods, the dogs were sacrificed by carbon monoxide gas and immediately autopsied. Tissues were removed and analyzed for water and chloride content. The values found on 7 dogs were compared with the average values of tissues taken from 3 dogs that had been subjected to various control procedures, and sacrificed and autopsied exactly as the hypoproteinemic animals.

Edema was found to occur consistently when the serum protein concentration was below 4.0%. The occurrence of the edema was associated with retention of sodium chloride and water, and the retained chloride and water were recovered with considerable accuracy in the tissues analyzed. Skin stored most of the water while most of the retained chloride was found in muscle. The retained water and chloride constituted an isotonic concentration in the skin and a hypertonic concentration in muscle.

Upon the basis of the data obtained, it is concluded that the edema which occurs in dogs rendered hypoproteinemic by plasmapheresis is a sodium chloride edema, the development of which is facilitated by the presence of a low serum protein concentration and exaggerated by increasing the sodium chloride intake and water intake of the animals.

## 5863

### Shwartzman Phenomenon in the Rabbit Stomach.

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The Arthus phenomenon was first observed as a skin reaction and subsequently shown to occur in various internal situations with interesting and valuable results.<sup>1</sup> The Shwartzman phenomenon has been studied as a skin reaction in great detail,<sup>2</sup> but little attention

<sup>1</sup> Nordmann, M., *Physiol. Rev.*, 1931, **11**, 41.

<sup>2</sup> Shwartzman, G., *Klin. Wchnschr.*, 1930, **9**, 1925, 1974; *J. Exp. Med.*, 1931, **54**, 711.