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-

redients of "Sicherheit" explosive on Friday, June 28th, but Saturday and Sunday being holidays did not work a full day until Monday, July 1st, and since then worked regularly until the time of attending at the surgery. On Monday evening, July 1st, he began not to feel well, and his wife noticed that he was very blue.

Symptoms.—(1) Subjective: Has much headache of a dull and heavy character, chiefly frontal. Feels very short of breath on exertion. Is "muddled in his mind." (2) Objective: Is cyanosed all over. His appearance can only be compared to that of an infant with patent foramen ovale. The cheeks, naturally ruddy, are of deep purple-blue; hands blue except nails, which are of a yellow-white. The pulse is quick and jerky, 99 per minute. Sphygmographic tracing as below. The blood from prick of finger is of a

Pulse-tracing; pressure, 3 ozs.

dirty purplish-black colour; presents no remarkable features under the microscope, except that the red corpuscles are crenated. The heart-sounds are normal, except that the first sound is indistinct. Ophthalmoscopic appearance: Blood-vessels unusually dark in colour and dilated. Temperature at 9 P.M., 99.9° F. Urine dark orange-brown in colour, clear; specific gravity 1030, acid, no sugar.

Treatment.—Beyond a heart tonic by way of placebo the treatment was confined to free exposure to fresh air and sunlight, and absence from the mixing-room. The patient slowly amended, and had regained his normal health and colour in about two days.

OBSERVATIONS.—The "Sicherheit" explosive is a German patent, intended for blasting in coal mines and other places where a flameless explosive is indicated. A manufactory has been recently established at Denaby, by Mexborough, where P. D. works. His duty is to mix the ingredients in a steam bath, during which process noisome fumes are given off. The composition of the explosive is kept a profound secret, and the patient either is, or pretends to be, ignorant of its nature. Other cases with similar symptoms have arisen at the works, as we gather, but we have not been able to get particulars of them. The points of greatest note and interest appear to be the cyanosis (produced most probably by the rather stable combination of some gas with the red corpuscles of the blood) and the raised temperature. The subjective symptoms appear to bear proportion to the objective ones. The patient was able to walk to the surgery each day. His appetite was not interfered with; his only complaints were, as before stated, severe headache and "muddiness," with shortness of breath. It was his wife's alarm at his blue appearance, and not his own symptoms, which induced him to seek medical relief. So far as we are aware the case is a unique one.

TWO CASES OF MALIGNANT DISEASE OF THE THYROID GLAND.

By PROCTER S. HUTCHINSON, M.R.C.S.

A CASE of malignant disease of the thyroid, which came to Mr. Hovell's clinic at the Throat Hospital, and which, owing to his absence in Germany, he did not see, is, I think, worth recording, on account of such cases being rare.

The patient, R. P., a schoolmaster, aged 53, came complaining of a swelling occupying the right lobe of the thyroid, which he had noticed three months; it was very hard, tender on pressure, and immovable. It had come on rapidly, and was causing severe pain, shooting to the arm, dysphagia, and a husky voice. Laryngoscopic examination showed absolute fixation of the right cord in the cadaveric position. There was great pain at night, preventing sleep. He was a thin man, and had lost flesh. I saw the patient during two or three weeks, the enlargement always remaining as hard as a wood board. The patient died from exhaustion about six weeks from the first time I saw him, that is, about four months and a half from the time of first noticing the tumour.

I obtained a necropsy at his house. I found that since my last

seeing the patient, a fortnight before, the tumour had swollen to double its size. The whole gland was infiltrated with pus, and cut on section like liver. It had pressed closely on surrounding structures, but had not grown into them. Microscopic examination showed such a marked alveolar arrangement that the idea that the changes were merely inflammatory was negatived. The cells also in the alveoli had a more definite arrangement and outline than pus cells, though they were somewhat smaller than the usual size of soft cancer ones.

It is probable that the tumour, which had entirely replaced in the part examined the normal thyroid structure, was a small-celled cancer, though it had many of the characteristics of an alveolar sarcoma.

This case illustrates the difficulty, so often found in thyroid tumours, of determining whether the growth is sarcomatous or cancerous. Owing to the necropsy being done under disadvantageous circumstances, I was unable to examine the other organs, but he had no symptoms of disease elsewhere.

I am indebted to Mr. Hovell's kindness for permission to publish the case, and to my brother, Mr. J. Hutchinson, jun., for the microscopical examination. The dysphagia and aphonia were caused by pressure and not by the growth having involved either trachea or oesophagus. No enlarged glands were found.

The second case occurred in a woman, J. H., aged 56. She came to the hospital complaining of swelling on the right side of the neck, which had been present about five months. It caused some dyspnoea and dysphagia. The swelling occupied the position of the right lobe of the thyroid, was about the size of an orange, and was apparently only a simple goitrous enlargement. She was a florid, otherwise healthy-looking woman, and not in any way emaciated. She attended as an out-patient for some few months, during which time the goitre got gradually harder, and dyspnoea began to be more troublesome. On June 6th, 1887, she was admitted into the hospital, and an endeavour was made to remove the gland in order to relieve the dyspnoea. It was found, on cutting into the tumour, that it was too firmly attached to surrounding structures for removal to be possible. It cut like an unripe potato, and was very hard. A piece was removed for microscopical examination; it was not vascular. In the sections examined there seemed to be but little tendency to an alveolar arrangement; nevertheless, the occasional small groups of large nucleated cells suggested that the growth was of the nature of a scirrhus, or, at any rate, a cancer. The difference in size between the cells was very marked, the small round ones largely predominating in number. There was very little fibrous tissue present. The patient went home again, and died about five months afterwards; no necropsy was obtained. As in this case it was probable that malignant disease had developed in an old goitre, it is difficult to date its duration. I am indebted to Dr. Wolfenden's kindness for permission to publish this case. I have seen one other case, in a clergyman, aged 49, which came on in an old goitre, and proved fatal in rather over a year from the time of appearance of malignant symptoms. The glands were extensively involved later; no necropsy was obtained. The following is a summary of cases recorded in the *Pathological Transactions*, to compare the course of the disease.

Case recorded by	Nature of Disease.	Duration.	Sex.	Age.
Dr. Moxon	Encephaloid cancer	4 months	Woman	46
Dr. Payne	Medullary cancer	?	"	66
Dr. Church	"	7 months	Man	48
Mr. Bowly	Infiltrating fibroma	3 years	Woman	42
Dr. Carrington	Epithelioid cancer	?	Man	47
Dr. Gulliver	Malignant, complicated by myxodema	?	Woman	46
Dr. Norman Moore...	? epithelioma or sarcoma	5 months	"	46

I find in Mr. James Berry's Jacksonian prize essay of 1886 that he records altogether thirty-seven museum specimens. Of these, thirty were cancer (three being scirrhus) and seven were sarcoma. Thirteen occurred in one museum, that of Berne, in Switzerland; the other twenty-four in Great Britain. He thinks that malignant disease occurs more frequently in patients who are already the subjects of existing goitre than in others.

THE Minister of the Interior has given a thousand francs to the Paris Ambulance Organisation.