tact with the spine, but their application caused so much uneasiness that the patient declined to persevere with them, and in their place I ordered the frequent use of the belladonna liniment and compound chloroform liniment, which seemed to afford much relief and relaxation. A large bread-poultice was first applied to the hand and arm, and subsequently a lotion containing extract of belladonna was substituted, under which the wound cicatrised and healed favourably in a few days.

On February 18th, scruple doses of the bromide of potassium, with twenty minims of tincture of belladonna, were given and repeated every four hours, up to February 27th, at which time he was convalescent but very weak. Bromide of iron in eight-grain doses, with five-grain doses of hydrate of chloral, were then substituted for the bromide of potassium and tincture of belladonna, to be taken three times a day. On the 14th of March he was able to return to his ordinary avocations.

REMARKS.—The severity of the symptoms during the first week led me to form a very unfavourable prognosis, but the steady improvement after the administration of the hydrate of chloral, assisted by the bromide of potassium and that of belladonna, leads me to hope that in them we have agents which, in some instances at least, may be found efficacious in combating so frightful a disease. The self-possession and calmness displayed by the patient, as well as his partial ability to take and retain his food, no doubt contributed to the successful issue of the case.

NOTES ON THE USE OF HYDRATE OF CHLORAL.

By GEORGE STEWARDSON BRADY, M.R.C.S.

THE action and capabilities of this valuable remedy being still *sub judice*, it may perhaps be serviceable to place on record brief notes of some cases illustrating its use, which have come under my own observation.

CASE I.—The first case is that of a lady who has suffered for several years from irritable bladder and urethra, complicated, as is frequently the case, with retroverted uterus. This lady, now about twenty-five years of age, says she does not remember the time when she was able to retain her urine normally. Even when she was at school, the bladder was irritable and required frequent relief. Of late years, almost every recognised means of cure has been tried, including medicated injections into the bladder, anodynes and tonics in all forms, but with little or no success. Opium was to a certain extent serviceable, but produced unpleasant after-effects. In fact, until the introduction of chloral, no medicine gave relief sufficient to render its frequent use desirable. For the last six months, however, the hydrate of chloral has been taken almost nightly, in doses of thirty grains, with the effect of lulling, to a very large degree, the almost constant vesical irritation. It has not cured the disease, nor can it be expected to do so. Moreover, the original dose is now scarcely sufficient, and has been recently increased to forty grains. Except for a short period after its administration, it does not afford that complete insensibility to pain which opium effects; but its absolute certainty of action, the short period required for the induction of sleep, and the entire absence of unpleasant after-symptoms, render the chloral infinitely preferable. In this case, its use has had to be occasionally suspended, owing to subacute sclerotic inflammation, apparently induced by the drug; the tendency to which seems, however, to be subsiding. This patient has suffered much at the menstrual periods from pain and profuse discharge. It became an object to relieve this pain without the use of opium, which, though usually effectual when given in full doses, produced the greatest depression and misery afterwards, and seemed likewise to increase the menstrual flow. To meet this want, I gave hydrate of chloral in doses of ten grains every three hours, combined with a little sulphuric ether. This immediately relieved the pain, and, after the second dose, entirely suspended the menstrual discharge—a result not anticipated, and which I had been previously unable to effect by the use of ordinary astringents. Whether chloral may prove generally useful in checking menorrhagia, remains to be seen; but since reading Dr. Reynolds's note in the last number of the *Practitioner*, it seems not unreasonable to hope that its supposed astringent action on the arterial capillaries may make it useful in this way.

CASE II.—A gentleman, aged about 70, was awakened during the night with severe pain which much interfered with respiration, and threatened almost to stop it. A dose of spirit and hot water in the course of a short time relieved this, but he was unable again to lie down, any attempt to do so being followed by a recurrence of the pain and dyspnoea. When sent for in the morning, I found the patient tolerably well, but anxious to guard against a repetition of the preceding night's sufferings. There was little or no pain on pressure of the ab-

dominal and intercostal muscles, and no symptoms of asthma or heart-disease; the cause of the dyspnoea was not plainly discernible. The spirit, however, having given a certain amount of relief previously, I prescribed a mixture containing sulphuric and chloric ether, to be taken next night if the spasm returned. This remedy did no good, the difficulty of breathing returning and continuing as before. Hydrate of chloral in a dose of twenty grains was then ordered to be taken if needful. As soon as the old symptoms began to show themselves, the patient took one-half only of this draught, with the effect, however, of completely removing the distress and enabling him to pass a comfortable night. The same course was pursued on the succeeding night, and no further measures have been required. The affection was probably neuralgia of the diaphragm and other respiratory muscles.

CASE III.—This patient has suffered for years from chronic ovarian disease, characterised by recurrent attacks of inflammation, with formation of abscesses. The more acute symptoms are sometimes absent for months together. These intervals are, however, becoming shorter, and the pain and constitutional disturbance greater during the accessions of inflammation. In addition to the local pain, the most distressing symptoms are frequent and long-continued vomiting, anorexia, and restlessness; sometimes, also, hysterical aphonia and retention of urine. The nausea has often been especially distressing, and resisted every remedy that could be thought of, including some not in common use, such as narcein, which seemed to offer a prospect of relief. The hypodermic injection of morphia, but more especially of atropia, at one time did good in producing sleep, and seemed also to exert some little sedative power over the sickness; but the morphia had to be abandoned on account of the excitement caused by it, and the atropine to some extent lost its power by constant use. The hydrate of chloral, then just coming into general use, was given with the happiest effect. A dose of thirty grains sufficed to produce a quiet sleep of five or six hours' duration; when the symptoms were unusually severe, a larger quantity, amounting sometimes to fifty or sixty grains, has been given, and no unpleasant effects have at any time been observed. The effect, indeed, in producing quiet and refreshing sleep, has been perfect; and this result had been unattainable previously by any means known to me. The influence of chloral on the sickness has been scarcely less marked and beneficial, any threatening symptoms of that kind being usually removed by ten-grain doses, given at intervals of three hours.

In conclusion, I would say that my experience of chloral leads me to think it unrivalled in its power of allaying nervous excitement, and the painful and sleepless states arising from that cause. With the sleep, its effects on the system vanish; and in this peculiarity reside, probably, both its strength and its weakness as a curative agent. There are many cases in which it can never supersede opium, and many others in which opium would be more useful but for its prejudicial after-effects.

POISONING BY LOCAL APPLICATION OF CARBOLIC ACID.

By ROBERT LIGHTFOOT, M.D., M.C., Wincanton.

THIS case I would venture to call one of "carbolic idiosyncrasy", inasmuch as, from the peculiar train of symptoms excited by the use of a very weak solution of the acid, coming on when it was employed and ceasing when left off, its special features seem only explainable by supposing some peculiarity to exist in the patient's constitution—a peculiarity violently opposed to this agent.

Miss J., aged 51, had her elbow-joint excised on December 2nd, 1868, on account of disease of the cartilages. The operation was performed by my senior, Dr. J. Surrage of Wincanton, by the single posterior longitudinal incision. The wound was dressed with a weak carbolic acid and water lotion (one to fifty), applied on a many-tailed lint-bandage covered with oiled silk, the limb being supported by a leather splint. She rallied well after the operation, and progressed favourably for the first seventy-two hours, when a shivering fit occurred; the tongue rapidly fouled, the pulse rising from 100 to 120, with a weak and fluttering beat, the skin becoming very cold and clammy; at the same time vomiting of a very uncontrollable nature began. The bowels had not acted since the operation. Her face became much pinched and anxious, her spirits being greatly depressed. Nothing came from the wound save a drop or two of sanious non-purulent discharge, its edges being very dry and glassy. So suspicious were the local and general symptoms, that we were led to suspect pyæmia; still there was no tendency to wandering, jaundice, or sweet breath, either now or at any other time. On the fifth day after the operation, Miss J. seemed to be rapidly sinking from the exhaustion caused by the violent and

ceaseless urging. Her pulse this day was 130 to 140 per minute, and very thready; the tongue was covered with a thick brown coat; the mental faculties perfectly clear. The bowels acted after an enema; urine scanty, loaded with lithates, but not dark or carbonaceous looking. This same day (December 7th) the carbolic dressings were changed for linseed-meal poultices, and this had not been done many hours before a change for the better showed itself. In the course of forty hours actual pus was present in the poultices, and the constitutional irritation was entirely removed, the sickness being the last to leave.

Our patient continued to do well for a week, gradually improving up to December 15th, when the carbolic lotion (same strength) was re-employed. Within thirty-six hours vomiting began again, accompanied by the same train of symptoms as on the previous occasion. The discharge, which was abundant and purulent on the evening of the 15th, became scanty and rusty by the morning of the 17th; the urging, if possible, was worse than before.

Poultices were again substituted on the 18th, when we almost had given up hoping to save the patient's life. She was entirely supported at this time by enemata, her stomach not being able to retain even a little beef-tea or brandy and soda. Two or three days after the change in the application, healthy pus in fair quantity was coming from the elbow; and, with the exception of great prostration, the evil symptoms had all abated. Our suspicions were now awakened as to the existence of some undoubted relation between the above symptoms and the nature of the dressing; yet our faith in carbolic acid was so strong, that we hardly dared suspect it as the cause.

The patient went on very well with the use of poultices up to December 27th, when, for the last time, and with a similar result, the carbolic lotion was resumed. The wound was now nearly healed; two sinuses which had formed we thought to benefit by a bi-daily injection of the foregoing lotion. Fortunately, the first appearance of suspicious signs (*i.e.*, slight sickness after food) found us on the alert, and the injections were at once discontinued, the mischief being thereby nipped in the bud. For the next three weeks warm-water dressing constituted the sole treatment, and the patient left for her home on January 22nd, 1869, quite cured; with an arm which has since become fairly useful.

REMARKS.—Several instances of carbolic poisoning are on record, two if not three having had a fatal result. One appeared in the general and medical papers about two years ago. A man suffering from tooth-ache sought to relieve it by inhaling the acid, and died from the effects. Then there is the more recent case at the Worcester Infirmary—this, too, proving rapidly fatal—the cause being a carbolic enema. Even during the administration a fit occurred, accompanied by stertorous breathing, death resulting in twenty minutes. About the same time an account appeared of three unfortunate itch-patients who were admitted into a workhouse near Birmingham, and, through the mistake of a nurse, were treated with a strong solution of impure phenic acid applied freely to the surface of the body. One of the three, I believe, died from its effects, the other two suffering severely. Another case of partial poisoning was alluded to in a Guy's Hospital report as having occurred to Dr. Wilks, who saw the patient in consultation with Mr. Hill of Camberwell. Through the kindness of the latter gentleman, I have been favoured with the following brief history. "The case to which you refer was one of typhoid fever, in which extensive bed-sores existed. For two days I dressed them with lint soaked in carbolic acid (one part to five of linseed-oil). After the second dressing, severe and continuous vomiting occurred, and the urine became very dark (as with anasarca after scarlatina), leading me at first to think that there was hæmorrhage from the kidney. On discontinuing the carbolic dressing, the vomiting ceased and the urine became natural. Under the microscope there were no signs of blood-corpuscles, only dark amorphous particles, as of carbon. The sores were afterwards dressed with Condy's fluid (one to sixteen water), which removed the odour. They ultimately healed, though the worst that I have seen." In the University College Hospital Report, by Mr. Cluff, it is stated "that more cases of persistent vomiting of an uncontrollable nature occur after operations, which vomiting may or may not be aided by chloroform, and the only cure for which is the leaving off of the carbolic applications." In the three fatal instances, the acid seems to have acted as a narcotico-irritant, this action being probably due either to the strength or the manner in which it was given; but in Mr. Hill's case, as in my own, an irritant effect only was noticed. The same appears to hold good in Mr. Cluff's experience. The terrible vomiting is deserving of special notice. In Miss J.'s case every thing was tried to check it, save ice, which we could not procure at the time when most wanted. Creasote was given in pill before we suspected the real cause of the emesis; and it is a noteworthy fact that, notwithstanding the close relation between this drug and carbolic acid, it did not aggravate the urging tendency in the least, though quite ineffectual as regards stop-

ping it. The only means of relief we found—and, fortunately, a sure one—was that advised by Mr. Cluff; viz., at once to leave off all carbolic applications.

In conclusion, I would briefly allude to the following points in connection with our patient. 1. The very small quantity of acid which was used (to this, perhaps, the absence of carbon in the urine may have been due); 2. The close resemblance between the bad effects of the acid and the symptoms of pyemic poisoning, the distinctive marks being the absence of wandering, icteric tint, and sweet breath; lastly, and what is most conclusive, the intermittent character of the illness, so closely corresponding with the alternating use and disuse of carbolic acid; 3. Chloroform can hardly be blamed for aiding in the dangerous turn which our case took, seeing that our patient went on most satisfactorily for the first three days after the operation.

CLINICAL LECTURE ON THE TREATMENT OF STRICTURE.

BY MR. PAGET, F.R.S.

MR. PAGET lectured on two cases of retention of urine with slight stricture, in which the patients had been treated in the first instance by warm bath, laudanum, and rest, without catheterism, the last measure having been reserved until many days after the retention was relieved, and employed for the treatment of the purely organic stricture only. In one of the cases (to which Mr. Paget referred in a former clinical lecture, see p. 208), catheterism was attempted on admission, for a short time only, but unsuccessfully; this man had had incontinence of urine for six weeks before he got retention, and yet, after three weeks' treatment, by rest, alkalies, and plain diet, Mr. Paget was able to pass No. 9 without any difficulty into his bladder.

In the other case, retention was complicated by a perineal abscess, which was opened. The man was treated without any attempt at catheterism until the third week, when a single unsuccessful attempt was made; but a few days later Mr. Paget was able to pass No. 6 at once into the bladder. Mr. Paget dilated on the advantages of rest, the warm bath, and opium, in relieving retention, and on the continuance of rest with alkaline medicines and unstimulating diet for the subsequent complete removal of spasm, and of that swelling of the urethral mucous membrane which may not only produce retention, but, as in the first patient mentioned, may cause symptoms closely simulating those of the worst forms of organic stricture. The chronic congestion of the urethral mucous membrane, which probably existed in that patient and caused incontinence, was compared by the lecturer with chronic conjunctivitis and chronic swelling of the nasal mucous membrane.

Mr. Paget considered that the perineal abscess, which formed in the second patient, was probably the result of inflammation in strictures contiguous to the urethra, but without any extravasation of urine. Many of the perineal abscesses formed in connection with retention were produced in this way, and not, as is commonly taught, by ulceration of the urethra and localised extravasation.

Mr. Paget went on to remark on the morbid sympathies of the urethra, sympathies which were found in no other mucous track, and were quite peculiar to that over which the urine passed from the bladder. The first of these peculiar manifestations of sympathy with distant parts was the *syncope* which occasionally follows the passage of a catheter, the next was *epileptiform convulsion* from the same cause. Mr. Paget remarked that these two results never happened unless the patient were standing up, just as the same phenomena after excessive blood-letting were noticed only when the patient was in the erect position. Thirdly, *rigor* following the passage of instruments into the bladder was mentioned; this result was commonest in patients who had never been catheterised before, and unlike the two other phenomena, did not come on until water was passed for the first time after the use of the catheter. Rigor after catheterism was said to be commonest in persons who had ague, or who had lived in tropical countries, and the phenomena of the shivering fit were described as corresponding exactly with the course of an attack of ague. The rigor might often be prevented by the administration of brandy and water or other alcoholic stimulant immediately after the operation; and Mr. Paget spoke in high terms of Sir B. Brodie's practice in this respect.

In referring to the occasionally very dangerous character of these shivering fits, Mr. Paget mentioned that he had known death to follow simply sounding for stone in no less than six cases. As a rule, however, a rigor occurring soon after lithotomy, lithotomy, or the passage of a catheter, was not a dangerous sign. This brought the lecturer to