covering of the plant; and that the 5.33 A. u. planes are radial to the sphere, that is, at right angles to the 6.10 planes. It was also readily demonstrated that the 3.93 A. u. planes are diagonals to the two just mentioned. The cellulose framework of the membrane, then, when viewed along a normal to the surface would appear as a lattice, the surface layer of which has its glucose units spaced regularly 5.33 x 5.15 A. u. and the layers parallel to the surface layer spaced 6.10 A. u.; the included angles are within 2° or 3° of right angles.

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Inhibition of Water Diuresis by Amytal.

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Recently Fee[1] has shown that the water diuresis, established in decerebrate dogs by administration of water through the stomach tube, is checked by the administration of chloroform, ether, chloralose, or morphine in the doses commonly employed to produce anesthesia or analgesia. The inhibition lasts, roughly speaking, for the same length of time as the narcotic effect.

The technique given in the paper referred to, has been followed exactly in the 6 experiments reported here with the exception that intraperitoneal amytal was used instead of the drugs previously employed.

In all cases the full dose (0.05 gm. per kilo) produced an immediate and lasting inhibition, complete as regards the excess water elimination. In the only two cases where measurements were made at minute intervals, the diminution in urine flow began during the second and third minutes respectively, following the injection of amytal. In one experiment the excretion was followed for over 10 hours and no recovery was observed.

The following are the records of 2 typical experiments, the measurements being expressed graphically:

I. Dog, male, 7.0 kilos. Anesthetized with chloroform and ether 50/50.
9:40 a. m. Decerebration complete.
10:15 " Cannulation complete.

[1] Fee, *J. Physiol.*, 1929, lxviii, 39.

11:00 " Urine flow well established. 0.5 cc. per 10 minutes.
12:10 p. m. 500 cc. water by stomach tube A.
2:45 " 4.0 cc. N/2 NaOH intraperitoneally B.
3:15 " 0.4 gm. amytal in 4.0 cc. NaOH intraperitoneally C.
2:00 a. m. (approx.) Animal died.
Urine flow: Correlate with reduced size of curve X.

II. Dog, male, 7.5 kilos. Anesthetized as above.
4:45 p. m. Anesthetized.
5:25 " Decerebration complete.
6:10 " Cannulation complete.
8:50 " Urine flow established. 0.8 cc. per minute.
9:30 " 250 cc. water by stomach tube a.
10:07 " 250 cc. water by stomach tube b.
11:23 " 0.2 gm. amytal in 2 cc. N/2 NaOH, intraperitoneally c.
12:15 a. m. 0.2 gm. amytal in 2 cc. N/2 NaOH, intraperitoneally d.
1:00 " Observation abandoned, death probably 4-5 hours later.
Urine flow: Correlate with reduced size of curve O.

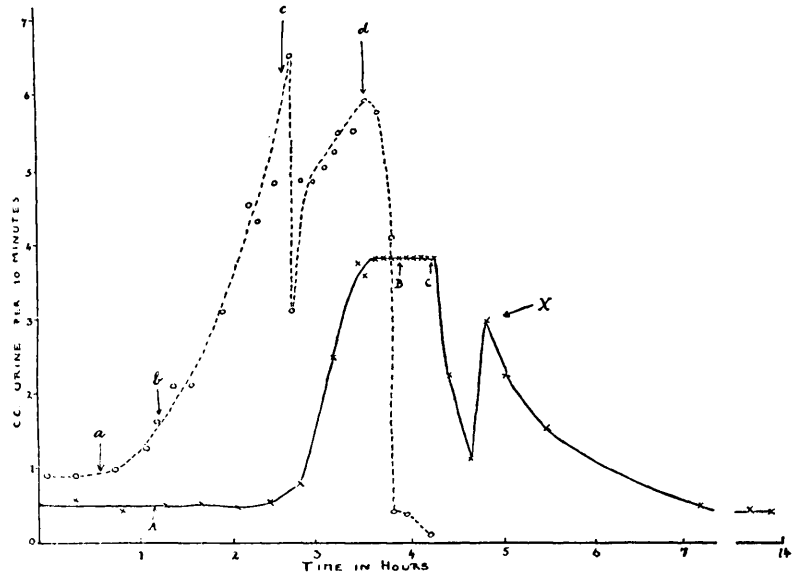

FIG. 1.

No explanation is offered for the rise in curve I (marked X) but a similar rise was also noted in another experiment.

The partial inhibition observed after the first injection in curve II has been observed with a dose as little as 1/10 gm. in a 6 kilo dog.