disposal does not warrant any such conclusion. As yet the action of the drug has been studied only in relation to disease, and we have no evidence to prove its physiological effect in health. A study of the cases seems to point to the view that its beneficial action is due to its correcting the *constitutional* states which give rise to menstrual derangements, rather than to any specific effect on the uterine structures. It might equally well be stated that lime-juice has a direct action on the gums because it removes the scorbutic lesions of these parts.

The action of manganese has generally been supposed to be similar to that of iron, and accordingly at one time it was given in chlorosis and anæmia, but "failed to be of service." It does not act on the blood, its action is totally different from iron, but yet I have found it of decided use in chlorosis for its effect on menstruation, and of late I have added the carbonate of manganese to Bland's pill.

The study of my cases, from a constitutional point of view, apart from its action on menstruation, tends to indicate that manganese acts on the vasomotor system, improving and giving tone to the circulation. This is well seen in a constitutional state met with in young girls. They are not anæmic, rather the reverse, full blooded with languid circulation; the chief characteristic is that the face and extremities are hoven, with a tendency to blueness; there is a great loss of energy and a disposition to drowsiness in the daytime. Under the permanganate this constitutional state steadily improves. At first there may be a loss of weight, the colour becomes clearer, the fullness of the tissues subsides, and the energy returns. The loss of weight I have several times observed in patients taking the permanganate is not due, in my opinion, to increased combustion of the tissues, but to the diminution of the watery elements of the blood and tissues. The condition is not oedema, but a vascular fullness.

Much of the relief to menstrual suffering afforded by the permanganate is doubtless due to the improvement in vascular action. Several of the cases, which time will not permit to quote, clearly indicate that some forms of menstrual pain are caused by vascular distention and increased venous blood-pressure. It is in these cases the remedy may be relied upon to afford relief, and so improve the system that the suffering does not return at subsequent periods. The influence of the remedy on leucorrhœa is likewise, in all probability, due to the improvement in the circulation. The effect in affording relief to the ovarian pain admits of the same explanation.

The vascular changes associated with menstruation are, however not merely local but are truly systemic. The relief obtained in headaches can therefore be also understood by an improvement in the general circulation. But, as we have seen, the remedy influences not only the amount of the discharge but also the time, by restoring the normal periodicity. This points to an influence on the nervous system. Laschkeewitsch has shown that in toxic doses "manganese causes general paralysis, at the same time the heart's action ceases, owing to the direct effect of the drug on the motor apparatus."¹ From these pharmacological experiments, together with the results of clinical observation, we may confidently infer that the direct action of the remedy is on the vasomotor centres, and from the marked influence on menstruation it is probable that it stimulates especially the centres regulating the generative system.

A NEW METHOD OF EXCISING THE WRIST-JOINT.

By EDWARD THOMPSON, F.R.C.S.I.,
Surgeon to the Tyrone County Infirmary.

Excision of the wrist-joint, even in these days of antiseptic surgery, is an operation not much in favour with most surgeons. It is comparatively seldom practised, probably because, as a rule, the amount of disease which would justify such a very serious proceeding is too extensive to render success probable, while in slighter cases efforts are made to remove limited diseased portions of bone, a proceeding which I have often seen attended with very unsatisfactory results. The operation as perfected by Sir Joseph Lister is, notwithstanding all that can be said in its favour, clumsy and difficult of performance, and includes removal of the whole carpus, resection of the ends of the metacarpal bones, as well as of the ulna and radius. The following case, which has been

¹ Binz's *Therapeutics*.

under treatment in the Tyrone Infirmary, illustrates the change which I propose in the method of performing this operation.

Mrs. I., a strong, healthy, middle-aged woman, living near Dungannon, in the county Tyrone, was admitted into the Tyrone County Hospital, about two years ago, suffering from caries of some of the carpal bodies of the left hand. The diseased and loosened portions of bone were removed by careful gouging, and although there was some improvement, the woman went home very little better than when I first saw her. About five months ago she returned to the Infirmary in a very much worse state of health. She had lost greatly in flesh and strength; the lower part of the forearm and hand were swelled and much inflamed. The slightest motion, even of the fingers, caused intense pain. There were numerous sinuses both on the back and front of the hand and forearm, all of which communicated readily with carious bone. There was also a constant discharge of thin unhealthy pus. The patient was most anxious to have her forearm amputated, as her sufferings were intense. I determined, however, to try and save the hand by removing the diseased bone by a method quite different from the proceeding generally adopted in excision of the wrist. On the back of the hand, and within about half an inch of its ulnar border there was a large shallow ulcer about the size of half-a-crown. I selected the outer edge of this sore as the site of the incision, which ran between the tendons of the extensor communis and minimi digiti, and was about four inches in length. The edges of the wound were kept apart by retractors, the joint freely opened into, and a full and accurate view obtained of its inner aspect. The disease seemed to be confined to the first carpal row of bones, and to the lower extremity of both the radius and ulna.

A gouge was first introduced into the joint, and the semilunar bone gouged completely away; then each of the neighbouring bones was firmly caught by a strong forceps, slowly twisted from its connections and removed. The diseased ends of the radius and ulna were removed by gouging. Subsequently, as there was no difficulty in shoving the extremity of the radius and ulna through the wound, I thought it better to saw both bones straight across immediately above the seat of disease. In order to allow free drainage, a small incision was made on each side of the joint as close as possible to the level of the floor of the joint, and a drainage-tube inserted. The wound was stuffed firmly with iodoform gauze, and dressed antiseptically. A straight splint was placed under the forearm and hand, the palm being supported and raised on a roller bandage instead of a piece of cork as usually recommended. The case made an uninterrupted and speedy recovery, and the patient has now a good useful hand instead of an unsatisfactory mechanical contrivance.

This case seems to me of some importance, because it well illustrates the success of a plan of treatment which I believe has not been hitherto recommended. The method employed differs widely from the usual operation of excising the wrist-joint. It is easy of performance, free from danger, does not tear or injure any of the tendons, vessels, nerves, or deeper structures. It is quite bloodless, and does not require removal of any portion of bone which is sound and healthy. The opening on each side of the joint I consider essential, as free exit is thus given to any discharge that might possibly collect in the cavity left after removal of the diseased bones. Arthrectomy of joints, with removal of diseased masses of bone by gouging and the chisel, has a large field before it. Quite recently in the Tyrone Infirmary I opened freely into the knee-joint, and gouged away nearly the whole of the head of the tibia, draining the joint freely by two large drainage-tubes inserted above and below, and crossing in the joint. The case was a most unfavourable one in every respect, yet recovery was complete, the boy being out of bed in a few weeks, his limb being well supported in a plaster-of-paris case, which was put on immediately after the operation.

CASE OF POISONING BY NEW "SICHERHEIT" EXPLOSIVE.

By WILLIAM SYKES, M.R.C.S., L.R.C.P., AND F. GRAHAM TWIGG, L.S.A.,
Mexborough, near Rotherham.

P. D., male, aged 33, presented himself at the surgery on July 3rd, in the evening.

History.—Previous health excellent. Commenced mixing in-