has the great disadvantage of, in many cases, being followed by anterior synechia, which frequently leads to loss of vision in the eye operated on, and occasionally to sympathetic ophthalmia in the other. It seems to me that any operation which is liable to be followed by anterior synechia should not, from that fact alone, be lightly undertaken. The new operation lessens greatly the difficulties and dangers of the above. With a very fine needle cautery highly heated a minute opening is easily made through the apex of the cone, this permits a continuous escape of the aqueous for from seven to fourteen days, giving rest and time for the weakened cornea to contract to its normal curvature, the well-known contractile power of a burn adding greatly to this.

No anæsthetic except cocaine is necessary, there being pain neither during nor after the operation. It is necessary that the pupil be thoroughly dilated with atropine before commencing to operate. No speculum should be used, and no pressure put on the eye during the operation, an assistant gently raising the upper lid. Directly the cautery has penetrated the cornea it must be removed, the eyelids closed and not opened again for three days, a little castor oil with atropine being gently rubbed along the lashes every morning, and the wool pad readjusted.

It is generally easy to tell when the cautery has penetrated the cornea, as a hissing noise is produced by the aqueous coming in contact with the hot iron, but during the operation the cautery may be occasionally removed, which allows the aqueous to escape directly there is perforation. I performed this operation on the right eye of a girl about six months ago; there was no difficulty whatever in the operation, and the wound healed up in about ten days. Before it was performed the vision was less than $\frac{1}{4}$, and she could see print only when very close to the eye; as soon as the wound healed, the vision had improved to $\frac{3}{4}$ of the normal. Such a result as the above is very encouraging. The patient came again two months ago, and asked to have the same operation performed on the left eye, which had been trephined about nine months before, and the vision was thereby improved; still greater benefit was, however, gained by my performance of the cautery operation. The advantages of this operation seem to me to be: (1) it is easily performed; (2) there is no risk of anterior synechia; (3) the slow and continuous drainage of the anterior chamber allows rest and contraction of the cornea; (4) the cauterised opening in the cornea leads to further contraction; (5) the scar is a small one.

A CASE OF ACUTE SPREADING GANGRENE, RESULTING IN RECOVERY AFTER AMPUTATION IN THE MIDDLE THIRD OF THE THIGH.

By BRIGADE-SURGEON C. H. Y. GODWIN, M.S.,

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PRIVATE W. H., aged 36, sought admission into hospital on March 27th, 1887, on account of feeling ill, and having a swollen foot. He walked in, but required assistance, and gave the following history. On the afternoon of March 24th he had felt pain in the left instep, had a rigor, and felt generally ill. He nursed himself until March 27th, when he felt so bad that he was obliged to go to hospital. He had been in fair health lately, but some years ago he acquired ague in the West Indies, and has been liable to attacks of it occasionally since. He is very abstemious in his habits, and could not account for his illness. Some three or four months ago a corn on the ball of the little toe gave him trouble; he picked it with his fingers; it inflamed, and a little discharge followed, but this had all healed some time ago. On admission he looked gravely ill, had a high temperature (104.6° F.), quick pulse, dry brown tongue, and was very weak; the left foot was swollen, and over the distal end of the fifth metatarsal bone a black slough was seen. A probe when introduced passed at once into a cavity extending to the plantar surface of the foot, over which was seen the indurated cuticle of a large corn; a foul, fetid odour came from the part. The cavity was opened up and syringed out with iodine water, iodoform sprinkled over the part, which was dressed with wood-wool and sal alembroth wool. In the evening the foot was more swollen on the outer side, and the skin in parts, when touched, gave the crackling of emphysema, in the deeper tissues. A free incision was made through the skin, when some dirty, fetid, purulent fluid escaped; but the mass of tissue looked to be dead. The whole wound was now washed out with 1 in 2,000 solution of corrosive sublimate, and dressed with the sal alembroth wool. Ordered two grains of opium, also an ammonia and bark mixture, and as much milk and beef-tea as he could take.

March 28th. He continues very ill; the skin over the foot had bullæ,

which contained a dark sanious fluid; the smell was most offensive; the same dressings were continued.

March 29th. There were more bullæ on the skin of the foot; the fifth metatarso-phalangeal joint was quite bare, and the bones composing it looked to be dead. The œdema had extended up towards the external malleolus; on touching the skin the same crackling feeling of emphysema was noticed; but the skin was in no sense brawny. Another incision was now made into this emphysematous tissue, when the same dirty, stinking fluid escaped, and dead connective tissue was exposed. The opium was continued, but the ammonia was stopped, as he thought it to be the cause of his vomiting; the urine contained albumen.

March 30th. The œdema had extended up the leg; the skin looked white and tense, with many blue distended veins; there were more bullæ on the skin of the leg; a plantar artery gave way during the dressing. As it was quite evident that it was a case of acute spreading gangrene, amputation high up in the lower third of the thigh was performed by long anterior and short posterior skin-flaps. On dissecting up the posterior flap, a streak of gelatinous infiltration was seen, which was scraped away, and a portion of skin removed; the wound was washed with 1 in 2,000 sublimate solution, and closed in the usual manner. He was then removed to a fresh ward, with everything clean and fresh about him.

March 31st. Temperature 97° , pulse 80. Bowels moved three times; tongue becoming moister; had a most profuse sweat; no rigor.

April 1st. Temperature 97.6° , pulse 80. Bowels moved three times; no return of sweating; dressings changed, wound looking well; no smell; quinine gr. v, twice daily, with milk, beef-tea, brandy, and eggs.

April 2nd. Patient very drowsy; subsultus tendinum; inclined to pick the bedclothes; bowels moved five times; slept badly; urine passed into the bed; wound quite healthy; no tension.

April 3rd. General condition improved; eyes brighter; no subsultus; bowels open four times; urine not passed involuntarily; all albumen disappeared from it.

April 4th. Bowels moved eight times; wound appeared to have united, except where drainage-tube entered; but the latter had a distinctly sour smell when removed; skin of stump blistered by the wet sal alembroth, which was applied dry.

April 6th. Bowels opened five times; appetite good; patient cheerful; wound appeared quite healthy, and as if quite firmly united at edges. Owing to the continued diarrhoea all mercurial dressing was omitted, and salicylate wool used instead.

April 10th. Owing to some discharge on the dressings they were removed, when a gush of dirty puriform fluid escaped, but it was not offensive in odour; the edges of the wound fell apart, and then masses of dead connective tissue escaped, so that the wound looked to be quite cleared out, and the long upper flap of skin fell loosely over the end of the bone. The sloughing seemed to start from the place where the gelatinous infiltration had been noticed at the time of the operation.

April 11th. Sloughs all clearing out; skin not implicated from this date; the wound began to heal by granulation, and the man has made a good recovery.

REMARKS.—In this case there was the history of the inflamed corn, then the sudden accession of severe constitutional symptoms rapidly becoming adynamic and typhoid. A patch of gangrene at once formed, which spread up the connective tissues on the outer aspect of the leg, giving rise to the feeling of emphysema, and the skin only became affected quite secondarily. It all commenced on March 24th; on the 27th he came to hospital; on April 1st it had spread so high in the leg as to necessitate amputation in the thigh, when infiltration was seen to have extended to the posterior flap. After this the stump seemed to progress most satisfactorily, but the man showed signs of septic poisoning by the profuse sweat, vomiting, subnormal temperatures, diarrhoea, subsultus, picking of the bedclothes, drowsiness, and blunting of the mental faculties, and passing urine involuntarily; but as he rid himself of the ptomaines, he improved. Then came the breaking down of the newly formed tissue in the wound. The urine became free from albumen, and never contained any trace of sugar or of mercury. No line of demarcation could be expected in such a case. The disease is referred to in the *Report on the Pathology of the Diseases of the Army in the East*, 1856, by Dr. Lyons, and also by modern surgical writers.

An examination of the leg was made by Dr. McGill, Assistant Professor of Pathology. Nearly the whole dorsum of the foot was in a state of moist gangrene; parts of the soft tissues over the metatarsal bones had separated, but there was no line of demarcation. The whole of

the outer side of the leg was tense and swollen, and presented bullæ on its surface. Pressure caused pitting and a feeling of deep crackling. Incisions gave vent to most foul-smelling pus; many parts of the muscular and subcutaneous tissues were yellow and jelly-like. The pus was evidently fast spreading up between the planes of muscles, regularly dissecting them from each other, and the jelly-like infiltrations extended as high as the external condyle of femur; the pus was also advancing along the deep planes of muscles. Inoculation of test-tubes containing 5 per cent. of sterile nutrient gelatine disclosed the presence in the pus of two distinct species of micro-organisms, namely, *a*, streptococcus pyogenes; *b*, staphylococcus pyogenes albus; *a*, being seen microscopically to exist as single cocci and also in chains; *b*, as single cocci and zoogloea-form masses.

CLINICAL MEMORANDA.

DIPHTHERIA CIRCUMSCRIPTA OR SANDRINGHAM SORE-THROAT.

From time to time I have met with cases, occasionally solitary, but generally in groups, which are, I think, sufficiently peculiar to deserve some attention. They have all the essential characters of diphtheria—rapid and extreme exhaustion, and death by asthenia, sometimes preceded by convulsions. In cases of recovery the characteristic paralysis, chiefly observable in the eyes, tongue, palate, and extremities, occurs during convalescence from the throat-affection; but the local manifestation of the disease, instead of being an exudation with a tendency to spread over the surface of the fauces, is rather a circumscribed and ash-coloured slough on one or both tonsils, this slough remaining almost stationary, and forming a centre from which the surrounding structures are invaded by a low form of inflammation, with sometimes swelling extending to the angle of the jaw, but no suppuration; in favourable cases the swelling terminating in resolution after the slough has become detached.

I first met with these cases more than twenty-five years ago in Norfolk, and from their frequency in that district I used to call them the Sandringham sore-throat. The last case I have seen was contracted by a boy aged 13, on board a training-ship on the Thames. In this case there was the circumscribed slough on one side only, and, after its separation, a distinct pit or sulcus remained. Convalescence was gradual, but continuous, for a fortnight or three weeks, when diplopia occurred, and the tongue, palate, and the extremities were subsequently affected by paralysis, which came on while the patient was in the country, where he had gone to recruit his health. When I saw him in consultation with the late Dr. Moxon, after the paralysis had developed, the pit or sulcus remaining where the slough had separated was still quite visible. Dr. Moxon at once pronounced it a case of diphtheritic paralysis, and particularly directed my attention to the absence of patellar reflex. On my referring to the circumscribed slough with severe constitutional symptoms, he said that I should be opening new ground if I could show that such a condition had been frequently followed by paralysis; for, although he said he had been in the habit of teaching that mild cases were the most likely to be followed by paralysis, he was not aware that such cases as those under consideration were similarly followed by that sequela, which he also said was due to a loss of the fat-fibres of nerves.

So far as I am aware, no cases of diphtheritic membrane spreading over the surface of the throat arose out of those which I have described, but all maintained the circumscribed character, though possibly in the case of young children the difficulty of accurate inspection may have led to some such cases being overlooked.

Fagge refers to the fact that "in the very same case of diphtheria the pellicles on the tonsils and those in the larynx differ essentially in their histology," showing "that our views in regard to the disease are not to be based on pathological anatomy alone;" but I fail to find any record of different groups of cases presenting only the peculiar features observed in those which I have endeavoured to describe.

ALFRED E. BARRETT, M.R.C.S. Eng., etc.

Holland Park, W.

COMMUNICABILITY OF LEPROSY.

THE whole of our profession owe a deep debt of gratitude to Professor Gairdner for his simple and clear statements concerning the communicability of leprosy by inoculation, in the JOURNAL of June 11th, and the proofs which he gives so plainly of his personal knowledge and experience of the cases he mentions set at rest for ever all doubts on the subject. I have had a largish experience in the leper-field on the Mediterranean, in the district called "La Marina," which takes in the sea-board of

the two provinces of Valencia and Alicante. In this almost unknown yet huge leper-nursery, so long and utterly neglected by its own Government, I visited in later years some fifteen or sixteen towns and villages, all more or less affected with this spreading disease, and examined hundreds of people of all ages, and in every stage of the disease, and made it one of the chief points in my stay among them to trace its entry into certain towns, which was easily effected, seeing in some of them it began in 1850; and what information I could not procure by my own constant observation and from hourly conversation with the resident *alcaldes*, *notarios*, *medicos*, the victims themselves, and from the *alguaciles* or resident police, I got from the parish priests, all of whom were most courteous and kind, and pleased to give me every information I desired.

The undoubted conclusion was forced on me that leprosy was, and is, decidedly communicable from one human being to another. Of course I include heredity. I have purposely avoided using the narrow and limited term "contagious," for the simple reason that the physiological and pathological laws that reign in leprosy have no bearing on those diseases to which that term is properly applied. So far as I know and tried to find out, we know nothing about the incubative period of leprosy, or the marked duration of its well-defined three succeeding stages; nevertheless it is a disease whose appearance, symptoms, and whole career is as clearly defined, if not more so, than small-pox and measles, or any other zymotic disease.

Although it is decidedly hereditary, I have never seen or been able to find an exanthematous leprosy baby or young child. The youngest that I have seen was a lad, aged 17, in full tubercular bloom, in the little seaport of Jabea; but there is a pathognomonic sign which I have never seen wanting in all hereditary leper-infants and children, and also in every acquired leprosy, be the age or stage what it may, that is, a marked and peculiar white and opalescent state of all the gums, lining of cheeks, the whole palate and pharynx, which gradually and slowly assumes a glistening, pearly look, and in the last stage becomes lustrous and brilliant pearly white, with uvula gone, palate tuberculated and puckered, narrowing the pharyngeal opening to a very small triangular space, from whence the voice spirits out in a whisper or chirp, with cold, icy, fetid breath. I may add that in my experience among the islands of the Pacific, extending from the Sandwich Islands on the east to New Zealand on the south-west—although the form of leprosy is different in its manifestations, the same physiological and pathological laws reign as in the tubercular form, and terminate in the same result, namely, death.

I trust the Governments (and ours among them) who allow their leper-subjects to ramble among their healthy fellow men without taking proper care of them, will see, read, and attend to Professor Gairdner's warning note.

WM. JELLY, F.R.C.P.

Kensington.

FOREIGN BODIES IN THE ALIMENTARY CANAL.

A few months ago I was hurriedly summoned to see a child who had accidentally swallowed a piece of lead, somewhat larger than a half-penny, and perhaps four times as thick. Though complaining of slight pain in the region of the stomach, he seemed nowise affected by the occurrence. I caused to be administered beef-steak in moderate quantities for several days, hoping that the lead would be squeezed through the pylorus by this somewhat indigestible material. In four days the foreign body was passed when at stool, causing no inconvenience, and was found to weigh almost an ounce. I have, however, ceased to wonder at the recital of similar cases since reading the account of the swallowing of false teeth and plate recorded by Dr. Galletly in the JOURNAL of March 12th.

Ayr.

W. J. LAURIE, M.D.

SUFFOCATION BY COAL-GAS.

THE following is a short description of a case of suffocation by coal-gas which resembles in *post-mortem* appearances the case reported by Mr. Bloxam in November, 1861, and mentioned in Taylor's *Medical Jurisprudence*.

I was called at 7 A.M. to see the body of Jane —, servant at an inn here. Her mistress reports that she complained of headache the night before, and went to bed at 10 P.M. She went to awaken her at 6 A.M., and found her dead and the room full of gas. I found the room a very small one (six feet by eight feet), with door and window (no grate), and still smelling strongly of gas. The gas-bracket was in the room, between the door and the patient's head. The mistress says the door was partially open, and the gas escaping freely at the burner, as if it had been blown out. The body was well nourished. There were no marks of violence, nor any evidence of a struggle. Rigidity was well marked. There was well-marked lividity of the