

Lactose excretion first day after operation 5 hours.
 Lactose excretion thirteenth day after operation 5 hours.
 Iodid excretion first day after operation 24 hours.
 Iodid excretion thirteenth day after operation 24 hours.
 Salt excretion third day after operation .3 per cent. (.7 gm.)
 Salt excretion thirteenth day after operation .26 per cent. (1.1 gm.)
 Albumin present for one day. No casts seen. Animal killed on the fourteenth day.

RABBIT 3.—Weight 1.850 gm. Weight of removed kidney 7 gm. Weight of remaining kidney after death 7 gm.

Sulphonephthalein excretion first day after operation 25 per cent.
 Sulphonephthalein excretion second day after operation 30 per cent.
 Sulphonephthalein excretion fifth day after operation 55 per cent.
 Sulphonephthalein excretion twentieth day after operation 70 per cent.
 Lactose excretion first day after operation 5 hours.
 Lactose excretion nineteenth day after operation 5 hours.
 Iodid excretion first day after operation 24 hours.
 Iodid excretion nineteenth day after operation 24 hours.
 Salt excretion third day after operation .6 per cent.
 Salt excretion nineteenth day after operation 1.1 per cent. (1.5 gm.)
 Albumin present for one day. Hematuria for one day. Animal killed on the twenty-first day.

Clamping of the renal circulation up to forty minutes, in the majority of cases, produced a definite disturbance in renal function. Its intensity bore no relation to the length of time the vessels were clamped, nor was the vascular or tubular function chiefly affected (Protocols I to IV). This was shown by the presence of albumin and casts in the urine, by a diminished phthalein output of varying degree, and by a delayed lactose and iodid excretion. Salt was constantly well excreted. The animals recovering, regained nearly normal function within six days, showing that the disturbance was slight and temporary. One animal failed to return to a normal phthalein output. No explanation was found for this at autopsy. Two animals with circulation clamped for forty minutes died quickly with marked signs of renal insufficiency.

All the animals, however, with one kidney removed and the circulation of the remaining kidney clamped for an hour (Protocol V) died within eight days. There was evidence clinically as well as by these tests of extreme disturbance of function. An interesting proof of how important a part in renal surgery the unoperated kidney plays is seen in Protocol VI. In this series, though the circulation was clamped for an hour, with a normal kidney remaining, the function was but slightly and temporarily disturbed.

That the effect of nephrectomy alone did not produce the results obtained is seen from Protocol VII. In two animals the functional tests were unaffected. In the third the phthalein output was slightly reduced for three days. The other tests were normal.

Pathologically, similar changes were noted to those described by previous authors. The earliest changes, grossly, were marked congestion with scattered minute hemorrhages. As the length of time following