

wards and backwards over the corresponding malleolus and their extremities, united by a transverse cut across the back of the leg, made down to the bone, at the level at which it is to be sawn, usually immediately above the joint surface of the tibia. In cases where a larger removal of the tibia and fibula is required, the lateral incisions must be more oblique, and the posterior transverse cut made at a higher level.

The ankle-joint is now opened from behind, the disarticulation completed, and, after flexing the foot, the soft parts are carefully separated in front until the medio-tarsal joint is reached, where disarticulation is effected, as in Chopart's operation. The heel portion of the foot—consisting of the astragalus, or calcis, and the soft parts covering them—is thus removed. The articular surfaces of the tibia and fibula, with the malleoli, are now sawn off, as well as those of the cuboid and scaphoid bones. The anterior portion of the foot remains connected with the leg by a loose bridge of soft parts. The blood supply appears to be ample, for almost directly after the operation blood issued freely from the distal ends of the plantar arteries.

All hæmorrhage having been arrested, the foot was brought into a straight line with the leg, and the cut surfaces of bone were sutured together with kangaroo tendon. The attempt to discover and unite the divided ends of the posterior tibial nerve failed on account of the sodden condition of the soft parts. Suitable dressings and a plaster-of-Paris splint were applied, the toes being brought into a position of complete dorsal flexion.

I need not detail the after treatment; the boy made an excellent recovery, and a firm bony union eventually took place. Sensibility began to return in the sole of the foot in about a month, and this gradually became more complete. In December the boy returned to the hospital to be fitted for the boot he now wears. (Fig. 2.) He can stand or walk with ease and comfort. The left limb is half an inch longer than the right. The sensibility of the left foot appears to be perfect, showing that the divided nerve must have united. The toes are mobile. I regarded

such a result as this, obtained under very unfavorable circumstances, as an exceedingly satisfactory proof of the utility of the operation.

Waldimiroff, of Kansas, in 1872, appears to have been the first to perform the operation, but Mickulicz first published an account of it in *Langenbeck's Archiv*, 1881.

The functional result, as I think this case will show, is an admirable one. An artificial *pes equinus* is procured, the object being to preserve the toes and metatarsal bones, which are sacrificed in other amputations of the foot; these are brought into a straight line with the leg, and the toes bent at a right angle, so that the patient walks on the ends of the metatarsal bones, covered by the thick pads of tissue which invest them. A broader surface of support is provided than is afforded after either Syme's or Pirogoff's amputation, and there is some elasticity of foot left. In ordinary cases the limb will be longer by nearly an inch, which can be readily compensated for by a thicker sole on the other boot.

As regards indications, it may be at once conceded that the operation will prove better adapted to cases of injury—gunshot injury more especially—than for those of disease. My experience of this case, however, would tempt me to adopt the procedure again in any case where the bones in the heel and soft parts covering them were extensively damaged or diseased, the anterior half of the foot remaining healthy.

The patient, when shown to the Medical Society, walked with the greatest facility up and down the room, both with and without the boot. There was perfect union at the line of section, and he was evidently very proud of his power to walk so well, and with such ease.

RESIDENCE IN HIGH ALTITUDES IN CONSUMPTIVE CASES.

Dr. Theodore Williams, of London, has arrived at the following conclusions:—

1. That prolonged residence at high altitudes produces great improvement in the majority of consumptive patients, and