2. The Berkfeldt filtrate of Mouse Sarcoma No. 37 also incubated anaerobically yielded 6 tumors out of 164 injected animals.

3. Tumor tissue incubated anaerobically does not seem to be sufficiently viable to produce tumors when inoculated subcutaneously.

4. Mouse Carcinoma No. 63 yielded 2 tumors out of 81 injections of the supernatant fluid from incubated mouse carcinomata.

5. The filtered fluid from Mouse Carcinoma No. 63 so far has not produced a single successful tumor formation.

3041

Functioning autoplastic suprarenal transplants.

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No proof has as yet been presented that free transplants of the suprarenal gland function. Our experiments, with the view of obtaining evidence of function, were carried out on both the rat and the guinea pig. We realize the difficulties of interpreting results in favor of function in the rat, particularly if the clinical condition of the animal is taken as an index, because of the frequent occurrence of accessory suprarenal tissue. For crucial evidence of functioning free transplants we used the guinea pig because continued survival of this species after complete bilateral suprarenal ablation has never been reported. The best results are Rogoff's,[1] who, in a series of 17 animals with an interval of 2 to 3 weeks between the removal of the right and left glands, reports that 1 pig lived 28 days, while 14 of the 17 died during the first 8 days.

PROCEDURE.

In the rat both glands were removed in one sitting and placed in sterile physiological saline at about 39° C. Each gland was cut in half and the four parts were immediately transplanted into

[1] Rogoff, J. M., quoted by Stewart, G. N., *Physiol. Rev.*, 1924, iv, 167.

pockets between the fascia and abdominal muscle, or in the abdominal muscle. In 3 or 4 weeks the transplants regenerate as highly vascularized masses of cortical tissue, with the three cortical layers. Medullary tissue does not regenerate. Transplants in rats sometimes attain the size of suprarenal glands of adult animals.

In the guinea pig difficulties are encountered in transplantation because the muscle of this animal is highly sensitive to epinephrin, as described by Elliott and Tuckett.[2] Small amounts of this drug when introduced with the transplant may cause marked swelling, and this may be followed by sero-sanguinous oedema, necrosis, sloughing, and infection of the abdominal wall, so that the transplants are destroyed. For the successful transplantation of the suprarenal in guinea pigs, the medulla must be separated from the cortex. Our procedure, therefore, is to remove the right suprarenal gland completely, separate cortex from medulla, and transplant 8 to 16 fragments of cortex into the abdominal wall. After an interval of from 3 to 7 weeks the left suprarenal is removed.

EVIDENCES OF FUNCTION.

Rat. The evidence of function of free suprarenal transplants in this animal is suggestive for the following reasons, but not conclusive:

1. Of 67 young rats which were suprarenalectomized and autoplastically transplanted, and observed from 2 to 10 months after operation, only 4 died; in our experience about 40 per cent of these animals would have died if they had been only suprarenalectomized.

2. In every instance where the rat, after transplantation, died spontaneously from suprarenal insufficiency, the transplants had degenerated.

3. Where the transplants were large and well vascularized the rats approached the normal litter and sex controls in weight and activity.

Guinea pig. The right suprarenal was transplanted and the left gland removed in 19 guinea pigs. Five animals died within 4 days after removal of the left gland. There was 1 operative death, and 4 deaths from suprarenal insufficiency, 1 on the 2nd, 2 on the 3rd, and 1 on the 4th day. The autopsies of the last 4

[2] Elliott, T. R., and Tuckett, I., *J. Physiol.*, 1906, xxxiv, 362.

animals showed complete removal of both main glands, no macroscopic accessories, and no positive transplants. In 2 of these 4, the marking sutures were missing, due either to sloughing of the abdominal wall or to absorption.

Of the remaining 14 guinea pigs, 8 are still surviving in good condition, 2 for 40 days and the rest for 60 days after the removal of the second gland. These animals are active and eating, although 1 is not gaining in weight. Two were sacrificed in good condition 14 days after removal of the left gland; the autopsies showed complete bilateral ablation of the suprarenals, and numerous pin-head sized positive transplant areas, which on section showed nests of well vascularized cortical cells in glomerular formation. Four guinea pigs died from suprarenal insufficiency following removal of the left gland, the deaths occurring on the 15th, 41st, 48th, and 52nd day. Two of these animals were pregnant. The transplants in these animals had been absorbed.

Guinea pigs do not live on an average for more than 3 or 4 days after removal of both suprarenal glands. We have 8 out of 12 transplanted guinea pigs surviving from 40 to 60 days after complete removal of both suprarenal glands. These results, therefore, bring strong evidence in favor of the fact that the transplants are maintaining life.

3042

Purification of cultures of bacteria by means of reverse selective bacteriostatic properties of aniline dyes.

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In a recent study of the sporulation of *Bacillus anthracis,* this organism was recovered from the spleen and heart's blood of a mouse, dead of the experimental disease, in association with a small gram negative bacillus. The presence of the contaminating organism could not be detected on the agar transplants because of the overgrowth of *B. anthracis,* but it could readily be seen in smears. The observation of this gram positive spore bearing