TABLE III.

Stations.	Average Annual Number of Days Rain Fell.	Average Seasonal Rainfall.	Average Annual Number of Clear Days.	Average Annual Number of Fair Days.	Average Annual Number of Cloudy Days.
Los Angeles	—	Inches. 17.68	171.3	142.4	51.6
Oakland	68.0	24.54	263.9*	—	101.4
Red Bluff	—	27.46	227.7	81.7	55.3
Sacramento	69.6	19.94	240.0	74.9	50.4
San Francisco	—	24.25	146.7	139.0	79.6
Santa Barbara	—	16.92	No record	No record	No record
San Diego	—	11.01	122.3	157.6	85.4

* Clear and fair days combined; they are not recorded separately.

The following table is self explanatory:

TABLE IV.—Average Direction from which the prevailing Winds have been observed to blow. The Averages are from 7 to 15 Years; those in San Diego and San Francisco are Averages from 1871 to 1884, while Los Angeles, Sacramento, and Red Bluff are from 1877 to 1884.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
San Diego	NE	NW	W	W	W	W	W	W	NW	NW	NW	NE
Los Angeles	NE	NE	W	W	W	W	W	W	W	W	NE	NE
San Francisco	N	W	W	W	W	SW	SW	SW	SW	SW	NW	N
Sacramento	SE	SE	S	S	SW	S	S	S	S	S	SE	N
Red Bluff	N	N	S	S	S	S	S	S	S	S	SE	N
Cape Mendocino	NW	NW	SE	NW	NW	NW	NW	N	N	N	SE	NW

The velocity of the wind is not given, but I may say that in the interior of the State what sailors call a "moderate gale" is practically unknown. I have but seldom seen even a "stiff breeze" in the capital city.

These facts and figures are submitted without extended comment. We who live in the Far West are, perhaps, too apt to boast of our "glorious climate," but those only who have existed for years in less hospitable regions can appreciate what it truly is. For persons of comfortable or ample means California is easy of access, and can be reached in eighteen days from any point of departure in the United Kingdom. The journey can be made in comfort and even luxury. By the Royal Mail and Pacific Mail the trip can be made almost wholly by sea, and for good sailors it is the easiest way to travel.

A CASE OF OSTEO-PLASTIC RESECTION OF THE FOOT BY THE METHOD OF MICKULICZ.

By SIR WILLIAM MACCORMAC, F.R.C.S.

Surgeon, St. Thomas's Hospital.

THE lad whose case I wish to bring before the Society this evening is now 16 years old. On March 12th, 1887, I performed the operation introduced by Mickulicz, of Prague, and Wladimiroff, of Kasan. So far as I know it has not been previously performed in England, and as now more than a year has elapsed since the date of the operation, the Fellows of the Society will be able to estimate the amount of usefulness attained in the limb. The notes were taken by Mr. C. H. James, dresser of the case.

W. B., aged 15, a clerk, much emaciated, with a pasty face and dull, suffering expression, was admitted to St. Thomas's Hospital January 29th, 1887. There is no history of phthisis, and both parents are alive and well. Six months before the boy fell downstairs and sprained his left ankle. He was treated as an out-patient with strapping and plaster-of-Paris splints without improvement. One abscess had formed behind the inner malleolus, which was opened, and another in the sole of the foot. The swelling was very prominent on each side of the tendo Achillis. The sinuses led down to diseased bone, and it was evident the

joint between the astragalus and os calcis was extensively diseased. Two further abscesses presently formed, and the general condition of the patient became much worse. There was now evidence that disease was beginning in the ankle-joint. The parents very reluctantly consented to an operation, stipulating, however, that the foot must not be amputated. The soft parts covering the heel were much infiltrated and riddled with sinuses, but considering the disease to be limited to the os calcis and astragalus, and involving secondarily the joints adjacent, Sir William decided to perform the following operation.

The patient was placed in the prone position. If it be the right foot, the knife is introduced on the inner border of the foot just in front of the scaphoid tubercle, and a transverse incision extending to the bone is made across the sole of the foot to a point a little behind the tuberosity of the fifth metatarsal bone. On the left foot the direction of this incision will, of course, be reversed.

From the inner and outer extremities of the wound incisions are prolonged upwards and backwards over the corresponding malleolus and their extremities (Fig. 1), united by a transverse cut

Fig. 1.—Direction of the incisions: Mickulicz's operation.

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, os 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 (Fig. 2). The

Fig. 2.—Line of section of the bones.

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 divided 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. 3.) He can stand or walk with ease and comfort. The left limb is half an inch longer than the right. (Fig. 4.)

Fig. 3.—Foot fitted with boot.

Fig. 4.—Stump after Mickulicz's operation.

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 unfavourable circumstances, as an exceedingly satisfactory proof of the utility of the operation.

Wladimiroff, of Kasan, 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 (Fig. 4). 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 of 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.

OBSTETRIC MEMORANDA.

CASE OF LABOUR, WITH DOUBLE UTERUS AND VAGINA.

Mrs. C., aged 23, sent for Dr. Culpin on September 17th, 1883. Previous to her marriage, she had always had good health, never having had occasion to seek medical advice. Neither the patient nor her husband had ever suspected any abnormality. She had been married sixteen months, and had had one miscarriage when three months pregnant. She now believed herself at the full term of pregnancy. Labour pains were first felt at 2 A.M. on September 17th, and soon after the membranes ruptured. At 10 A.M. Dr. Culpin was sent for. He found a double vagina. The two canals were about equal in size, and the finger entered one as readily as the other. At the end of the right vagina, the os uteri was found dilating, and a foot presenting. At the end of the left was an undilated cervix uteri, and to the right of this the presenting foot could be easily distinguished through the septum, which was entire throughout the whole length of the vagina. There was not any unusual obliquity of the uterus. A sound could be passed into the left cervical canal. Dr. Herman subsequently saw the patient with Dr. Culpin, and confirmed the existence of the state of things described. Delivery was left to Nature until the pelvic extremity of the child had been born, which happened about midday on the 18th. The delivery of the shoulders and head was then accelerated in the usual way; but presented difficulties greater than would have been expected from the size of the child. After delivery, the upper half of the vaginal septum was found to have been torn through. The child was stillborn. Nothing abnormal was noticed about the third stage of labour, or the lying-in. Nothing like a decidua membrane was noticed in the discharges. The patient was delivered of her second child on February 27th, 1888, Mr. Plaister being in attendance. She believed herself to have gone the full term of pregnancy. Mr. Plaister was not sent for until the head had descended well down into the vagina, and was pressing on the vaginal septum. This he pushed to the left side. In the intervals between the pains, he could distinctly feel the left os uteri, and, after delivery, he ascertained that the child had been born from the right uterus. The child was a male, living, weighed 5 lb. 10 oz., and measured 19 inches in length. The labour was a quick one. On March 3rd, Dr. Culpin and Mr. Plaister examined the patient together. The sound entered the left uterus two inches. No decidua membrane was seen by them, or noticed by the nurse. The left cervix uteri had the appearance of that of an unimpregnated uterus. On April 16th, Dr. Herman examined the patient with Mr. Plaister. By bimanual examination the two uteri could be distinctly felt; they moved together. The left uterine body was smaller, rounder, and harder than the right. The sound entered the right uterus for three inches. The vaginal septum had been completely torn through.

In this case the kind of abnormality present was that known as uterus bicornis duplex. There were two distinct uteri, each with its own cervix and vagina, but the two cervices were united. The researches of Kussmaul¹ show that some abnormality in labour was met with in about half of the cases with this formation. But, as in easy labours an anatomical peculiarity is likely to be overlooked, he thinks this proportion too high to represent the truth, although high enough to show that the occurrence of difficulty is more than a coincidence. The more common sources of difficulty are those exemplified by the first labour in this case: first, that the vaginal septum offers resistance to dilatation, a resistance overcome in this case by spontaneous tearing of the septum, which was partly destroyed in the first labour, completely in the second. Secondly, that the fault in the development of the uterus is apt to lead to irregularity or weakness of pains, and so to protraction of

¹ Von der Mangel der Verkümmerung und Verdopplung der Gebärmutter. Würzburg, 1859.