84 (227)

Transplantation of the thigh from one dog to another.

By **ALEXIS CARREL.**

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The first attempts at transplanting a limb from one animal to another were made last year in the University of Chicago by Guthrie and myself. No definite results were observed because of infection or the breaking of the bone suture.

Lately the transplantation of the thigh from one dog to another was tried again with an improved technique.

On April 23, 1907, at 9.50 a. m., a medium-sized dog was killed with chloroform. At 10.20 a. m. the left thigh of the cadaver was amputated just below its middle part, perfused with Locke's solution and placed on a table of the laboratory, the temperature being 88–90° F.

At 11 a. m., a medium-sized bitch was etherized, her left thigh amputated and immediately replaced by the thigh of the dead dog. The reconstruction of the thigh began by the suture of the bone, the adductors and quadriceps. Then the femoral vessels were united and the circulation re-established at 1 p. m. The operation was completed by the suture of the nerves, muscles, aponeuroses and skin, and the limb placed in a plaster of Paris apparatus.

On April 23, 24 and 25 the animal remained in good condition and walked on her three normal feet. The transplanted limb was warmer than the normal one and its circulation very active. On April 26, she appeared to be sick. There was a phlegmon of the thigh. Incisions were made in Scarpa's triangle and on the transplanted limb, which was warm. Hemorrhage of red blood occurred from the incisions in the transplanted limb.

During the succeeding days, the circulation of the limb remained active, the foot became swollen and the general condition of the animal declined. On May 1, a large abscess was detected near the pelvis and opened. A small incision having been made on the foot of the transplanted limb, hemorrhage of red blood occurred. The general condition of the animal was very low. On May 2, the animal died of septicemia.

Then, it was found that the lumen of the femoral vessels was

free of thrombus, and the intima, smooth and glistening. There was no deposit of fibrin on the lines of suture. In spite of the infection, the union of the vessels was excellent. The skin and the muscles were cicatrized and the ends of the femur firmly united by the ligature.

85 (228)

The bacteriotherapy of leprosy.

By **PAUL G. WOOLLEY** (by invitation).

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That a given organism either cannot be grown outside the body, or can only be grown with great difficulty and uncertainty, would appear, at first sight, to offer an insuperable obstacle to the development of any method of therapeutic vaccination, — vaccination, that is, during the course of a disease, by inoculations with the specific bacteria, or their products, — such as has been practiced by Koch in connection with tuberculosis, and by Wright to arrest suppurative and other conditions. Preëminent among microbes belonging to this category is the leprosy bacillus : the difficulties in the way of gaining adequate growths of this organism have thus far prevented the development of any bacteriotherapeutic means of treating the disease due thereto.

A possible method of overcoming the obstacle has suggested itself to me ; and I am already testing it. But in Siam, the number of suitable cases presenting themselves is not great. The value of the method can only be determined by noting the results gained in a relatively considerable number of cases ; hence it has seemed to me advisable to describe it in the hope that others having fuller opportunities may be induced to test the procedure and its value. My somewhat remote station is against a familiarity with the most recent literature : to my knowledge the method has not hitherto been published, and is original. The nearest approach to it, that of *preventive* vaccination against black-leg by means of the desiccated spore-bearing muscle tissue of a previous case, differs in many important particulars.

Briefly, it seemed to me that lacking pure cultures for the purpose, I might make the leprosy patient serve as his own culture medium. It is well known how abundant are the bacilli in the