

from the others, possibly because of containing alcohol of crystallization. These crystals readily change, as a result of prolonged drying, so that their crystalline structure is the same as that of the plate form. These results do not indicate, however, that there is any difference in the structure of the glycine molecule in the plate and needle forms of the crystals. At present the spectrum of sample D, Group I, cannot be explained.

Work is being done in an attempt to elucidate the complete crystal structure of glycine.

4382

Changes in the Size of the Spleen Following Exercise.

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Barcroft and Stephens¹ in a recent investigation have shown that gross changes in the size of the mammalian spleen may be studied in so called exteriorized preparations by means of outline tracings on a plate of celluloid. They find that during muscular activity the spleen shrinks to approximately two-thirds of its resting area.

It seemed worth while to us to investigate the course of recovery in the size of spleens which had contracted as a result of periods of exercise of widely varying intensity and duration. The technique of our experiments differed from that of the Cambridge workers in that we were making recovery observations over short periods of time on decerebrate cats, exercised by means of electrical stimulation. Hence it was sufficient to make a temporary exteriorization which consisted essentially of bringing the spleen through a 2 inch incision which had been carried from the skin through the peritoneum. During active exercise and when no actual measurements were being made, the spleen was returned to its place in the abdomen, and the incision was temporarily closed. Control experiments showed that this repeated exteriorization and replacement *per se* had no apparent effect on size. The area of the spleen was computed from the tracings and used as a basis of comparison.

The results of our experiments show that in cats which were decerebrated so that no rigidity developed, the spleen immediately after exercise had contracted to about 70% of its original area; the

¹ Barcroft, J., and Stephens, J., *J. Physiol.*, 1927, lxiv, 1.

latter had been determined before exercise. Our experiments on this point thus check with those of Barcroft and Stephens within reasonable limits.

Having measured the extreme contraction immediately after exercise, we then traced the course of recovery by continuing measurements until the spleen had attained all or most of its resting size. We found that recovery begins as soon as the exercise ceases because our measurements (made within 1 minute of the cessation of the electrical stimulation) invariably show a spleen which is increasing in size. This increase appears to consist of 2 phases, of which the first is very rapid, particularly within the first 5 minutes. The second is slower, continuing until the spleen has returned to its resting size. This usually takes from 15 to 30 minutes.

The speed of the first, or rapid, phase of recovery appears to be nearly constant under all conditions, and is independent of the intensity or duration of the preceding exercise. When the data are plotted as per cent of normal size, against time, the slope of the resulting curves for the first 3 to 5 minutes is constant within the error of the method. The speed of the second, slower, phase of recovery is variable and our data have not as yet enabled us to relate it definitely to any of the experimental conditions.

A few cats were not decerebrated but were anesthetized with amytal. The same 2 phase recovery was here likewise observed.

4383

Ultrafiltration Studies on the Bacteriophage.

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Studies on the magnitude of the bacteriophage corpuscle have been carried out by a number of investigators with widely different result. Thus Bechhold and Villa,¹ Prausnitz,² and Stassano and de Beaufort³ assigned a diameter of about $20\mu\mu$ to the lytic particle; Eliava and Suarez⁴ conclude that the diameter is considerably less

¹ Bechhold, H., and Villa, L., *Z. Hyg. u. Infektionskrankh.*, 1925-26, cv, 601.

² Prausnitz, C., *Klin. Woch.*, 1922, i, 1639.

³ Stassano, H., and de Beaufort, A. C., *Compt. rend. Soc. de Biol.*, 1925, xciii, 1378.

⁴ Eliava, G., and Suarez, E., *Compt. rend. de Soc. de Biol.*, 1927, xevi, 462.